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Professional masters

An international comparative study

Report by

Maarja Beerkens
Adrie Dassen
Liudvika Leisyte
Hans Vossensteyn
Egbert de Weert

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Contact:

Hans Vossensteyn
Centre for Higher Education Policy Studies (CHEPS)
University of Twente
P.O. Box 217 7500 AE Enschede
The Netherlands
T +31 53 – 4893809
F +31 53 – 4340392
E i.j.vossensteynh@utwente.nl
W www.utwente.nl/cheps

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Executive summary

This report offers an analysis of professional Master degrees in six European countries. The issues related to professional Masters seem to be a response to several common pressures in current higher education environment: massification of postgraduate education, life-long learning goals, Bologna degree reform, increasing research orientation of the UAS institutions, and internationalization.

While the pressures are common to all, solutions seem to be quite different. Professional Master programmes in the six countries take quite a different form.

Finland. Professional master is a degree that has a clear vocational orientation. Having three years of prior work experience is a necessary condition for an enrolment. Students continue working part-time and their studies are closely linked to their work.

Flanders. There is no professional Master degree. The Flamish UAS do offer master degrees, but they can do so only in an Association with universities. Masters in the association are seen as 'academic' and do not have any distinct entrance requirements or restrictions for further studies compared to university Master degrees. The UAS Bachelors need to go through a bridging programme before they can enter the Master programme.

Germany. The master degrees in German UAS emerged with the Ba-Ma degree reform. The master degrees can have either an academic or a professional focus. While both have a thesis requirement, the latter has an internship incorporated in the programme. Both degrees are primarily a continuation of earlier Bachelor studies. The UAS also offer a *Weiterbildungsmaster*, which is designed as a part-time programme, requires earlier work experience, and is privately funded.

Sweden makes a distinction between general qualifications and professional qualifications both at the Bachelor and Master level. The professional qualifications are usually awarded within the regulated professions and the programme requirements and qualification are often specified by the government. By a general rule, postgraduate degrees can be offered only in universities, but recently a regulation has been implemented to allow postgraduate degrees in university colleges in limited and approved areas.

Switzerland established Master programmes in the UAS in 2006. The degree is offered only in limited areas and planned to be high quality, competitive and demand-led. It is intended for a small selected group of students.

United Kingdom has a unitary system and makes no distinction between professional and academic masters. A distinction is made between taught and research masters.

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Since countries have approached professional Masters differently, there seem to be no discussions that are common to all countries. Some issues that some countries have been or are still discussing are, for example:

- should the title of the postgraduate degree in the UAS sector be identical or different to the degree in academic universities (Finland, Germany)
- what other opportunities would fill the need of advanced level training in the context of life-long-learning and how they related to professional Masters (Flanders, Finland, Sweden, Switzerland)

1 Introduction to the study

1.1 Background

This study offers an international comparison of professional master degrees in six European countries. It is a response to the enquiry by the Dutch Ministry of Education, Culture, and Science and the *HBO-Raad*. The central question in this exploration is how in the long run the *HBO* sector can contribute to an increased quality of professionals in the Netherlands.

The professional master programmes are relatively new and restricted in the Netherlands. Their position in the higher education system is still in the development. One of the main discussion points concerns the extent to which professional masters in the *HBO* sector should be publicly funded, and, if so, which criteria for funding should be applied. The Minister of Education has recently decided that only those masters offered in the *HBO* sector that are of particular importance for the labour market or certain prioritized areas will receive public funding for a maximum duration of four years.

The central theme of this study is to explore the nature and organisation of professional masters in other European countries in order to help defining the role of professional masters (*beroepsgeoriënteerde masters*) in Dutch higher education. Lessons from other countries that deal with a similar context and questions are useful on two reasons. The international position of such professional masters is considered important because of increasing degrees of internationalization of both higher education and labour markets. Mobility of both students and employees is gaining in importance. Due to these processes educational programmes, students, and graduates increasingly have to meet international standards and expectations. One question therefore is the potential position of Dutch professional masters in the international context. A second point of importance is to map the developments and policy discussions surrounding professional masters in other countries, and to assess the extent to which Dutch policy makers can learn from these experiences

1.2 Research questions

The study is guided by the following set of research questions that are examined in different country contexts:

1. What constitutes a professional master?
2. What are the characteristics of the higher education system in which professional masters are offered?

3. What are the developments in terms of student numbers, graduates and the transition between different levels of higher education (bachelor, master, PhD and professional master)
4. How are professional masters shaped in terms of conditions, levels, study duration, funding, sector, status etc.?
5. What are the policy discussions surrounding professional masters in the countries selected? What are the goals, arguments, context, stakeholders and prospects of professional masters in these countries?

The study is structured as follows. In the rest of Chapter 1 we attempt to conceptualize the professional master. Chapter 2 presents a synthesis of the six case studies. Chapter 3 compiles the six country studies and the reader can find there a detailed description of professional masters in each of the selected countries. The final chapter offers an overview of main trends and discussions about professional masters.

1.3 Professional masters in the new educational structure

The introduction of the bachelor-master degree structure in the Netherlands and other countries has resulted in the development of different types of master programmes. Masters in principal have a study duration of one or two years (following a bachelor). In continental Europe, (university) masters are generally considered part of undergraduate training, whereas in Anglo-Saxon countries they are part of graduate programmes. A master degree is often a precondition for access to doctoral training (PhD). Currently, several types of master programmes are offered in the Netherlands:

- (initial) university masters, like MA MSc and LLM
- (initial) HBO masters, like MANP, March, MCI, MLA, and MPA
- University research masters, like MPhil, MSc (Res)
- Educational masters, offered both at universities and HBO's, which are programmes dealing with education and communication, like MEd, MSEN, MLE, and MEL
- Post-initial masters, which are mainly professional programmes, for university and HBO graduates with work experience, like MBA, MBI, MCC, Meng, MFA, etc.

The current study is predominantly concerned with the position of professional masters in the non-university sector. The most important aspects for the Dutch policy discussion are issues regarding the recognition and funding of such professional masters. Currently, master programmes need to be recognized in order to be allowed to issue the degree. Students in professional master programmes generally pay a higher tuition fee for enrollment in a professional master than for regular bachelor or university master degrees. At the same time, students enrolled in such professional masters are eligible for student financial support. In the Netherlands, the degree awarded after completion of a professional master does not allow the graduate to enroll in a doctoral programme.

In most European countries Master studies are still under transformation. Similarly to the Netherlands, many countries have created a self-standing Master degree as a result of the Bologna initiated reform of degree structures. There is still quite a variety how Master degrees are set up and how long are the studies (EUA 2002). A common tendency seems to

be a requirement of 300 ECTS before a Master degree is awarded. This includes Bachelor level studies, plus at least 60 ECTS of postgraduate level studies related to the specialization. The majority of countries and institutions are leaning towards Master level studies that require 90-120 ECTS. Master degree takes 1 -2 years.

The differentiation between academic and professional degrees is specified in some countries but not in others. In France, for example, students have to choose explicitly whether they enroll in a professional master program or research master program. The latter makes students immediately eligible for Doctoral studies, while the former imposes some restrictions. The UK, on the other hand, has no distinction on the “academic – professional” scale, but it distinguishes between “taught Masters” and “research Masters”. A research Master is a longer degree, usually for 2 years, and makes the candidate eligible for a doctoral program. Yet the title of a taught degree with a professional nature, such as Nursing, would still be a Master of Arts degree, indicating that all Master degrees are considered academic.

A definition of a professional master is far from unambiguous. Some countries make a clear distinction between a professional and academic Master degree, which has an effect on the nature of the training, selection criteria and eligibility for the doctoral studies. Other countries do not make the distinction and leave the discretion how to profile their Master programmes to the universities. Furthermore, in some countries the professional nature of a program is reflected in the title (e.g. Master in Social Work as opposed to M.A. or M.Sc.) while in other countries the distinction is not made. Moreover, an important part of professional degrees are degrees that are well-established in universities – dentistry, medicine, veterinary, etc. – which are not the main focus of this study.

Since “professional Master” has a different meaning and different nature in the international arena, we will use a rather pragmatic definition in this study. Since the main purpose of the study is to advise on Master degrees in Dutch HBO sector we will focus on the vocationally oriented sector in binary Higher Education systems. We will thus examine the role of the HBO-equivalent sector in postgraduate degree studies. In some countries this means degrees that are explicitly designed for professional development (e.g. Finland) and in other countries this includes also degrees that are defined as academic (e.g. Flanders). Such a flexible definition is useful for thinking how Master studies could and should be developed in the Dutch HBO sector.

The UK and Sweden are exceptions in our study. They are both unitary systems and the distinction on binary lines cannot be made. (Sweden though still has some reminiscences of different types of institutions.) The UK and Sweden are excellent cases to study how a unitary system tackles the issue of professional type of degrees when demanded by the labour market and by students.

The *European Qualifications Framework* and Dublin Descriptors define competencies that students in each level of studies, including in Masters, should obtain. The EQF distinguishes three aspects – knowledge, skills, and competence, but the framework does not make an explicit distinction between more professionally oriented or academically oriented programs. The framework offers only general guidelines about cumulative

advancements of qualifications. Several countries in our study have directly used the definitions of the European Qualifications Framework when designing their professional Master programmes. Switzerland, for example, uses Dublin Descriptors as a starting point when working out new programmes of professional Masters. Swedish National Qualifications Framework, however, distinguishes three types of programmes within the first, second and third cycle: qualifications in arts, social sciences and sciences; qualifications in artistic fields, and vocational or professional qualifications.

In sum, defining a professional Master is an impossible task. Every country conceptualizes it differently. In some cases a helpful distinction can be made between Masters offered by the UAS sector as opposed to university Masters. However, Germany UAS offer two types of Masters – with an academic orientation and professional orientation. And Swedish universities incorporate Master programmes with a strong professional focus. In some cases a helpful distinction can be made between programmes that incorporate an internship or other type of work experience in their study vs more “theoretically” oriented programmes. In the UK, however, it is explicitly shown that work placement is not a necessary element in providing professionally and vocationally oriented education. We have therefore taken a comprehensive look at the developments in the UAS sector in terms of postgraduate studies as well as how universities in unitary systems incorporate professionally oriented advanced education.

1.4 Methodology

The report examines closely the professional masters in six countries. For each country we have used multiple sources. As a part of desk research we have examined policy documents, evaluation reports, academic papers and other written material. After that, 2-3 experts from the Ministry of Education, university associations or individual institutions were interviewed. The purpose of the interview is to verify the information that was collected through desk research, obtain most up-to-date information, and explore current development in the areas. The interviewers followed a template that specified the range of issues to be covered during the interview.

When choosing the cases for the study we considered various system characteristics (binarity, size of the Universities of Applied Sciences (UAS) sector, the qualifications of the staff), as well as more general trends in terms of professional masters (see Table 1). We included countries that are similar to the Netherlands to learn from the experiences similar to ours as well as countries that are different and could inspire interesting thoughts for the Dutch system. Our final decision was as follows.

- **Germany** has a well defined and academically strong UAS sector, with a big proportion of students continuing at the master level. The system is different from the Dutch system as UAS are more university-like but still with strong professional focus.
- **The UK** is an interesting case because it is a unitary model. Professional masters are incorporated in the traditional university sector. At the same time, the system was unified only in 1990s and the traces of former polytechnics/ colleges can still be seen.

Moreover, the UK has a very competitive (and student demand driven) higher education environment. The UK is a good example of an Anglo-Saxon model.

- **Finland** is an interesting case because, unlike the former two, it has some similarities with the Dutch system. It is a clearly divided binary system, with a relatively large UAS sector, and with quite low research qualifications in the sector. The UAS sector is not aiming at research masters, neither is the degrees seen as a natural continuation to the bachelor program. Students can enter a master program only after 3 years of practical experience.
- **Flanders** is another case that is interesting because of its parallels to the Dutch system and the two countries have some similar discussions going on. It is a big sector (bigger than the university sector). Its unique characteristic is that the UAS offer Master degrees associations with universities.
- **Sweden** is another country that only from recently has a unitary higher education system, but it does have two types of institutions – universities and colleges. It is an example where professionally oriented degrees are incorporated in universities and no clear distinction is made between professional and academic degrees. Relatively recently Sweden implemented also a professional master degree that aims at mature students who are already employed.
- **Switzerland** is a country where the professional master was established in the UAS sector only 2 years ago. The provision of professional masters is under strict government control and UAS must demonstrate their research capacity before they are allowed to offer Master programmes.

Table 1.1 Analysis of different systems for providing professional masters.

	System characteristics (structure, size, research qualification)	Professional masters	Comments
Finland	Binary system Size: 46% Staff with PhD: 7%	Ca 2-3% of all UAS students	UAS students cannot automatically proceed to master studies. First they have to acquire the minimum of three years of work experience. The objective is that 20 percent of the bachelor graduates would take the masters professional degree No academic masters are offered in the sector.
Flanders	Binary system Size: ca 60% Staff with PhD: na		In an association with a university UAS can offer master degrees.
Germany	Binary system Size: 29% Staff with PhD: 90%	<i>In transition - BaMa</i>	40 percent of the bachelor's graduates from UAS continued their study in a second cycle (master) programmes. No distinction between professional and research masters. There only exists a distinction between four different types of profiles: stronger research-oriented, stronger applied-oriented, artistic and education-oriented. UAS Diploma and master degree holders are legally entitled to enrol in all relevant doctoral programmes at traditional universities. No special accreditation needed for offering master degrees.
Sweden	Semi-unitary: (research) universities and (teaching) colleges		Professional schools exist next to traditional faculties in universities (that were incorporated with the 1977 unification). Some colleges offer master degrees. Sweden introduced a new type of degree – professional Master – aiming at candidates who are already in employment.
Switzerland	Binary system Size: 28% Staff with PhD: 34%	Ca 3% of all UAS students	UAS have the right to offer a limited number of masters degree courses which requires accreditation in order to be eligible for a grant by the Confederation.
United Kingdom	Unitary system		Professional degrees are offered in the university structure. There is no clear distinction in academic and professional masters, the distinction is between taught masters and research masters.

Source: CHEPS UAS study, CHEPS country monitors, EUE survey on Master Degrees and Joint Degrees in Europe. * The proportion of UAS students in total student body

**Note: UAS – Universities of Applied Sciences (used generically for HBO, Fachhochschulen, etc.)

2 Professional masters: An analysis of case studies

In this chapter we will present both commonalities and differences in the approaches to professional masters in the six countries studied. We present lessons in a synthesized form and more details on each country can be found in Chapter 3 of the report. We will concentrate on specific issues related to professional masters, such as origins, rationale, titles, content, etc. We also learned that broader changes in the higher education environment have had a significant influence on the developments in the area of professional masters in Europe. Therefore we will first discuss the influence of broader trends and processes on the discussions related to professional masters.

2.1 Professional masters and higher education environment

2.1.1 *Massification*

Massification is a more general trend in the higher education in the last few decades. Since 1970s the demand for higher education increased rapidly in most developed countries and the enrolments skyrocketed. This is an era when many countries created another, more vocationally oriented higher education sector. We can now see similar pressures to expand also at the master level. In Sweden, for example, regulation was changed recently in order to allow more institutions (i.e. also university colleges) to offer postgraduate degrees and provide them with a special status. In Flanders we see that there is an increasing interest among students in UAS to continue their studies at Master level, with an increasing number of graduates entering the required bridging programmes. In Finland, better opportunities for students is one reason for establishing postgraduate degrees in the UAS sector. Students, also in the UAS sector, see the need for an advanced degree and are interested in higher learning. UAS graduates in Finland must meet additional requirements before they can enter a Master programme in an academic university and this puts UAS institutions in a weaker position in the eyes of students who in might be considering a postgraduate degree in the future.

The massification at the first degree level demonstrated that it is not only a change in the scale, but a change in the nature of higher education. Massification led to a call for higher labour-market relevance of higher education. It has also attracted students to the higher education that are not interested in academic but professional development and skills. And the massification is related to the belief that labour market needs skilled workers, so the higher education has a strong professional focus. As the massification has extended also to the Master level, the same trend is seen here. In the UK, for example, providing human capital for the knowledge economy has been also the justification for a new 'vocational' focus in teaching and curriculum in both "old" and "new" universities. The professional

emphasis is not limited only to professional programmes but it extends also to programmes that are seen as academic in their nature.

2.1.2 Life-long learning

Life-long learning needs have introduced new demands to higher education. Life-long learning is promoted by governments and there is also evidence of demand for study options after several years of work experience and initial Bachelor degrees. Filling the needs of the life-long learning is one of the main motivations behind the professional masters in several countries. We see that in many countries appear advanced degrees that target this group – people with Bachelor or diploma degree from earlier years and several years of work experience who are interested in continuing studies, but not in a format of an academically oriented master. These are usually degrees that blend theoretical learning with vocational practice, meeting better the needs of life-long learning but also encouraging mature students to undertake advanced level of learning.

In Germany, for example, UAS offer next to their regular Master degrees also *Weiterbildungsmasters*. These are further education master programmes that are normally offered in part-time, require at least 2 years of work experience, and their content is strongly practice. In Finnish UAS all Master programmes target this group. All Master students must demonstrate at least 3 years of work experience and the programmes are mostly offered part-time. Professional master degree, however, is not the only way to address the needs of the life-long learning. The critics of professional Masters in Finland argue that rather short term non-degree study opportunities are needed for life-long learning. In Germany some question that *Weiterbildungsmasters* is a Master degree in its traditional sense. Several countries therefore try to find also other opportunities for advanced learning. Flanders has established an Advanced Bachelor programme, offered only in the UAS. An entering student must have a Bachelor degree and the programme offers more in-depth knowledge and skills, but it is not a Master level degree. Sweden is upgrading its higher vocational education and offers post-secondary courses through close cooperation with upper-secondary, higher education, adult education, and private companies.

2.1.3 Bologna degree reform

A transition to a new degree structure has in some cases helped create Master programmes in the UAS sector. In countries like Germany, the diploma studies in Fachhochschulen were relatively long before the reform, comparable to a degree in the university. It was a logical step to break the study into a Bachelor and Master section. In other countries, like Finland, the study programme in UAS tended to be shorter. As a result, programmes in academic universities were broken into Bachelor and Master phases, while in the UAS the equivalent was only Bachelor level. The UAS in Finland created a postgraduate level programmes. Although universities and other stakeholders rejected the use of the term Master, international evaluators strongly recommended using the title that is well recognized in Europe for this level of studies. Bologna reform has helped to make it more transparent

what constitutes a Master level study and in this way facilitates initiation of Master degrees in the UAS sector.

2.1.4 Strengthening the research capacity of UAS

There is a general trend in binary systems to upgrade the research capacity and research output in UAS (Weert and Soo 2009). The development is primarily linked to the ideas of knowledge economy. It is realized that the UAS can make a unique contribution to the overall R&D in the country. Being universities of applied sciences, they are in a unique position to contribute to applied research. At the same time, considering the concepts of knowledge economy and knowledge workers, the continuous research and knowledge development is important also for the teaching function of the UAS. Finland is the best example here. UAS have given a bigger responsibility in R&D activities, but the expectations are clearly different from academic universities. UAS are expected to have a strong role in regional development and in the connection with small and medium sized enterprises (SMEs).

As a result, several countries have created special research funding programmes that target the UAS and several countries attempt to increase the research capacity in the sector. This is related to the issue of professional Masters for two reasons. First, these pressures increases the research qualifications of the UAS staff and low research qualifications can be one obstacle for higher level degrees in the sector. Secondly, the trend increases the demand for professional masters. In order to do more research, higher level education qualifications are needed. An academic master degree is often not applicable to the UAS type of research. Moreover, more often than not there are obstacles for the UAS Bachelor students to enter an academic master programme and therefore there is only limited student mobility between the two sectors.

2.1.5 International pressures

One pressure that has affected the structuring UAS masters as well as the titles of the degree is the desire to be internationally recognized and understandable. Higher education and labour markets are increasingly international and mobility of both students and employees is gaining in importance. Due to these processes educational programmes, students, and graduates increasingly have to meet international standards and expectations.

International comparability in degrees and titles is important. In Finland, for example, there was much discussion about the title of the postgraduate degree in polytechnics. After many discussions, the title of "Master" was agreed on. One of the factors that pushed towards using this title was the fact that it is an internationally recognized and accepted title for this level of studies. While this problem was solved, another issue has come up that imposes complications for Finnish UAS. The Finnish professional Master programme has a pre-requirement of minimum three years of work experience. This is one of the main discussion points currently because this requirement complicates international cooperation and joint degree programmes.

2.2 The origins and main characteristics of professional masters

We will now turn to the specific characteristics of the professional Masters in the selected countries and compare them with respect to history, requirements, status and other issues. For a quick overview, the Table below sketches the main characteristics of different higher education systems.

Table 2.1 Main characteristics of professional masters or masters in the UAS

	Origins	Key characteristics	Independent degree of continuation from the Bachelor?	Status Graduate or undergraduate?
Finland	Est. 2005 as a pilot	3 year working requirement	Independent Target: 20% students	Graduate “Equal but different” No entry to PhD
Flanders	Est 2003	Offered only through a UAS-University Association. UAS Bachelors need bridging program. to enter master in Associations	Independent UAS Bachelor is clearly the end degree. Bridging needed	Equal to university Master
Germany	Formally 1998 with the Bologna reform		Independent, but relatively prevalent. About 50% of undergraduates continue.	Graduate “Equal but different” Entry to PhD only with additional requirements. At the labour market tend to be lower paid.
Sweden	NA	Professional masters as such not known. Offered in universities. University colleges offer postgraduate degrees in limited and pre-approved areas.		1-yr Master is undergraduate; 2-yr Master is graduate
Switzerland	Est 2006	Intended for a small selected group of students.	Independent Plan: 20% of students continue (70% in some field)	“Equal, but different” Access to PhD under certain conditions, if the same discipline.
United Kingdom	NA (No distinction)	Distinction: taught and research masters. Many master programmes with clear vocational focus have emerged in last years.	Independent. Clear cut.	Graduate

Table 1. Main characteristics of professional masters or masters in the UAS (cont)

	Part-time or full time?	Duration & ECTS	Funding	Previous work experience
Finland	Part-time Assumes a close working relationship as a part of the degree)	60-90ECTS 1.5 – 2 yrs part time	No tuition fees Funded on the same basis and rate than the UAS BA students.	Required (3 years)
Flanders	Tend to be full-time (no clear data)	1-2 yrs Min 60 ECTS	Tuition fees the same for all BA and MA studies.	Not required
Germany	Full time <i>Weiterbildungsmaster</i> is part time, 2 yrs work experience	1.5-2 yrs	Same for the Masters in universities and the UAS. <i>Weiterbildungsmaster</i> paid privately	Not required for all Masters. Required for <i>Weiterbildungsmasters</i> .
Sweden	NA	Usually 1.5 yrs and 90 ECTS	Public funding to all master degrees	Not required, except in some fields (e.g. nursing)
Switzerland	Mostly full time	1.5-2yrs 90-120 ECTS	Publicly funded, same principles as BA (public, canton, tuition fee)	Not required, but may be considered in some programmes. May be required as an entrance requirement in case the Bachelor degree is obtained in a different study area.
United Kingdom	Both, but tendency to part-time	Min 1 yr.	All master degrees (incl. non-prof) have tuition fees.	In general not required

2.2.1 History and origins

Some countries have recently established master degrees in the UAS sector (Finland in 2005, Switzerland in 2006, Flanders 2003); others have a longer tradition of postgraduate studies in the system (Germany); and in the unified systems of the UK and Sweden it is impossible to point to the origins of professional master degrees.

The motivation behind the establishment is not always easy to point down. In Finland, the motivation was manifold. UAS masters were seen necessary to strengthen the capacity and the status of the UAS; to offer better opportunities to the UAS students who want to continue their studies, and to meet the needs and of knowledge economy and life-long learning. In Sweden professional qualifications have developed historically, both in universities and university colleges. Due to the increasing demand for postgraduate degrees the government has implemented a new regulation that enable to upgrade university colleges for a full university status (with a right to award master degrees) and offer Master degrees in university colleges in limited and approved study areas. Switzerland saw a need for advanced level, high-quality professionally oriented degrees for the development of knowledge economy. In sum, the pressures for establishing professionally oriented postgraduate degrees come from several sources: the recognized needs of knowledge economy and labour market, demand by students, and internal interests of the UAS institutions.

2.2.2 Main characteristics

As explained earlier, there is no clear definition of what is a professional Master. Different countries have developed quite different types of professionally oriented Master degrees.

Finland. Professional master is a degree that has a clear vocational orientation. Having three years of prior work experience is a necessary condition for an enrolment. Students continue working part-time and their studies are closely linked to their work.

Flanders. There is no professional Master degree. The Flamish UAS do offer master degrees, but they can do so only in an Association with universities. Masters in the association are seen as 'academic' and do not have any distinct entrance requirements or restrictions for further studies compared to university Master degrees. The UAS Bachelors need to go through a bridging programme before they can enter the Master programme.

Germany. The master degrees in German UAS emerged with the Ba-Ma degree reform. The master degrees can have either an academic or a professional focus. While both have a thesis requirement, the latter has an internship incorporated in the programme. Both degrees are primarily a continuation of earlier Bachelor studies. The UAS also offer a *Weiterbildungsmaster*, which is designed as a part-time programme, requires earlier work experience, and is privately funded.

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United Kingdom has a unitary system and makes no distinction between professional and academic masters. A distinction is made between taught and research masters. In the UK we can notice a strong role of non-governmental professional organisations in accrediting programmes in regulated professions.

2.2.3 Status of professional masters

Professional master in the selected countries are usually considered as “equal but different”. The entrance requirements tend to be identical to that of academic master. In Finland, additional work experience is required. The biggest difference is the transition to the PhD. Finnish Masters cannot continue PhD studies; in Germany and Switzerland graduates can enter a PhD program with filling certain additional requirements, in Flanders Masters from university Associations are equivalent to university Masters. In Sweden and the UK no distinction has been made.

Whether professional Master degrees are an independent degree or a continuation of the Bachelor is closely linked to the historical development of the degree structure. In the countries where the professional master degree was newly created – Finland and Switzerland – there is a clear statement that the Bachelor degree in the UAS is seen as the end degree to enter the labour market. In Finland there is a plan that about 20% of UAS students will continue their studies. Switzerland plans to have about 20% of Bachelors in the UAS to have Master degrees, but in some fields (health, architecture) this is expected to go up to 70%. In Flanders, on the other hand, where the degree was newly created but where it is closely linked with the university, the students tend to continue their studies immediately after their undergraduate year and a bridging programme. In Germany the Master degree emerged as a result of dividing the *Fachhochschule* diploma into a Bachelor and Master stage. About 50% of students continue their studies at the postgraduate level. The UK has had a Bachelor and Master structure in place also before the Bologna reform and there is a clear cut between the cycles.

2.2.4 Duration, ECTS credits and part-time/full-time studying

In general the professional master degree is minimum 60 ECTS and 1 year. More commonly it is worth 90 ECTS and takes 1-2 full years to complete. In all cases the degree is considered as a graduate level degree, although some restrictions may apply to

continuing studies at a PhD level. Only in Sweden there are two types of Master degrees: 1-year Master degree that is considered as an undergraduate degree and 2 year Master degree that is considered as postgraduate degree.

Most systems emphasize that there is blend of theoretical knowledge and professional skills. This is explicitly stated in Finland and Switzerland. The extent to which the degree incorporates vocational/professional component varies. In the UK the professionally oriented Master's programmes may include work placement learning module or longer placement in workplace environment but this is not a requirement. Master's programmes which are vocationally-relevant (for example, engineering, business studies, librarianship) may not include any workplace learning. At the same time, employability had been related to the programmes linked to professional accreditation (such as nursing, teacher training, social work) or the year-long work placements of 'thick-sandwich' programmes such as business, social science. For example, in the hospitality Master's programmes in the UK a placement year is a common phenomenon. This means, that the students in tourism, hospitality, leisure industry, events, heritage and catering management programmes may expect paid or unpaid work in the tourism industry locally or abroad as part of their Master's programme.

The proportion of part-time students in programmes varies greatly. In Finland, professional master students as a rule are employed and study part-time. The training is seen fully as a life-long learning component. In the UK, students in the professional fields tend to be more in part-time studies. In Flanders the proportion of part-time students is limited also by the funding system which disfavours part-time students.

2.2.5 Previous work experience and other entrance requirements

Entering a professional Master programme usually requires only a Bachelor degree and in case of limited places, good study performance. Only in Finland there is a formal requirement that a student must have had 3 years of work experience after their Bachelor degree. In Switzerland, work experience may be required in case the Bachelor degree is achieved in another field. In Sweden work experience may required only in some fields where it is seen as an important part of the qualifications (e.g. Nursing). In German Fachhochschulen work experience is not always required but about 18% of Master programmes target students with an earlier professional experience (*Weiterbildungsmaster*).

2.2.6 Labour market value

Labour market relevance and labour market demand is one of the common concerns regarding the professional masters, especially in the countries where professional masters have been newly created. Labour market demand is difficult to estimate. Finland started the pilot project of professional Masters with an analysis of the labour market. As a result of the study they concluded that employers do feel the need for high level competencies in the three planned areas: Technology, Health, and Business. In Switzerland also a number of analysis was conducted and the conclusion was that in some domains there is a need for a

limited number of Master programmes that offer more specialisation and in-depth study, for example in health. Switzerland has a clear position that professional Master programmes should respond to a clear labour market demand.

Yet evaluating a labour market need for a degree before the degree has been established and before employers have an experience with the degree seem to be quite a difficult task. As indirectly suggested by one interviewee, nowadays professional master programmes are required to prove clearly the market need for their qualifications while academic master degrees are not held up to the same requirement and their value is taken for granted.

When we estimate the labour market value of the programmes by the success indicators of the graduates then the programmes seem to be justified, at least in these countries that have some data. In Finland, the graduate rate of the first cohort has been very high and the labor market outcomes very good. In Switzerland the 2005 cohort had a 96% employability rate. The data thus proves that professional Master graduates have a strong labour market position. It must be of course kept in mind, that in both cases the programmes are relatively new and may attract above average motivated students.

2.2.7 Funding

There seem to be no significant differences in funding professional Master degrees compared to other university Masters or Bachelors in the UAS. In Finland, there is no tuition fee and funding for the professional masters is the same as for bachelor degrees. The number of students is agreed with the Ministry. In Flanders, Master students in academic universities and Associations have identical tuition fee. Also in Switzerland and Sweden there is no difference in funding professionally oriented masters. In UK all students pay tuition fees which vary according to the discipline and institutions, but it is not related to the professional orientation of the program. Only *Weiterbildungsmasters* in Germany, which is not publicly paid, is an exception.

3 Finland

3.1 System Characteristics

The Finnish higher education system consists of two complementary sectors: polytechnics and universities. Similarly to the Netherlands, the professionally oriented polytechnics sector is large and serves more students than the university sector. The total number of students in the sector is about 120,000, and 20,550 undergraduate degrees and 360 postgraduate degrees were awarded in 2007 (Table 1). In comparison, the universities awarded close to 6,000 Bachelor degrees, 14,000 postgraduate (Master) degrees, and 1,500 doctoral degrees. As early as 1995, the Finnish Government set a target that 60% to 65% of each new age group should receive higher education (Ministry of Education 2002). The rapid growth in higher education numbers has been accommodated to a large extent by the polytechnic sector.

Table 3.1: Key characteristics of Finnish higher education

	2004	2005	2006	2007
<u>Polytechnic Bachelors degrees</u>				
Entrants	32,690	33,260	32,370	32,210
Degrees awarded	20,670	21,140	20,770	20,560
Number of students	116,830	116,700	115,760	114,730
- of whom foreign students	3,730	3,930	4,600	5,300
<u>Polytechnic Masters degrees</u>				
Entrants	240	630	1,380	1,770
Degrees awarded	60	180	15-	360
Number of students	610	1,050	2,070	3,300
<u>University students and degrees</u>				
Entrants	20,970	20,786	20,150	19,648
Bachelors degrees	2,717	2,913	3,814	5,879
Masters degrees	12,588	12,920	13,128	13,884
Number of students	149,167	151,030	152,165	152,198
-of whom foreign students	3,048	3,221	3,619	3,980
<u>Doctoral education</u>				
Degrees	1,399	1,422	1,409	1,524
Number of students	22,110	22,200	21,899	21,557
-of whom foreign students	1,579	1,663	1,747	1,834

Source: Ministry of Education (2008)

There are 26 polytechnics in the Ministry of Education sector: six are run by local authorities, seven by municipal education consortia and 13 by private organisations. In

addition there are 2 special kind of institutions. The sector offers Bachelor degrees and since 2002 also Masters degrees. In addition, polytechnics arrange adult education and open education geared to maintain and upgrade competencies. The teaching arrangements in adult education are flexible and enable mature students to work alongside their studies. Some 20% of polytechnic students are mature students. The university sector consists in 20 institutions and offers Bachelors, Masters and Doctorate degrees.

The responsibilities of the university sector and polytechnics are clearly divided. The mission of universities is to conduct scientific research and provide research-based instruction and postgraduate education. Polytechnics train professionals in response to labour market needs. The role in R&D in polytechnics is getting increasingly important, but the nature of polytechnic research is different. It is related to applied research, and it targets the regional needs and the needs of small and medium size enterprises (SMEs).

The differences between the two sectors are also in the governance and funding. Polytechnics are municipal or private institutions, which are authorised by the government. The authorisation determines their educational mission, fields of education, student numbers and location. Polytechnics have autonomy in their internal affairs. The government and local authorities share the costs of polytechnics. Government allocates resources in the form of core funding, which is based on unit costs per student, project funding and performance-based funding. Polytechnics also have external funds. Finnish students have no tuition fees in higher education. On the experimental basis Finland introduced tuition fees to international students in the Master stage.

Similarly to universities, polytechnics operate on the basis of performance agreements. The Ministry of Education, the polytechnics and their maintaining organisations conclude three-year performance agreements, in which they agree on targets results and their monitoring and on major national development projects. Student numbers and project funding are determined annually. The internal culture and governance model is also different in polytechnics. While universities have a collegial and Humboldtian model, then polytechnics have a more managerial/corporatist model of governance (OECD 2003).

The polytechnics vary in size: some institutions have under 1000 students, some have over 10,000 students each. Most schools are built up as a network of polytechnics, having campuses in several locations. This is a result of the amalgamation of existing schools in early 1990s when the sector was created. However, this construction also illustrates one of the major goals of the polytechnic sector – to promote regional development and meet regional needs for higher education (OECD 2003).

3.2 Development of the polytechnic sector

The system of polytechnics is relatively new. The first polytechnics started to operate on a trial basis in 1991–1992. They grew out of the secondary level vocational institutions, as a result of an amalgamation process. Out of about 215 vocational institutions emerged 29 polytechnics. Polytechnics became permanent only in 1995.

The reasons for establishing the polytechnics sector were various (Bockerman et al. na). The most important aim was to respond to new demands for vocational skills that were seen to arise in the labour market (Ministry of Education 1990). The creation of the polytechnic system meant a rapid expansion in the provision of higher education. It facilitated a rapid increase in the number of matriculated students who did not have a student place in higher education. Furthermore, the purpose of the reform was to raise the general educational standard and training and to diversify higher education. There were also other motivations. The new polytechnic sector was expected to make Finnish higher education system more comparable internationally. It was expected also to strengthen the regional development and cooperation with SME-s and to make the system more comparable to educational systems in other European countries.

The number of graduates grew rapidly and by 2000 the number of new polytechnic graduates exceeded the number of new university graduates. The three largest fields are business and administration, social and health care (typically nursing), and technology and transport (typically engineers). Around 80-90% of all polytechnic degrees were awarded in these three fields. In addition, polytechnics offer degrees in humanities and education, culture, social sciences, natural resources and the environment, natural sciences, and tourism, catering and domestic services.

A polytechnic degree takes in general 210–240 study points (ECTS), which means 3.5 - 4 years of full-time study. The program consists in the core courses, professional studies, elective studies and a final project. All degree studies include practical on-the-job learning, which is worth 20 ECTS and lasts about half a year. Each student has a personal study plan, which facilitates student guidance and the monitoring of progress in studies. The entry requirement is a certificate from an upper secondary school or the matriculation certificate or a vocational qualification. Students apply for polytechnic studies in a national application system. The polytechnics determine the admission criteria and arrange student selection and entrance examination at their discretion.

3.3 Professional Masters

3.3.1 History of professional masters

Postgraduate degrees were introduced in the polytechnics sector in early 2000s only as a pilot experiment. A working group started to plan the pilot phase in 1998 and the first programs started in 2002. The experiment started with 300 study places in three specified fields: business and administration; social welfare and health care; and technology and transportation. These fields were found to have labour market needs for postgraduate specialists.

The initiative started with setting up several working groups and committees to establish whether the postgraduate degrees were needed and how they should be implemented. These groups consisted in experts in education, working life and different stakeholder

groups, including students. A working group in the field of *technology and transportation* concluded that post-graduate level professionals are needed because of the rapid changes in the industry and enterprises are not able to train their personnel on a full-time basis. The group in *business and administration* concluded that the graduates are needed, especially if trained specifically to meet the needs of SMEs. The group in the *health care* field pointed out that the profession is changing continuously and professions need to develop their special expertise. The expert group identified three areas of need: social and health policy, developing patient care practices and health care technology, and defining the tasks of the health care professionals and enlarging the scope of their tasks (Pratt et al 2005). The research and evidence thus supported the development of postgraduate degrees in the polytechnic sector. This does not mean that the decision about the need for postgraduate polytechnic graduates was unanimous (see below).

In the experimental phase, institutions could put forward proposals to the Ministry for offering postgraduate degrees. 20 polytechnics were successful and were granted the permission to start postgraduate studies either in one or more fields. The allocations were decided based on regional considerations, language group, and a qualitative evaluation. In 2002 a new field, competence management, was added as well as 4 more schools received the permission.

Originally the Ministry avoided calling the degrees Master degrees and in some publications of that time it is explicitly stated that it is a postgraduate degree but not a Master (EUA 2002). When first students started a program, it was not entirely sure how their degree would be called. The hesitation was related to the perception that a Masters degrees is an academic degree and only Universities should be able to award such a degree. Several international evaluations (OECD 2003, Pratt et al 2004) emphasized that this hesitation is not justified and Finland should call the degrees a Master, following the tradition in other countries. "We can see no justification for denying the polytechnics the name almost universally used for awards at this level" (Pratt et al 2004). Now students receive a degree that says in English Master of the field, for example Master of Health Care and Social Services. In Finnish, however, the degree is not called Master and thus has a different title than a postgraduate degree in academic universities.

In 2005 the experimental phase ended and the postgraduate degrees have become permanent. The target is set at 2,000 degrees annually and 20% of the total polytechnic degrees.

The postgraduate degrees were inspired by a number of factors. In general terms, the establishment was inspired by the overall commitment to knowledge economy and R&D in Finland. Post-graduate degrees were seen as an important tool to strengthen the position of polytechnics. "The role of R&D oriented knowledge-based work is increasing in all sectors, and this requires not only a rise in the general level of education but reinforcement of the position of R&D at polytechnics in particular. Post-graduate polytechnic degrees will probably play a significant role in achieving these goals" (Ministry of Education 2002). The Government's commitment to the knowledge economy and to lifelong learning in general were a compelling argument. A report of the Committee on Regional Development of

Higher Education strongly supported the development of polytechnic postgraduate degrees as part of the regional HE system's response to the needs of working life.

Labour market needs were also a crucial reason for establishing the degree. In the case of some professions there seemed to be an identified need for such kind of a degree. It is hard to say that there was an evident need for specific professions, as identified either by business representatives or potential students. The perceived need was more of a general kind. Interestingly, the Finnish Ministry of education made a point of building a "reserve" of educated labour, even if current labour market does not indicate the need for such labour force. A policy paper states that *"The population and the labour force should be appropriately overeducated if we are to ensure the availability of resources for meeting new challenges and adapting to constant change. There should always be something in reserve"* (Minsitry of Education 2002).

Next to these motivators, there seem to be other benefits. As pointed out in the interviews, postgraduate degrees are important for polytechnic students. Graduates of polytechnics are allowed to enter Master programs in universities after a bridging programme. In reality, however, very few polytechnic students are admitted and the bridging programme is an additional time hurdle for students. Postgraduate degree in the polytechnics widens study opportunities for students and enables to better attract strong students in the sector. In principle, students who enter universities and polytechnics in Finland are equally qualified and motivated. Postgraduate degrees in polytechnics will thus enable to attract students who are interested in an advanced level degree.

Finally, postgraduate degrees are seen as an important component in the life-long learning. Master studies in universities tend to be continuation programmes and do not always meet the needs of people who are already at the labour market and want to upgrade their skills. Polytechnics may be at a better position for this task since they have a more vocational focus. It should be reminded though that postgraduate degrees are offered only in these areas where universities do not offer a postgraduate degree, or where the orientation is significantly different (e.g. in business administration). Duplication of degrees is carefully avoided.

3.3.2 Organization of professional master degrees

Professional master degrees continue to be offered primarily in three areas: business and administration; social welfare and health care; and technology. Table 2 illustrates the Masters degrees offered in randomly selected universities.

Table 3.2 Master programs in selected Polytechnics

Institution	Master Programs	Comments
Arcada	Health Promotion (Swedish) Rehabilitation (2010) (Swedish) Social Services (2010) (Swedish) Media Management (2010) (English) Health Promotion (2010) (English) Media Management (2010) (English) Real Estate Management (2010) (English)	A small institution, 2,230 students. Offers education in Swedish, with a few programs in English. Situates in Helsinki.
Central Ostrobothnia	International Business Management Public Health Social Development and Management	A mid-small size institution, over 3,000 students. Situates in Kokkola and Pietarsaari.
Metropolia	Conservation/Restoration Cultural Production Media Production Music Clinical expert Rehabilitation Social work Welfare and Health development and management Health promotion Procurement Entrepreneurship and business Automation Technology Industrial Management (English) Information Technology (English) Construction	The largest Polytechnics, over 13,000 students. Situates in Helsinki, Espoo, Vantaa.
Turun	Clinician Rehabilitation Business, service sector Construction Social services Public Health and Social Development and Management Management of technological knowledge Health promotion Environmental Technology Entrepreneurship and business skills	One of the largest Polytechnics, ca 9,000 students. Situates in Turku.

Source: The institutions' websites.

For the entrance an applicant must have a Bachelors' level polytechnic degree and at least three years of work experience. An evaluation pointed out that both students and admission officers find the employment requirement as too restrictive and suggested that perhaps it be eliminated (Pratt et al 2004).

3.3.3 *The content and format of professional master degrees*

A postgraduate degree is unique both in its setup and entrance requirements. A polytechnic Masters degree requires 60-90 ECTS and takes 1.5-2 years. A close cooperation with the world of work is assumed during the program. It is a part-time program, assuming that students work at the time of studying. It is however not legally required that the postgraduate programme is a part-time programme. Some universities are considering opening full-time programmes, since part-time nature often makes the programme unattractive for international students who either cannot find a job, are not allowed to work, or prefer studying full time. Degree programs consist in mandatory core courses, elective courses and final thesis or project. The final project is usually linked with the student's employment.

An international evaluation of the postgraduate degrees in the polytechnic sector concluded that the programmes in general develop high-level competencies, are directed to the needs of working life, and are highly demanding and require considerable study time from students. It also concluded that in general there was a good support from employers and relevant associations in the region and that the students' projects help to improve practice and enhance change in industry and the profession (Pratt et al 2005).

At the pilot phase the drop-out rate was very low. The evaluation report found that few students start the programme with an intention to move to a new job; instead most seek to improve their professional knowledge, skills and understanding in relation to their current employment and to enhance their own performance (Pratt *et al.* 2004).

3.3.4 *Relationship with the labour market*

As explained earlier, a series of labour market analysis preceded the introduction of the degree programmes. All analyses showed the need for an advanced level degree. It must be noted that the conclusions of the analyses were rather soft. In no cases there was an evidence of a burning need that held back the business. Probably it is difficult to estimate the value of a degree that does not exist yet and with which business representatives and other stakeholders do not have an earlier experience. Secondly, it seems that polytechnics put into a position where they must defend them and offer clear evidence on the labour market need for their degrees while postgraduate degrees in universities are not asked to defend their position with the same rigour.

Polytechnics have a close cooperation with the business sector, public organisations and other stakeholders. They are involved in the curriculum development and the same is true at the postgraduate level.

3.3.5 *Governance and funding*

Master degrees are now offered in all fields that are taught in polytechnics, not only in the original three areas. All programs must be first approved by the Ministry. In Finland the number of students in each institutions is agreed through a negotiation process

(performance contracts). The total number of students that is agreed with the Ministry now includes also Master students. This means that the money that a polytechnic receives for a Master student and a Bachelor student is the same. Per student revenue differs by disciplinary fields.

There is no tuition fee in Finland and also Master studies in the polytechnic sector are fully covered by the government. Currently Finland is implementing tuition fees for international students at a Master level, as an experiment.

3.4 Policy discussions regarding professional Masters

The plan to allow polytechnics to offer postgraduate degrees was originally quite controversial (OECD 2003). While the two rationales – meeting the needs of the labour market and meeting the regional needs – was crucial for establishing the degree programmes, there were other motivations that supported the development. There was a demand by students for such a qualification. Without a postgraduate degree in the polytechnics sector the graduates have no opportunities for further academic qualifications. They could transfer to a university, but university degree has a different profile. Since the education in the polytechnics has itself justified – it is valued as distinct in its nature because it is linked with the world of work – there should be opportunities for students to continue their studies in the same profile. Moreover, there is a need for a route to further qualifications for people with experience in working life. In some fields universities started to offer programs with a strong professional focus, for employed students, which could be much better done in a polytechnic.

Postgraduate studies in a polytechnic are useful also for the polytechnic itself. Such programmes help to bring experienced practitioners into the polytechnics as students and thereby enhance an interaction between polytechnics and the professions. Furthermore, graduates from polytechnics can become members of staff at a polytechnics only if they have an higher level degree. This means that without Master programmes in polytechnics all candidates must leave the polytechnic sector and obtain a postgraduate degree at a university. Enabling postgraduate degrees in polytechnics would create an alternative route to enter the teaching profession, which in some case can be more appropriate in its profile, and this would help to retain staff.

Next to the positive opinions about the need for a postgraduate degree in polytechnics also strong negative arguments were articulated. Critical arguments were driven primarily by the fear of “academic drift” and doubts that such degrees are indeed needed at the labour market. One worry was that the proposal is driven not by labour market needs, but predominantly by a pressure from the institutions themselves. Existing polytechnics and their staff may wish to establish postgraduate degrees in order to increase their prestige and thereby make recruitment and retention of staff easier.

The danger of blurring the boundaries between the two sectors is one of strongest worries. The controversy is illustrated by the hesitation that the postgraduate degree in polytechnics should be called “Masters”. Some felt that it was too soon for this step, as the polytechnic

sector had been existing only a few years. Others felt that Master degrees should stay in the University sector as it is an academic degree and the university sector has a long experience with higher level studies (see Pratt et al 2004). As mentioned earlier, there is now a compromise that the degree is called a “Master” in English, but in Finnish it is referred to as an “advanced polytechnics degree”.

The controversy over the blurring boundaries did not disappear with the pilot period. An emphasis on the vocation nature rather than academic nature helped to alleviate some of the concerns. It is emphasised by the Ministry that the Master in the polytechnics is designed for people who are already in the labour market, while academic Masters are designed primarily for entrants to employment. Rather than blurring the boundaries, the Ministry hopes that this approach will “reinforce the identity of the polytechnics and the difference between their expertise and that of the universities, helping to further profile the two sectors” (Ministry of Education na).

Among some stakeholder there is still a doubt whether such a degree is needed. Some people think that what is needed at the labour market is short non-degree programmes while others think that there is a need for academic Masters’. Others strongly support the idea of postgraduate studies. The message from the world of work is thus not unanimous about the issue.

While international evaluations of the postgraduate studies in Finnish polytechnics has been largely positive, a few worries have been articulated (OECD 2003, Pratt et al 2004). An OECD evaluation articulated a worry about the level of studies in postgraduate programmes. This is not related to the quality of institutions, but the nature of the programmes. Some (if not most) of the programmes are intended to professionals who do not have a Bachelors degree necessarily in the same field. Therefore the institution must guard carefully that the level of qualifications corresponds indeed to the level of competencies required for a Master degree. This problem is not unique to polytechnics and concerns also universities that offer career type programmes.

Currently the situation with the professional masters is settled and no major controversies can be noticed. All stakeholders seem to content with the situation on the title: it is recognized as a Master level degree, but its title is different from that of an academic university in Finnish. One discussion point is the requirement that students must have at least three years of work experience before they are eligible to apply for a Master programme. This requirement was seen as quite restrictive by the international evaluation panel and it has caused problems for the institutions. There is a discussion whether the requirement is really necessary for the programme. The requirement causes problems primarily for international cooperation and joint programmes.

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4 Flanders

4.1 System Characteristics

Belgium is a federal state and this federalism has consequences for higher education. There are, in several respects, differences between higher education in the Dutch-speaking north (Flanders) and the French-speaking south (Wallonia). Since 1989, Flanders and Wallonia are responsible for their own higher education systems. For Flanders, this means it is fully responsible for the Dutch-speaking area and partly for the area of Brussels. The only responsibilities of the federal (i.e. Belgian) government are: deciding on the pensions of the staff members of educational institutions, laying down the length of compulsory school attendance, and determining the levels of education and the minimum length of studies required to obtain a degree at each level (Dassen and Luijten-Lub 2007).

The Flemish higher education system is a binary system. With the act of 1995, universities of applied science (*Hogescholen*) became part of the higher education sector in addition to the (more research oriented) universities. Currently, the higher education sector is comprised of 22 universities of applied science, and 6 universities (www.ond.vlaanderen.be). All these institutions are publicly funded (Van Damme 2008).

The aim of the Bologna declaration to create one higher education area has jump-started a chain of evolutions in the Flemish higher education system. After signing the Bologna declaration, the Flemish Ministry of Education started a process to reform the Flemish higher education system. The Flemish Parliament adopted a new Higher Education Act in 2003. This structure decree was the first of many decrees adopted. This decree called for significant reforms in the Flemish higher education landscape. One of the most important changes in Flemish higher education due to the Bologna process was the introduction of the Bachelor-Master degree structure in the academic year 2004/2005. The old system of *graduaten*, *kandidaturen*, and *licentiaten* was abandoned. A uniform system of bachelors and masters was implemented at both universities and the universities of applied science. The *graduaten* became professional bachelors. At the universities, academic bachelors and masters were introduced. The doctoral degree comprises the third cycle of the Bologna degree structure and is only issued at universities (Vercruyssen 2009).

The introduction of the 3-cycle degree structure was one of the most important reforms encompassed in the Higher Education Act of 2003, but it was not the only one. Other issues that were part of the decree include the entrance conditions for higher education, the language of instruction, issues concerning quality assurance, and last but not least, the establishment of associations .

4.1.1 Associations

The aim to create a European Higher Education Area made the stakeholders in Flemish higher education realize that increased cooperation was a necessity if the higher education institutions and government wanted to be involved in the relevant European networks. From this realization of the necessity of increased cooperation between universities and universities of applied science, the idea of associations between the two types of higher education institutions emerged. An association is comprised of on the one hand one university which has the authority to offer both bachelor and master programmes, and on the other hand of at least one university of applied science (which cannot offer master programmes on its own). Neither universities nor universities of applied science can be part of more than one association (Vanden Abeele 2008). Associations can be defined as cooperative structures in which universities and universities of applied science cooperate in both teaching and research (www.vvs.ac). Increased cooperation between the two different types of higher education institutions should result in closer cooperation, which in turn would be profitable for students in the sense that programmes should be better connected and the transitions between bachelors and masters facilitated.

Since the 2003 Higher Education Act, five associations have formed in Flanders: *Associatie KU Leuven*, *Associatie Gent*, *Associatie Universiteit en Hogescholen Antwerpen*, *Universitaire Associatie Brussel*, *Associatie Universiteit-Hogescholen Limburg*. Associations have amongst other things the following competences (source: www.ond.vlaanderen.be):

- Offering bachelor and master programmes;
- Coordination of undergraduate and graduate programmes;
- Creation of multi-annual plans to improve the quality of teaching and student counseling;
- Creation of multi-annual plans to improve the quality of research;
- Creation and implementation of a quality assurance system for research;

One of the goals is to ‘upgrade’ the academic degrees of the non-university sector. University colleges can, via the Association, offer academic bachelors and masters degrees, and these will be turned into university degrees by 2012. Universities enroll about 38% of bachelor and master students, universities of applied science 62%.

4.1.2 Degree structure

The higher education system consists of professional bachelors degrees and two-tier academic bachelors and masters degrees. As regards the bachelors degree, there are three types of programmes: professional bachelors programmes, advanced bachelors programmes, and academic bachelors programmes. For bachelors programmes (both professional and academic) the general admission requirement is the Flemish *Diploma van secundair onderwijs*, the secondary school-leaving certificate. If a foreign qualification is recognised on the basis of a Flemish decree, a Belgian law, a European directive or an international convention, the holder will have direct access to bachelor programmes. Admission may also be granted to students, after individual assessment of their secondary education diploma, if it gives access to higher education in the student’s country of origin.

The higher education institution boards are also allowed to admit persons who cannot meet the general admission requirement. After successfully earning at least 180 ECTS credits, students obtain a bachelors degree.

Academic bachelor degrees prepare students for studies at the master level. These degrees are awarded by universities and by some universities of applied science (i.e. by those that are part of an association). Academic bachelor degrees give direct access to master programmes. Some masters degrees will give access to advanced masters programmes (at least another 60 ECTS credits), in some cases after a preliminary examination. The institution board will stipulate which master degrees give access to these specialised and advanced master programmes.

Professional bachelor degrees prepare students for specific professions. Courses are therefore practice-oriented and include periods of work placement. These degrees are only awarded by the universities of applied science. Some universities of applied science offer profession-oriented specialization programmes for holders of a professional bachelor degree. These subsequent bachelor programmes have a study duration of at least one year on a full-time basis.

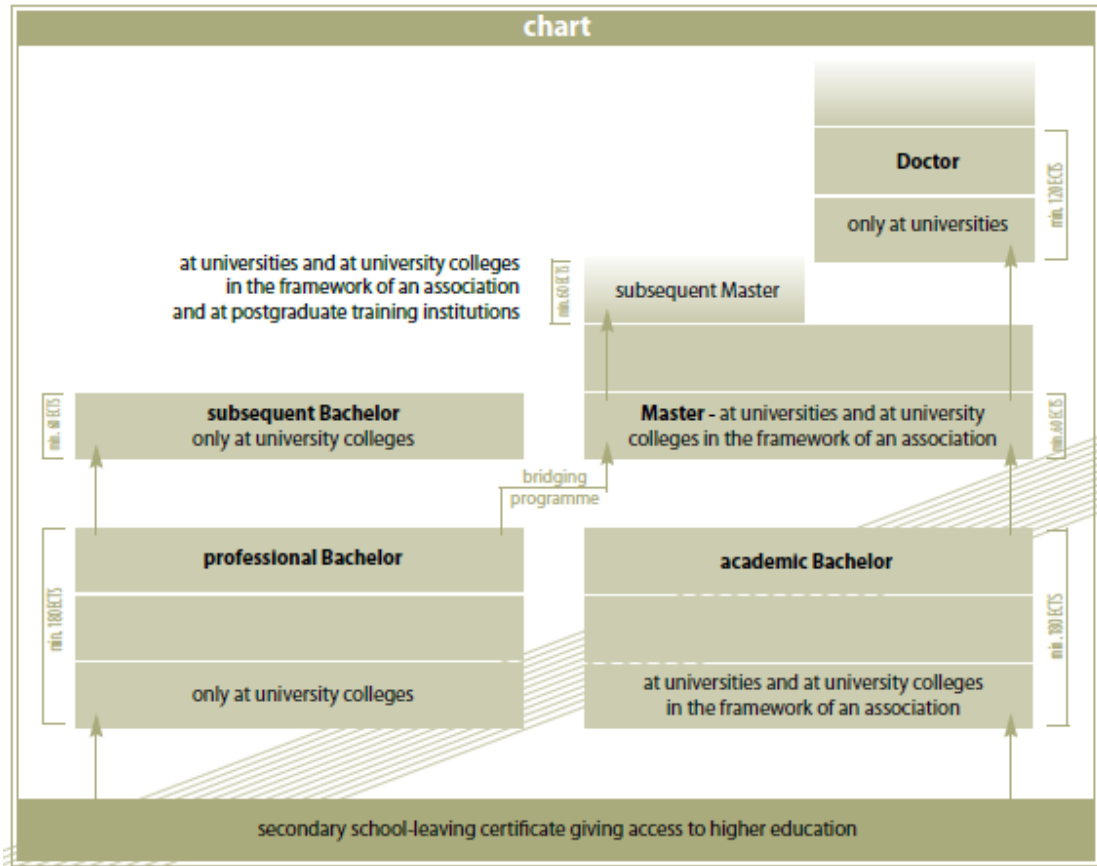
Professional bachelor degrees may give access to some master programmes after a bridging programme. The programme and study workload will be determined by the institution board, with due consideration for individual skills, working experience, qualifications and competences of the student after an evaluation interview. Besides the academic master programmes, advanced masters programmes are offered in Flemish universities. Students that want to enroll in an advanced master programme have to meet the entry requirement of holding a masters degree.

Master programmes are characterized by the integration of education and research and a master dissertation. A masters programme has a study duration of at least one year full-time (60 ECTS). Depending on the field of study, some programmes last longer. Advanced masters programmes are organized at universities, university colleges in the framework of an association, and at postgraduate training institutions. A master degree is an admission requirement for these advanced masters programmes.

As already mentioned, the Flemish higher education system is a binary system with a university sector and a non-university sector (*hogeschole*). The six universities offer three-year academic bachelors, one- or two-year masters (and one-year subsequent masters, that is, master programmes for which students can only enroll if they already hold a masters degree), and PhD degrees. The 22 university colleges offer three-year vocational bachelors programmes, three-year academic bachelors within the framework of an Association, one-year subsequent bachelors, and one- or two-year master programmes within the framework of an Association.

The structure of the Flemish higher education system is summarized in figure 1 below:

Figure 4.1: Overview of degree structure in the binary higher education system in Flanders (source: Higher Education in Flanders 2008, Ministry of Education)



4.2 Quantitative Characteristics of the System

The Flemish higher education system is characterized by a large university colleges sector, and a somewhat smaller university sector. The tables below summarize the main figures in terms of enrollment per type of institution, enrollment per type of programme, and gender.

Table 4.1 Student enrollment in higher education (academic year 2009-2010)

	Males	Females	Total
By sector			
University colleges	54130	62938	117068
Universities	35131	44027	79158
Total	89261	106965	196226
By programme			
Professional Bachelor programmes	37305	51958	89263
Academic Bachelor programmes	33452	34535	67987
Master programmes	15563	16925	32488
Master after professional bachelor	215	417	632
Bridging programmes	2600	2773	5373

Source: http://www.ond.vlaanderen.be/hogeronderwijs/werken/studentadmin/studentengegevens/Hoger_onderwijs_in_cijfers_0910.pdf

Table 4.2 Change in student enrollment 2009-2010 compared to 2008-2009

	2008-2009	2009-2010	% change
Professional Bachelor programmes	85753	89263	+4%
Academic programmes	97726	101590	+4%
Bridging programmes	4306	5373	+25%

Source: http://www.ond.vlaanderen.be/hogeronderwijs/werken/studentadmin/studentengegevens/Hoger_onderwijs_in_cijfers_0910.pdf

Table 4.3 Students with professional Bachelor degree in Master programme per sector in the academic year 2009-2010

	Males	Females	Total
Arts	6	7	13
Veterinary science	0	2	2
Economics	3	1	4
Farmaceutics	1	0	1
Medicine	192	383	575
Psychology	4	18	22
Law	2	4	6
Engineering	7	2	9

Source: http://www.ond.vlaanderen.be/hogeronderwijs/werken/studentadmin/studentengegevens/Hoger_onderwijs_in_cijfers_0910.pdf

These numbers show that the absolute number of students that enroll in a master programme after completing a professional bachelor, is rather limited. However, the tables

also indicate that this number is increasing. Enrolment in a master programme is the logical next step for many graduates with an academic bachelor degree, as is entering the labour market for those with a professional degree. However, increasingly, graduates with a professional bachelor degree enroll in bridging programmes that allow them to subsequently enroll in (academic) master programmes (cf. Sermeus 2009).

4.3 Professional Masters

The Flemish higher education system does not know a professional master. Despite a clear distinction between professional and academic bachelor programmes, the Flemish higher education system does not know master degrees that have a professional orientation. However, there are two types of programmes offered in Flanders that are of interest for the discussion of professional masters. First, within the framework of an association, universities of applied science are allowed to offer master programmes. Second, the Flemish higher education system offers students that have obtained a bachelor degree with a professional orientation an opportunity to enroll for an advanced bachelor. We will elaborate on both types of programmes below.

4.3.1 Master programmes in the framework of an association

Universities of applied science in principle offer bachelor programmes with a professional orientation. The vast majority of bachelor students is enrolled at a university of applied science. However, the reforms (most importantly the Higher Education Act of 2003) of the Flemish higher education system that were a response to the Bologna process set out an opportunity for universities and universities of applied science to enhance cooperation and coordination in both teaching and research. Associations were formed in which one or more universities of applied science cooperate with one university. Within the framework of such an association, universities of applied science are allowed to offer besides bachelor programmes with a professional orientation, academic bachelors and academic master programmes (De Clerq 2009).

The master programmes in which universities of applied science take part within the framework of an association are thus not professionally oriented, but rather have an academic orientation. This is result of a reform process that is called the ‘academisation of higher education’. Academisation refers to the process in which pre-Bologna study programmes are gradually transformed into academic bachelor and master programmes. Recent years have displayed a trend towards putting a stronger emphasis on the ‘academic’ instead of the vocational content of the bachelor and master programmes. Universities of applied science are nowadays allowed to organize professional bachelor programmes and, if they participate in an association, also academic bachelor and master programmes. They cannot award the doctorate. It is intended that these academic programmes offered by universities of applied science in the cooperation framework of the associations become full-blown university programmes by 2012.

As mentioned earlier, not all bachelor degrees issued in Flanders give students direct access to a master programme. Students that have been awarded an academic bachelor degree, issued either by a university, or in the framework of an association by a university of applied science, can directly enroll in a master programme (again, offered either at a university, or in the framework of an association by a university of applied science). Graduates with a professional bachelor degree, however, need to participate in a bridging programme before they can enroll in an academic master (De Clerq 2009).

Master programmes in Flanders are therefore all academic by nature. The study duration varies between one-year and two-year masters, based on full-time enrollment. Part-time enrollment is possible, but the opportunities for student support are different for part time students. Students have to pay tuition fees. The amount depends on the institution and the type of programme they attend. Amounts vary only slightly between institutions and are annually raised by the inflation rate. On average, full-time students who do not receive a grant, have to pay €445 for university programmes, programmes at universities of applied science, and programmes offered by associations. There is no discrimination between bachelor programmes and master programmes in this respect.

4.3.2 Advanced Bachelor programmes

Graduates of a professional bachelors programme can also enrol in an advanced bachelor programme. These advanced bachelor programmes are offered only at the universities of applied science. An advanced bachelor programme is aimed at more in-depth knowledge and/or competences already acquired in the initial bachelor programme with a professional orientation. A student should already have a bachelor degree to be able to enrol. These programmes consist of at least 60 ECTS and are generally completed within one academic year (www.nvao.net).

Everyone who qualifies for study financing can be financially supported for two bachelors, a master, a preparation programme, a bridging programme, and a teacher training programme as further education. As study paths have become more flexible with the implementation of the Bologna degree structure, study financing also has become more flexible. A system of study credits has replaced the study year system. The study financing amount is linked to the number of study credits for which a student is enrolled. Students that have previously obtained a professional bachelor degree are therefore financially supported to the same extent for their master (and the required bridging course) as students that have obtained an academic bachelors degree.

4.3.3 Transition to the Master level

Master degrees are offered in a wide variety of fields and considered a logical continuation of an academic bachelor. The academic bachelor is therefore not yet a truly independent degree. This is different for the professional bachelor degree to be obtained at a university of applied science. Professional bachelor degrees train for the labour market. However, although in absolute numbers still marginal, the increasing number of students participating in a bridging course indicates that some students do opt to enroll in a master

programme after obtaining a professional bachelor degree. If however, we compare the enrollment in a master programme after on the one hand completion of a professional bachelor, and on the other hand of an academic bachelor it becomes clear that master students mainly have an academic initial degree.

4.4 Policy discussions regarding professional masters

Professional Masters as such are not particularly part of any discussions as regards a reform of the Flemish higher education system. Rather, concerning Master programmes the opposite trend is noticeable. The main debate within higher education institutions on the structural organization after the academisation process in 2013 concerns the following questions: Will the universities of applied science continue to exist or will they move and only be hosted by universities? Will the universities of applied science that offer professional bachelor programmes also be integrated in universities? It is important to note here that the current minister is in favour of the binary system where academic-standard programmes offered by universities of applied science within an association will be integrated into the university once they have been fully accredited by the end of 2012 (DG EAC Organisation of the Education System in the Flemish Community of Belgium, 2009). With the formation of associations universities of applied science got an opportunity to offer, in cooperation with a university, academic programmes at both the bachelor level and master level. A trend towards further academisation of the higher education sector is therefore seen (Uijterwijk and Schouten 2009). Growth in both the vocational and the academic programmes in terms of student numbers is comparable, but noticeable is the significant increase in the enrollment in bridging courses. These bridging courses allow students that hold a professional bachelor degree to (after completion of the bridging course) enroll in an academic master. Policy discussions seem to be directed towards a further academisation of the universities of applied science sector as well. Some stakeholders have already pointed towards the possible change of universities of applied science into universities (Thema 2, 2009), thereby negating the binary divide. One trend that supports this observation is the policy goal to acknowledge all bachelors and masters currently offered within the framework of an association as full-blown university degrees by 2012.

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5 Germany

5.1 System Characteristics

In Germany the 16 federal states – the Länder – are legally responsible for their own higher education system. Higher education policy is an aggregate of sixteen potentially different policies for higher education. German higher education is overwhelmingly publicly funded, and institutions have to follow the budgeting and accounting legislation of German public administration. These laws, although set by the individual states, are more or less similar across the country (Kaulisch and Huisman, 2007).

In 2007 there was a total of 383 higher education institutions spread throughout the Federal Republic of Germany. There are different ways to categorise the institutions, but usually the distinction is made between the universities (including Technische Hochschulen, Pädagogische Hochschulen, and theological colleges), vocationally-oriented Fachhochschulen (universities of applied sciences including Verwaltungshochschulen) and Colleges of art and music. At the moment, there are over 100 universities in Germany and some 180 Fachhochschulen. Next to these types of institutions there are professional academies: *Berufsakademien* and *Fachschulen*. In these professional academies academic training is combined with practical professional training in companies or in training establishments (Kaulisch and Huisman, 2007; Eurydice, 2008). Since 2003 a few *Berufsakademien* were integrated with *Fachhochschulen* (Eurydice, 2009).

Higher education qualifications

Qualifications in higher education vary according to the length and type of course followed (Eurydice, 2009). Studies at a university or equivalent institution are concluded by an academic examination (in the past: Diplom examination, Magister examination), a state examination, an ecclesiastical examination (in theology) or an artistic examination. Since 1998 Germany has adapted its higher education system to the Bachelor's and Master's degrees structure but in a concurrent model in which old structured programmes remained valid as well. Only since 2006/07 all traditional degree programmes are gradually closed down and replaced by bachelor-master tracks.

Studies at Fachhochschulen also lead to Bachelor's and Master's degrees (in the past: the Diplom (FH) degree). Students who successfully complete their examination at *Berufsakademien* may be awarded a Bachelor's degree (in the past: the Diplom (BA) degree). It has been a very conscious decision to have similar bachelor and master degrees and titles awarded at *Fachhochschulen* as are awarded at universities (Witte, 2006).

Universitäten (universities) and equivalent institutions of higher education hold the right to award doctorates. Fachhochschule graduates holding a Master's degree or a qualified Diplom (FH) degree may be admitted for doctoral studies at a university with specified additional requirements.

Bachelor's degrees obtained at *Berufsakademien* are not higher education degrees but tertiary education qualifications providing qualification for a profession. Two- to three-years programmes at schools in the health sector lead to vocational qualifications in a number of occupations in the health sector.

Statistics on the German higher education system

As said, the Bachelor's and Master's programmes have been gradually introduced in German higher education next to the old (*Diplom*) programmes in which it was still possible to enroll until 2006/07. Statistics show that in 2009 the majority of study programmes in Germany follow the bachelor-master structure.

Table 5.1: Development in the implementation of bachelor and master study programmes

<i>Summer semester</i>	<i>Bachelor</i>	<i>Masters</i>	<i>Ba + Ma</i>	<i>All (incl old)</i>
2000	202	104	306	n.a
2001	382	217	599	n.a
2002	544	367	911	n.a
2003	747	886	1633	n.a
2004	951	1173	2124	11183
2005	1453	1481	2934	11286
2006	2317	1777	4094	11283
2007	3377	2283	5660	11803
2008	4541	3065	7606	11369
2009	5309	4201	9510	12515

Source: HRK, 2009.

Table 5.1 shows that gradually the old programmes are being replaced by bachelor and master studies. More specifically, table 5.2 provides an overview of the types of programmes offered at different types of higher education institutions.

Table 5.2: Types of programmes offered at different types of higher education institutions (2009)

<i>Type of institution</i>	<i>Total</i>	<i>Old</i>	<i>Special</i>	<i>Bachelor</i>	<i>Master</i>	<i>Ba as %</i>	<i>Ma as %</i>
University	8232	418	1885	3077	2852	0,37	0,35
Colleges of the art	751	468	53	124	106	0,17	0,14
Fachhochschulen (UAS)	3532	181	0	2108	1243	0,60	0,35

Note: Special programmes include specific state and church qualifications

Source: HRK, 2009.

Table 5.2 indicates that in 2009 in universities and Universities of Applied Sciences (Fachhochschulen, UAS) are predominantly following the Bachelor - Master structure. It is interesting to see that in the UAS (which is often compared to the Dutch HBO's) the number of master programmes offered is substantial.

Further details on the master programmes show that of the university and UAS master programmes about 10% are directed to students who come from not-related bachelor programmes. Furthermore, another 10% of the master programmes are so-called further education programmes for students with labour market experience. In the UAS this proportion is 18% (HRK, 2009). This means that the master programmes in Germany offer quite some space for students to get further professional orientation.

In 2007/08 there were about 1.94 million students in German higher education. Of these only 530,000 students were enrolled in bachelor programmes and 70,600 in master programmes (HRK, 2009). However, since 2006/07 the number of students first enrolling in bachelor and master programmes has increased explosively as many traditional degree programmes were no longer open for new entrants. In universities about 50% of the students started in a bachelor or master programme in 2007, in the UAS this was about 83% (HRK, 2009).

Also the number of graduates with a bachelor or master degree has gradually increased, from 500 in 2000 (representing only 0,3% of the total number of German graduates, to 37.600 in 2006, representing almost 15% of all graduates.

Projections on the future number of secondary school graduates enrolling in higher education show rapidly increasing demand of higher education while the bachelor and master programmes are perceived to be more teaching-intensive as the traditional *Diplom*-programmes. To cope with this increased tension on the 'market' for study places, the federal government and the Länder agreed on a Hochschulpact 2020 (Higher Education Pact 2020). One of the measures agreed in this Pact is to increase the number of study places by 90,000 in 2010. The federal government and the Länder will spend about €1 billion on these new study places. The federal government funds half of the additional costs. The funding started from autumn 2007 on (Kaulisch and Huisman, 2007).

5.2 Development of the Universities of Applied Science sector

In Germany the Universities of Applied Sciences (UAS) are called *Fachhochschulen*. There are 167 Fachhochschulen (FHs) in Germany (DAAD, 2009). Their official English translation is "University of Applied Sciences". This name mirrors exactly what Fachhochschulen are actually all about: they stand for practical relevance and focus with strong ties to applications in the world of work. Those who study at a Fachhochschule have a better preparation than traditional university students for positions and assignments in specific industries and work fields. So the FHs above all offer degree programmes in the field of technology, business and management, social studies, media and design. On the other hand, those interested in studying for a degree in medicine, in education (school teachers) or law will not be able to study these fields at a *Fachhochschule*.

The strong applied or practical focus of the UAS is also reflected in the profile of their lecturers and professors. Many of them have already gained career experience in industry, business or social work. This know-how qualifies and enables them to provide students with insights into the processes, working methods and expectations of companies or social and cultural institutions. Compulsory study internships (as a rule students are required to complete one or two practical semesters) round off the transfer of this knowledge and practice to students.

Admission to Fachhochschulen

The prerequisite for admission to a *Fachhochschule* (UAS) is either the *Allgemeine Hochschulreife* (general higher education entrance qualification) or *Fachgebundene Hochschulreife* (higher education entrance qualification restricted to a specified field of study) on the one hand or the *Fachhochschulreife* on the other, which as a rule is acquired after 12 ascending school years grades at a *Fachoberschule* (Eurydice, 2008). The *Allgemeine Hochschulreife* or the *Fachgebundene Hochschulreife* can be obtained after 12 or 13 ascending school years and completion of the *gymnasiale Oberstufe*.

The *Fachhochschulreife* can also be obtained by taking additional classes at vocational schools, e.g. *Berufsfachschulen* and *Fachschulen*. In addition, previous related practical experience is required for admission to certain courses of study. In 2004, more than 50% of those entering *Fachhochschulen* have a higher education entrance qualification which also entitles them to study at university (Eurydice, 2008). In all *Länder* there are additional ways to obtain admission for vocationally qualified applicants who lack a higher education entrance qualification. Graduates of the master craftsman's qualifying examination and equivalent vocational examinations, as well as graduates from *Fachschulen* and *Fachakademien* are generally admitted to study a specific subject at the *Fachhochschule*. In addition to their vocational qualifications, these applicants must prove they have the requisite knowledge and skills for higher education by undergoing, as a rule, an admission procedure (e.g. by provisionally enrolling for a probationary period of study) or an examination procedure at the *Fachhochschule* (e.g. assessment or aptitude test, interview). In some *Länder*, vocationally qualified candidates do not have to sit for an examination allowing them to pursue a course of study. Based on their previous vocational qualifications, applicants are usually granted a limited right to embark on higher education only in a specified course of study. In certain subjects (e.g. design) proof of artistic ability is required in addition to a higher education entrance qualification.

All of these requirements prove that the UAS are professionally oriented higher education institutions.

5.3 Professional Masters

5.3.1 History of professional masters

With the introduction of the Bologna bachelor-master structure, German UAS (FH's) were also allowed to offer master programmes. In 2009, UAS offer 1243 Master programmes (HRK, 2009). The master programmes in name are equal to university masters, as long as they are accredited. The only serious distinction is between "practice-oriented" and "research-oriented" masters, which both can be offered at universities and at *Fachhochschulen*.

However, looking at the educational structure, students can use courses in bachelor's and master's degrees to widen their career opportunities: whereas a bachelor forms a foundation degree, masters are regarded as an extension to that. The master specifies one's knowledge or extends it in an interdisciplinary way. Generally most of the students begin to work after having received the bachelor degree. Only those who wish to specify their career or to become a scientist continue their studies until the master's degree.

Universities of Applied Sciences offer courses which are application-orientated. The offer of courses is - as at a normal university - widely ranged and classified into (Eurydice, 2008):

- Engineering sciences
- Economics/economic law
- Social work
- Public administration, administration of justice
- Information technology, computer science
- Design
- Information and communication studies
- Nursing and management in the public health system

Only the humanities are reserved for universities. Based on scientific knowledge the intention of courses at a UAS is mainly to give a practical reference. Nevertheless, UAS can provide master programmes with a "more practice-oriented" and "more research-oriented" profile. The research-oriented profile is particularly chosen by students who aim to continue their studies in a university doctorate programme.

The practice-oriented profile of studies is achieved by the modes of learning in a programme, which in general is tightly structured. It also includes one or two prescribed internships or other work placements, which have the intention to give you first impressions of the professional world from the beginning of your studies on. In addition, during lectures students are supposed to get practical exercises, seminars and study trips in small groups (Eurydice, 2008). Many UAS also have technological transfer centres, which tighten the bond to the economy. All of this means that also the master's taught at UAS have an applied or professional nature.

Another differentiation in masters programmes concerns the consecutive versus non-consecutive masters. The consecutive masters logically follow upon a bachelor whereas the non-consecutive masters are designed for students who come from different subject fields.

The traditional *Diplom*-programmes at UAS usually took eight semesters (4 years) of fulltime study, mostly including one or two *Praxissemestes* (internships or other work experience). Bachelor programmes generally take 6 or 7 semesters (3 to 3,5 years) with an additional 3 to 4 four semesters for Master programmes at a UAS. In the master domain, universities (of applied science) may also offer graduate masters (*Weiterbildungsmasters*) which are basically meant for people who already work and want to deepen their knowledge in a specific field.

5.3.2 Certification

Fachhochschulen award the *Diplomgrad*, the Bachelor's degree and the Master's degree upon completion of a course of study (Eurydice, 2008). The *Diplomgrad* indicates the field of study and that it was awarded by a *Fachhochschule*: e.g. Diplomingenieur (*Fachhochschule*) – i.e. Diplom in engineering awarded by a *Fachhochschule* – abbreviated Dipl.-Ing. (FH). On the basis of agreements with a foreign institution of higher education, some *Fachhochschulen* confer a foreign degree (double degree) or a joint degree in addition to the German *Diplom*.

Since the amendment to the Framework Act for Higher Education (Hochschulrahmengesetz) of 1998, higher education institutions are entitled to award Bachelor's or Master's degrees. The new graduation system introduced is to replace the customary graduation system until 2010. As at universities, Bachelor's study courses at *Fachhochschulen* provide the academic foundation, methodological skills and qualifications related to the professional field and lead to the Bachelor's degree. Master's study courses are differentiated by the profile types "more practice-oriented" and "more research-oriented". They require a first degree qualifying for entry into a profession and lead to the Master's degree. In designating Master's degrees, no distinction is made between the profile types "more practice-oriented" and "more research-oriented". The Bachelor's degree generally provides the same rights as *Diplom* qualifications acquired at a *Fachhochschule*. The Master's degree provides the same rights as *Diplom* and Magister qualifications of universities and equivalent higher education institutions. The following designations are used for Bachelor's and consecutive Master's degrees at *Fachhochschulen*:

- Bachelor of Arts (B.A.)
- Bachelor of Science (B.Sc.)
- Bachelor of Engineering (B.Eng.)
- Bachelor of Laws (LL.B.)
- Master of Arts (M.A.)
- Master of Science (M.Sc.)
- Master of Engineering (M.Eng.)
- Master of Laws (LL.M.)

These titles are exactly similar to what is used in the university sector except that there students in teacher training programmes are awarded the Bachelor/Master of Education title (B.Ed./M.Ed.). This situation, however, was not uncontested. In the 2001-2003 period

there were huge debates on the sort of titles and rights connected to the master title. The *Akkreditierungsrat* seriously recommended that bachelor- and master graduates of “practice-oriented” programmes should have the extension of the professional field in which they graduated. After long and heavy debates this idea was abandoned in 2003 after an advice of the *Wissenschaftsrat* (Witte, 2006). Nevertheless, many actors in the higher education field were reluctant to give up on the internationally well established traditional degree programmes and (*Diplom*) degrees.

The Fachhochschulen should add a diploma supplement to the leaving certificate of the Diplom, Magister, Bachelor and Master programmes. The diploma supplement, usually in English, describes the studied courses, the progress of the studies and the performance of the graduate. As a rule, degree holders are to receive the Diploma Supplement at no extra charge.

As universities are allowed to select their students for master programmes, it often is difficult for UAS bachelors to enter a university master programme. Universities do not yet consider the UAS bachelors to be at equal level as university bachelors.

In addition to consecutive Master's study courses, there are other special graduate study courses which may be taken after the completion of a first degree. These special graduate study courses of two to four semesters' duration culminate in the award of a second *Diplom* degree, the Master's degree, or proof of academic achievement (certificate).

It is not possible to obtain a doctoral degree from a *Fachhochschule*, given that only universities and equivalent institutions of higher education are entitled to award doctorates. But both master graduates from universities and from *Fachhochschulen* are entitled to enter doctoral studies at a university.

5.3.3 Funding of master programmes

Universities and *Fachhochschulen* are funded in the same ways concerning their teaching funding. This also means that master programmes at universities and *Fachhochschulen* are treated equally in financial terms. However, with the introduction of the Bologna bachelor-master structure, the nominal duration of studies to get to the master degree has increased at universities from 4 or 4.5 years to 5 years and at *Fachhochschulen* from 4 years to 5 years without any additional funding. This meant that students were suffering from many savings made at the HEIs at the expense of facilities offered to students and (non) availability of teachers.

Although funding issues are not a major problem concerning the different orientations of master programmes, the starting positions of universities and *Fachhochschulen* are different. Because universities have a substantial number of staff positions assigned to their research function and Fachhochschulen do get granted such research positions, it is way more easy for universities to design and offer research oriented master programmes. This imbalance is further stimulated by the distribution of DFG research funds which is primarily done on the basis of research status and prestige. The FH's hardly manage to attract such funds and the special DFG funds for research at the FH's are relatively limited.

5.3.4 Relationship to the professional field

Though the practice oriented masters have a stronger professional orientation, they are not always designed in cooperation with the professional field. Such masters that are not directly having an academic focus can be developed in all disciplinary areas and in practice they are often offered also in areas where there are no regulated professions.

However, *Fachhochschulen* traditionally have close relationships at various levels with industry and other professional organizations. For example, all *Fachhochschulprofessoren* should have at least 3-5 years professional experience in other jobs. This criterion is also used in the accreditation procedures of practice oriented master programmes.

The professional ties are stronger in the *Weiterbildungsmasters*, where students are required to have a few years of work experience and professional networks are important for the recruitment of students.

Based on the differences in research intensiveness (previous subsection) and the natural professional ties of the *Fachhochschulen* the large majority of masters at the universities are research-oriented (aiming to prepare for doctoral studies) and most FH-masters are practice oriented. No data are available on relative proportions, but experts point at this phenomenon.

5.3.5 Entrance into the labour market

All master programmes basically entitle graduates to enter the labour market. There is no formal distinction between university and *Fachhochschul-Master* graduates. However, in practice there are differences as master graduates from the *Fachhochschulen* often are lower paid, at least receive lower starting salaries and have to show good performance before they are treated equally to the university masters.

Another distinction is between the practice-oriented versus research oriented masters. Both require students to write a serious master thesis, but in the practice oriented masters students often also integrate an internship period and their thesis often is more practice oriented and in cooperation with business. Many of the graduates get in this way to their first jobs.

A major distinction has been between university- and FH-graduates as the latter could not enter the higher civil servant status and jobs. This issue has only been resolved in 2008 (seen next section). However, currently the bachelors from the *Fachhochschulen* cannot enter this higher civil servant status, which makes many of them to use *Weiterbildungsmasters* to upgrade their career perspectives after a few years of work experience.

5.4 Policy discussions regarding Professional Masters

During the last decade's discussions on the potential differences to be given to the titles for more practice-oriented masters there was a strong and long debate on the types of jobs that could be entered with different masters. For a long time, only university graduates could enter the highest civil servant positions, whereas *Fachhochschul*-graduates only could enter the high-civil servant positions. It took until 2007 when finally the Kultusministerkonferenz (KMK) decided that from 1-1-2008 onwards also the FH-masters could enter the *höheren Dienst*.¹

After the initial discussions on titles to be awarded to master programmes from universities, Fachhochschulen, practice oriented masters and research oriented masters were solved there are no major voices that raise the issue again. Equal titles appear to be accepted by the various stakeholders within the higher education field as well as at the labour market. It probably helped that the universities and the *Fachhochschulen* are both represented by one umbrella organization, the *Hochschulrektorenkonferenz*.

An issue that did and does raise tensions is that the *Fachhochschulen* call themselves Universities of Applied Sciences. In German law only universities can call themselves *Universität* and *Fachhochschulen* are forbidden to do so.

An issue of debate is the so-called *Weiterbildungsmasters*, which are further education master programmes that are normally offered in part-time and require at least 2 years of work experience. These are privately paid and in the German context regarded expensive and their content is strongly practice oriented, way more than the practice oriented regular master programmes. There, however, is a strong demand for lifelong learning masters which should be practice oriented. In that sense the *Weiterbildungsmasters* fulfill a need and a policy desire, but their academic standing is sometimes doubted, even though they have to be accredited.

An emerging issue is the driving forces behind an upgrading of the *Berufsakademien* which in some *Länder* (e.g. Baden-Württemberg) are recognized as *Fachhochschulen*. The FH's want to stop this process like the universities for a long time tried to stop the FH's to be upgraded.

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- Dr. Johanna Witte, Bayerisches Staatsinstitut für Hochschulforschung und Hochschulplanung, München.
- Prof. Dr. Lothar Zechlin, Chair of the Zentrum für Hochschul- und Qualitätsentwicklung (ZfH) and at the University Duisburg-Essen.

6 Sweden

6.1 System characteristics

6.1.1 Structure of the system

Since the higher education reforms of 1977 Sweden has a unified single system which integrates five types of institutions:

- universities (*universitet*),
- university colleges (*högskola med vetenskapområde*),
- other colleges (*övriga högskolor*),
- art colleges (*konstnärliga högskolor*) and
- 'other' higher education institutions.

The major part (about 95%) is provided by the 14 state universities, two private universities and 22 state university colleges of which 7 are colleges of fine, applied or performing arts. Chalmers University of Technology, the Stockholm School of Economics and the University College of Jönköping are private institutions as well as a number of smaller institutions that are entitled to award specific degrees. Altogether there are some 50 HE institutions.

Undergraduate education is at equivalent level at universities and university colleges. What differentiates the two types of institutions is mainly that universities provide a broader range of courses and that they have degree awarding powers at all levels (first, second and third cycle). University colleges have degree awarding powers at first cycle and for one-year Masters' programmes (see below on degree structure).

In order to meet growing enrollments, the existing infrastructure continues to expand. New regulations have been implemented recently to further increase the number of institutions offering postgraduate degrees. University colleges, for example, may undergo an assessment and evaluation in order to be upgraded to full university status (i.e. permission to award graduate degrees). In the last few years a few university colleges were upgraded to university status in order to stimulate scientific achievement outside the traditional university sector. In addition, the government may grant certain university colleges a "special status" with the right to engage in particular research areas. On this basis a small number of these colleges have the right to award two-year Masters' degrees and third cycle degrees in these areas. Other university colleges are limited to only a few, professional programs like teaching, education, and business administration.

The 'other' higher education institutions (20) are mainly single subject institutions and their size, in terms of enrolment is limited. In addition there are a few independent institutions with degree awarding powers (e.g. in Psychotherapy).

6.1.2 History and mission

Sweden's higher education system underwent considerable reform with the Higher Education Act of 1977. The most visible change involved assimilating the four distinct sectors into a unified single system, the *högskola*. As a result, all higher education institutions were from that time on administered centrally by the Ministry of Education and Science. All aspects of curriculum planning would now be overseen by one central body, the National Swedish Board of Universities and Colleges (UHÄ). Through these reforms the government hoped to create more equality between different kinds of education and to initiate an era of greater co-operation between the sectors. In addition, it anticipated that a unified system would give students from diverse social backgrounds equal access to higher education. Another significant change in 1977 was to incorporate a strong vocational slant into most undergraduate programs in order to provide students with the practical skills necessary for entry into the workforce.

Several institutions did remain outside the Ministry of Education and Science's control. A quarter of the smaller institutes, many related to the health sciences, continued to remain under regional or local control. Similarly, the institutes for forestry, veterinary medicine, and agriculture remained under the Ministry of Agriculture and consolidated into the Swedish University of Agricultural Sciences.

The Higher Education Act of 1993 laid the basis for a system of autonomous higher education institutions each having considerable oversight over their own resources, organization and management. At the outset, it abolished the UHÄ and established the National Agency for Higher Education (Högskoleverket). This agency has jurisdiction over all higher education institutions in terms of evaluation, accreditation, and issues related to quality and pedagogy. It is also responsible for evaluating aspects of foreign education and for monitoring the recognition of their education programmes. Universities gained new freedom to design their own programs. The law replaced the system of national study programs by a new degree system measured in study points. Institutions and not government would determine the organization and range of their programme offerings while at the same time allowing students greater programme choice.

6.1.3 Degree structure

Sweden implemented the new degree structure in compliance with the Bologna process in 2007 and this structure applies to all fields of study. The credit system, also implemented in 2007, is compatible with the European Credit Transfer System. The degree structure changed from a two-cycle to a three-cycle system in which different types of qualifications are distinguished.

First-cycle

- Diploma (högskoleexamen): Two years of study (120 ECTS).
- Diplomas are offered by all universities, university colleges and colleges of health sciences. Each institution determines the contents of a programme.
- Bachelor's degree (kandidatexamen): Three years of study (180 ECTS).
- This degree is offered by all universities and university colleges, except for the colleges of arts which offer their own diploma courses.
- Professional qualifications: there are 27 different professional degrees, for example BA in Nursing (180 ECTS), BA in Engineering (180 ECTS), University Diploma in Dental Hygiene (120 ECTS).

Second cycle

- Master's degree (magisterexamen): one year of study. This degree is offered by universities and some university colleges. In Sweden this is regarded as an undergraduate degree.
- New Master's degree ('masterexamen') two years of study. This corresponds to what internationally is seen as a Master's degree.
- The programmes leading to professional qualifications vary in length from 2 – 5.5 years. There are 20 different professional degrees, for example Degree of Master of Architecture (300 Credits), graduate Diploma in Midwifery (90 credits), Degree of MSc in Medicine (330 EC).

Third cycle

Post-graduate education consists of two types:

- Licentiate: approximately two years in length (coursework + research resulting in a thesis. Degree holders may continue their studies through a doctoral program.
- Doctorate: four years in principle, (one-third consist of coursework and the remainder for research resulting in a dissertation).

Long-study programmes of 4-6 years are maintained for professional degrees in e.g. medicine, pharmaceutical studies, psychology, dentistry, architecture, civil engineering, and law. Examples of degrees that are normally shorter than 3 years (less than 180 ECTS) are dental hygienist and a number of shorter general, professional or artistic programmes.

6.2 Quantitative characteristics of the system

In 2007/2008 the number of university entrants at higher education institutions totaled just over 87,000, the highest figure ever. The enrolment (in FTEs) totaled almost 280,000. Of these FTEs 77 per cent were in first-cycle programmes and 15 per cent in the second cycle.

There were nearly twice as many FTEs in programmes that led to a professional qualification than those programmes leading to general qualifications, namely 43% and 24% respectively. The other 33% concern so-called free-standing courses (not defined in terms of either general or professional qualifications).

The following overview of degrees awarded gives further insight in the distribution of the type of qualifications on the three main cycles.

Table 6.1 Degrees awarded in the academic year 2007/2008 per qualification

	Bachelor degree	Master degree (1-2 year)	Other	Total
General qualifications	13,696	11,815		26,681
Professional qualifications	19,319	10,240	1,405 (other qualification)	30,964
Postgraduate qualification			764 (licentiate) 2890 (PhD)	3,654

Source: Höskoleverket, Universitet&Högskolor årsrapport 2009.

The largest single professional qualification is in teaching (9,700 awarded), followed by Masters degrees in engineering (3,950 awarded), and nursing (3,900 awarded).

Regarding the qualifications of the teaching and research staff, the percentages of those with PhD is for universities around 57% – 70% and for university colleges between 34%-44% (Swedish Universities & University Colleges, 2009).

6.3 Professional Masters

6.3.1 History and current situation

In Swedish higher education the term ‘professional master’ as such is not applicable and in the interviews the respondents were consistent in this respect. The difference between one-year (Magister) and two-year Master is a question of degree, not principally a difference between more academic or more vocational. One-year masters are similar, irrespective whether offered by a university or a university college. This is not to say that some programmes can be more vocationally-oriented – as becomes evident from evaluation reports of some university programmes – but they are not denoted as such. Two-year master programmes (corresponding to the Bologna process) are research-oriented and consequently are seen as closely connected to education in the third cycle.

As pointed out before, there are professional degrees (*yrkesexamen*), awarded upon completion of programs of varying length (2-5.5 years) that lead to work in specific professions including, but not limited to: medicine, dentistry, teacher training, and various engineering programs.

Furthermore, current legislation in the Higher Education Ordinance contains a system of qualifications that stipulates the qualifications awarded in the arts, sciences, social sciences and artistic fields, as well as vocational and professional qualifications at first and second cycle. This ordinance has been changed in accordance with the agreements that have been reached within the framework of the Bologna Process including the European Qualification framework (QF-EHEA). The changes apply to study programmes and qualifications taken after 1 July 2007.

The National Qualifications Framework for Higher Education in Sweden contains further details of the different qualifications that are placed within the first, second or third cycle with the following categories of qualifications:

- Qualifications in the arts, social sciences and sciences
- Qualifications in artistic fields (fine, applied and performing arts)
- Vocational or professional qualifications

Vocational or professional qualifications are normally awarded within the regulated professions. Concentrating on the second cycle (Master level), altogether 21 qualifications have been distinguished, and the main title of a qualification is stipulated in the HE Ordinance. The following presents a summary of these qualifications:

- Graduate diploma in Specialist Nursing, Midwifery, Psychotherapy,
- Postgraduate Diploma in Special Education Needs, Special Needs Teaching, Master of Education,
- Master of Science in Business and Economics, in Speech and Language Pathology,
- Master of Laws,
- Master of Science in Agriculture, Architecture, Engineering, Forestry, Horticulture, Landscape Architecture,
- Master of Science in Dental Surgery, Medical Physics, Pharmacy, Psychology, Medicine, Veterinary Medicine.

The programmes leading to these diplomas can be provided by universities or by university colleges. There is principally no institutional demarcation between vocational or professional and general or academic qualifications.

In the 2008 Budget Bill the government allocated SEK 150 Mln to education at postgraduate level for professional teachers in the school system. Part of this sum is used to host HE institutions for doctoral schools so that those accepted in the programmes are able to continue their education until they are awarded a licentiate degree.

6.3.2 Content and organization

Graduate diplomas in Midwifery, Psychotherapy, Specialist Nursing, Special Education Needs/Training require the successful completion of a first cycle qualification or the equivalent. The Master programme in these areas is mostly 1.5 years, 90 HE credits. Teacher education programmes differ from other professional programmes because they are offered as first cycle or second cycle programmes, depending on the length and content of the programmes.

The HE Ordinance specifies the descriptors for vocational or professional qualifications with particular requirements for each qualification. Generally it specifies: the scope (credits) - objectives (in terms of knowledge and skills required to work independently as a professional) - knowledge and understanding - skills and abilities - judgment and approach - and a description of further specializations.

Regarding the transition to and from the master degree, the Swedish system aims to maintain as much flexibility as possible. Basic idea is that there should not be dead ends and students in theory would always be enabled to continue to advanced levels.

The general rule is that applicants are required to have completed a programme in the same field at first cycle or have the prerequisites to successfully complete the course on the basis of prior Swedish qualifications, qualifications from abroad, professional experience or other merits.

In addition, universities and university colleges may set their own specific entry requirements. However, as the NQFHE states, these requirements must be considered as absolutely necessary for successful completion of a course or study programme. These may include:

- knowledge acquired from one or more HE courses;
- other requirements vital for the study programme or of relevance for the profession for which the programme is a preparation (for example working experience for nursing programmes).

Graduates from the one-year Master (Magister) can be admitted to doctoral programmes, but the university has the right to require a two-year Master degree, and in practice they do so.

Besides the general degrees of Magister/Master there is a set of professional degrees, but these are not a continuation from the first level in the sense that they presuppose that a student has obtained a bachelor degree. They are 'direct' even if these are on a Master's level. For example, Master in Business Administration has 240 ECTS + 30 for independent work; a degree in civil engineering contains 300 ECTS + 30 for independent work. There are plans to develop these degrees more in accordance with the Bologna model.

Students that have been awarded a bachelor can continue to the advanced (master) level. This possibility is also open for the students that have obtained a professional degree at the first level. They can continue in a study field that is related to their professional education, for example mathematics for engineers etc. However, it is at present not possible to pursue their professional education at the advanced level. There are, however, plans to make this possible for engineers into the civil engineering programme, but this has not been realized yet.

6.3.3 Relationship with the labour market

In the Swedish tradition there is a close monitoring of supply of and demand for HE graduates. Each year the National Agency for Higher Education produces an assessment of the future balance in the labour market for about thirty different groups of graduates. In

case of surplus or shortage of graduates changes are made in the number of places offered in different programmes. A current theme is the shortage of graduates from first-cycle programmes in engineering and here the numbers need to be raised. There are also shortages of teachers in early years education, in extended school programmes, and in the sector of special education needs.

There is no evidence that from the labour market a distinction has been made between one-year (magister) and two-year master degrees. Both types of graduates are treated quite similarly on the labour market in terms of competency requirements.

There is a growing dialogue between employers and universities and colleges about the content and organization of their courses. One rather new development is the upgrading of higher vocational education. Courses identified as “post secondary education”, have been organized through close cooperation with upper-secondary, higher education, adult education, and private companies. The purpose is to provide a vocational track where one-third of the time would be spent in the work place “in the advanced application of theoretical knowledge”. These courses should be placed in the level 5-6 of the qualification framework, but the idea of involving employers on the advanced levels in higher education may be addressed as well.

6.3.4 Governance

Governed by the general regulations in the legislative framework, universities and university colleges are free to define their own goals and to determine how they organise their programmes. A university college must apply to Högskoleverket (Swedish National Agency for Higher Education) for the entitlement to award two-year Masters' degrees. Since this is more connected with research, the teacher competences and proper infrastructure of the institution concerned are taken into consideration. All higher education institutions (HEIs) must apply to this agency for the entitlement to award professional or vocational degrees.

Independent and self-governing HEIs must apply to the agency for the entitlement to award all first and second cycle degrees. HE institutions receive funding for first and second cycle education whereby the same principles apply. Funding depends on the number of students and the graduation rates on an annual basis. There is a ceiling amount (maximum funding) and funds vary according to fields of study (expensive and less expensive ones). Sweden does not charge tuition fees for higher education programmes, neither for general nor for professional/ vocational programmes as discussed in this report.

6.3.5 Policy discussions

In Sweden the development of professional programmes at the Master level is not a big issue as it is in some other countries. According to our informants there are no actual policies on this level foreseen in the near future.

What is an actual policy development in Sweden is the upgrading of higher vocational education. The establishment of the National Agency for Higher Vocational Education in 2009 aims to develop and oversee publicly funded higher vocational education courses. This is seen as a modern approach where theoretical learning is integrated and blended with vocational practice at the workplace. This may stimulate mature students who are already in employment to continue their education at advanced levels. However, there is no indication that there is a chance that this will be extending on the professional Master level.

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7 Switzerland

7.1 System characteristics

7.1.1 Structure of the system

Switzerland is a federal state where competences are shared between the Confederation and the (23) cantons. According to the subsidiary principle, education in general is a strict competence domain of the cantons and, thus, until the secondary level, federal competences are extremely limited. However, concerning higher education, the historical development has led to a complex division of competences, which largely impairs the coordination of the system.

There are three types of institutions:

- 10 universities (cantonal) and 2 federal institutes of technology (Zürich and Lausanne)
- 9 Fachhochschulen or Universities of Applied Sciences (UAS), two of them on a private basis
- 14 universities of teacher education
- 5 other university-level institutions supported by the Confederation

The 10 universities are under cantonal authority and mainly funded by the cantons and to a lower degree by the Confederation. The two federal institutes of technology are funded and regulated at the federal level. The UAS are funded by the Confederation and run by the cantons. The federal law on UAS (Bundesgesetz über die Fachhochschulen) regulates the assembly of several institutions into seven regional UAS which offer training in different areas. Each UAS corresponds to a particular region and in fact consolidates a number of previously independent partner institutions.

The universities of teacher education are regulated and funded by the cantons. Twelve of them are independent establishments while two universities of teacher education form part of universities of applied sciences. In Zürich, training of teachers for secondary level II is provided by an institute which is managed jointly by the university, the Federal Institute of Technology and the university of teacher education.

The new constitutional articles governing education (2005/06) prescribe that the Confederation and the cantons should coordinate their responsibilities regarding educational issues. The Swiss Council of UAS (Fachhochschulrat) of the Swiss Conference of the Cantonal Educational Minister (EDK) is the strategic and political body for all matters concerning co-operation between cantons. This body coordinates the development

plan throughout Switzerland and works together with the Confederation. A fundamental difference with universities is that for UAS the Confederation has the right to edict common rules and thus has a more direct power of intervention. A second difference is that historically vocational education is considered as a part of economic policy and thus it is managed at the federal level by the Ministry of Economic Affairs (while general education and research are the resort of the Ministry of Internal Affairs). The newly established Federal Office of Professional Education and Technology (Bundesamt für Berufsbildung und Technologie - BBT) is currently the main supervising body of the UAS sector.

The Swiss government has proposed to establish in 2012 a common framework for the whole Swiss higher education in which the university act and the UAS act will be integrated. The new act will create a joint political body between Confederation and cantons to steer the whole higher education system and the two ministries for universities and UAS will likely be merged in a single ministry.

The Conference of the UAS in Switzerland (CUAS) (= Konferenz der Fachhochschulen – KFH) represents the interests of the Rectors of the UAS when dealing with the Confederation, the cantons and the other institutions in charge of education and research policy. CUAS strives to attain a uniform HE policy and supports educational committees on the regional and national level.

History and mission of UAS

Historically, there is a large vocational education sector both at the secondary and at the tertiary level. Over the years, vocational tertiary-level schools expanded, mostly offering rather short programmes. Gradually an upgrading took place by a merging operation of these individual schools into larger Fachhochschulen (Perellon 2003). The act on UAS dates from 1996 and aims to coordinate the existing tertiary-level schools across Switzerland. UAS provide practice-oriented education, carry out applied research and development, continuing education, services to companies and public bodies, cooperate with education and research institutes in Switzerland and abroad. The foundation of the UAS increased the status of professional education because they provide the opportunity for qualified people to continue their studies at university level. Also defined in the act on UAS is their mission to conduct research which aims at solving problems related to their professional fields. This research mission has to be placed in the context of the Swiss technology policy to promote applied research and development in cooperation with private companies. This research mission was one of the main policy goals behind the creation of the UAS. This is critical since in the Swiss context the existence of a research mandate and of sizeable research activity is considered as necessary for belonging to higher education (Lepori, 2008).

While at the beginning UAS included only a few sectors with a strong focus on technology, in the last ten years they have progressively integrated tertiary vocational schools in domains like social work, health, economics and management, applied arts, and teacher education.

The UAS are legally mandated to handle continuing professional education. They provide various types of advanced-level programmes as well as other courses of continuing professional education.

7.2 Degree structure

Although not an EU member state, Switzerland participates in the Framework Programme of the EU. In the context of the Bologna process the Bachelor- Masters system has been implemented in virtually all programmes of universities and UAS. UAS are free to offer BA degree courses and have also the right to offer a limited number of Masters degree courses. Accreditation is required in order to be eligible for funding by the Confederation. The CUAS advocates a harmonisation of tiered study programmes ('gestufte Studiengänge'). The degree structure is as follows.

Bachelor programmes are three years (6 semesters, 180 ECTS credit points), and include a practically-oriented undergraduate "dissertation" and sometimes a period of practical training. Part-time studies (combined with employment) require a minimum of 4 years to complete. The most common titles are Bachelor of Science (mainly in the technical areas) and Bachelor of Arts. UAS bachelor graduates have access to university masters in the same fields, although usually some extra credits are required before entering a programme.

From 2008 UAS can offer professionally-oriented master degrees in a limited number of domains. They are 1.5 – 2 years (3 – 4 semesters, 90 – 120 ECTS credit points). This lead tot the title Master of Science (e.g. in Engineering) or Master or Arts (e.g. in Design) are mostly common. In addition UAS offer a wide range of federally recognised advanced-level programmes as well as other courses of continuing professional education (MAS – Master of Advanced Studies) to facilitate lifelong learning among graduates. Since they lead to an advanced qualification, these courses are of particular interest to students from abroad. Fulltime study on a Master of Advanced Studies programme lasts a minimum of one year (60 ECTS).

The universities of teacher education award bachelor's or master's degrees for the following domains: pre-primary education, primary education, secondary education, special needs education, speech and language therapy, and psychomotor therapy. Besides this, the universities of teacher education provide masters of advanced studies and are currently working on master study courses as well. The Swiss Federal Institute for Vocational Education and Training is responsible for the training of teachers for this sector. They provide a Master of Science in vocational education and training.

The Bologna implementation has led to a further tuning between university and UAS programme levels. This means that UAS bachelor degree holders will be allowed at some conditions to enter a university master of the same subject domains. Swiss UAS do not provide programs on the doctoral level (PhD), but those with a professional master have access to PhD programmes at universities, again in the same subject domain and at certain conditions.

7.3 Quantitative characteristics of the system

In 2008/09 the total number of students in higher education is 178,700 of which 117,900 enrolled in universities and 60,800 in UAS (Swiss Federal Statistical Office - FSO). The UAS have grown substantially from about 24,000 students in 2000 and the sector comprises now about 30% of the total student numbers in higher education. The majority of UAS students are in Business, Management and Services (30%), followed by engineering and IT (20%). The other subjects are relatively small. Most UAS offer courses in: Engineering and Information Technology, Architecture, Building Engineering and Planning, Chemistry and Life Sciences, Design, Social Work, Health and Business, Management and Services. Only a few UAS offer courses in: Agriculture and Forestry, Applied Psychology, Applied Linguistics, Sports, Hospitality Management, and the Arts.

According to today's forecasts, the number of bachelor diplomas awarded by UAS will exceed in the next years those awarded by universities. Moreover, they evolved from institutions focused on engineering and technology (which made about half of the students in 1998) to generalist institutions covering most of the fields and with 75 per cent of students in non- technical domains. As the professional Masters programmes just started adequate statistics are not yet available and we have to rely on estimates according to the Master plans (see below).

7.3.1 Personnel

From the start of the UAS sector, the personnel structure was a major issue as most of the staff has practically no research experience. The introduction of the UAS professor title (which is not equivalent to the university professor) did not solve the problem adequately, since in most UAS this title has been attributed to most full-time teachers and thus largely lost its specific value. Research competences and activities are concentrated in just a fraction of the UAS professors. In order to deal with this issue a separate category of researchers and assistants have been created who are in charge of performing the largest part of the research.

Apart from technical and administrative staff, the personnel structure at Swiss UAS consists of three main categories: Professors - Other teachers - Assistants and researchers with a total of 7,875 FTE in 2009. There are 3682 professors (almost 50 percent) against 2150 and 2150 for the other two groups respectively (FSO 2009). Data on the educational background of staff is not available on the national level.

7.4 Professional Masters

7.4.1 History of professional masters

The history of professional masters goes back to policy documents from:

- the Fachhochschulrats regarding the Bologna process (2002),

- the KFH concerning consecutive study courses in the UAS sector (2004),
- the KFH recommendations about the profile of Masters (KFH 2005),
- the EFHK (FH Kommission) about criteria for the recognition and accreditation of Masterprogrammes at Swiss FH (2005).
- Master plan Fachhochschulen 2004-2007; 2008-2011

These documents and viewpoints accentuate the general purpose of master programmes, namely to transfer more in-depth, specialized and research-based knowledge to students and to prepare them for professional qualifications on the advanced level. These programmes are seen as significantly contributing to the interdisciplinarity of studies with an applied-scientific character.

The recommendations of the KFH make a clear distinction between bachelor and master level, both leading to a professional qualification. In such a two-tier system both levels should be clearly defined and demarcated from each other. The 'Dublin descriptors' constitute the basis for the formulation of these tiered competence profiles (see also "Best practices zur Konzeption gestufter Studiengänge" der KFH).

In 2006 the Federal Ministry for Education and Technology and the cantonal directors of education (BBT, resp. EDK) agreed to establish Master programmes at UAS. The resulting covenant, the so-called "*Fachhochschulmastervereinbarung*", describes the further regulations and frame conditions of these programmes (see below). The material frame conditions for Master programmes follow the conditions for programmes in general as stated in the FH law and additional regulations have been stated in the covenant.

7.4.2 Organisation of professional master degrees

In the development of Master programmes, the covenant (FHmastervereinbarung) starts from two basic principles:

(1) It is considered a priority that a Bachelor degree in the UAS sector- as a rule – is the end qualification for the labour market. This will be maintained and reinforced. The adaptation to the Bologna-system should not result in a general lengthening of the UAS programme.

(2) It is agreed that due to financial and personnel resources of the UAS sector only a restricted provision of Master programmes can be developed. In any case not-utilised and inefficient provisions should be avoided.

Thus, the BaMa-degree structure is not a consecutive model, since the Bachelor degree stands on its own as a separate (eigenständig) qualification for the labour market. The employability of graduates is very high (96% of the 2005 cohort). Masters programmes are therefore intended for only a small and selected group of students. There are a few exceptions where the Bachelor programme is more or less automatically followed by the Master (such as in Architecture or Music).

On the basis of these principles cantons and the federal government agreed to facilitate a systematic development of master programmes that are of high quality, competitive,

demand-led, practice-oriented as well as internationally compatible. The UAS reinforce their function “as engines for innovation at the cutting edge between practice and science, broaden their cooperation with practice and the other UAS, connect their research activities and ensure the transfer of research results” (KFH 2008). Finally, UAS are obliged to be engaged to arrive at an optimal division of labour with the other UAS and to enhance concentration and excellence by providing programmes on a jointly basis (‘cooperative Masters’).

Access to Master programmes

The covenant regulates the entrance requirements: for the Masters programme a Bachelor diploma is required or an equivalent higher education diploma. Bachelors in the same subject field (Fachbereich) are admitted on the basis of their study results. For those from other subjects the UAS can set special entrance requirements, such as practical experience. Another possibility is a ‘sur-dossier’ admittance. These additional requirements support the principle that a Bachelor degree in UAS is a round off qualification.

The financial paragraph in the covenant anticipates that 25% of UAS students in technology economy, social work and design, and 70% in the health, fine arts, music, theatre, and architecture will be expected to take up a Master study. In the other subject fields this will be about 20%.

Current state

At present 103 Master programmes have been approved (including a few still under consideration), a number that is not expected to increase considerably (see table 8.1).

Table 7.1 Masters programmes in domains and institutions

	Number of professional masters in a domain	Number of UAS offering programmes*
Engineering and IT	11	9
Architecture, Building Engineering and Planning	10	6
Chemistry and Life Sciences	3	3
Business, Management and Services	17	7
Design	5	3
Social work	10	6
Music, theatre and other Arts	38	6
Applied Psychology	2	2
Sports	1	1
Teacher Training	6	2

* Institutions are counted that have at least one master in a particular subject field and not counted more when they have more masters in the same field. This indicates the dispersion of programmes at institutions across the country.

7.4.3 *The content and format of professional master degrees*

The study duration of Master programmes is 1-1.5 years of study (3 – 4 semesters) and have as a standard 90 ECTS. This to avoid that UAS will develop longer and more substantive programmes and consequently extend the total study duration. Part-time study is also possible and can last up to three years as a maximum. The first two semesters involve the basics (theory and specialism) and the last semester is used for the Master thesis. In some subjects practical activities are included. In view of the international recognition of diplomas there are exceptions till a maximum of 120 ECTS. For example, in 2005 the EVD approved programmes in Architecture with 120 ECTS in order to assure recognition on the level of the EU member states.

Part of the framework conditions stem from the collaborative work between the federal and cantonal governments, particularly the recommendations in the Masterplan 2004-2007 on course provision and focus as well as in the Masterplan 2008-2011 regarding the qualitative and quantitative criteria for Master programmes.

Regarding the positioning of the professional master, it is important to stress that UAS predominantly are involved in applied research. Although some overlap between UAS and universities cannot be excluded, UAS should ground their masters as 'equal, but different'. Professional Master programmes have a professional and academic qualification and each of them have their own competence profiles. This profile is field-specific, and competencies such as application and transfer, and problems from professional practice are transferred through scientific knowledge and methods.

7.4.4 *Relationship with the labour market*

A fundamental principle is that Master programmes should respond to a clear labour market demand and employers are commonly involvement in the early stages of the already involved in the process of recognition of programmes. For some domains expert studies have been undertaken to assess the need and the profile of a master study from the perspective of the labour market. Some studies indeed show that in some domains there is a need for a limited number of masters programmes that offer more specialisation and in-depth study. See for example for the health sector Bedarfklärung FH-Masterstudiengänge Fachbereich Gesundheit (2008). From the side of the employers most often it was commented generally that

- a quantitative need for the majority of interviewees is difficult to predict. The question comes too early.
- employers have too little experience with the new Bachelor-Master structure. The new degree structure is not yet clearly positioned on the labour market irrespective of a professional master.

Another aspect is the criterion of embedding masters in the research profile of the institution. The requirement of a research main focus of at least national significance (FHvereinbarung) implies that for the subject field of a Master programme the UAS has to show that it has acquired research competence of at least national significance as well as excellent, sustainable research activities that are interconnected with the world of work and

other institutions. They must display a strategic research focus, sufficient research experience and finished projects and have a staff team that besides the teaching has research competence in the main research area. The research competence of at least national significance presupposes that for the research at least 1 Million CHF third steams funds are available.

7.4.5 Governance

Whereas at present there are no restrictions to steer course provisions on the bachelor level, the situation regarding the masters programmes is quite different and a coordinated steering is seen as necessary. This refers to subject specific considerations, such as the contribution to education and research centers in the Swiss UAS landscape, labour market needs, and the available resources. Contrary to university master programmes, the professional masters at UAS need to be approved by the Swiss Parliament. Every new master programme requires a temporary approval. This involves a course description, study scope, aims and profile of the programme, admission criteria, integration in the strategy of the institution, and connection with applied research and development, personnel and material infrastructure, and financing.

These requirements are the same for public and private institutions. In addition, the public UAS have to meet the following criteria:

- a minimum number of students (at present a minimum of 30 students per year,
- to demonstrate an optimal division of tasks and cooperation with other UAS and universities (for efficiency reasons).
- To fulfil the recommendations from federal and cantonal authorities regarding coordination and focus on the Swiss level as a whole.

The private institutions are exempted from these three conditions.

Funding

Educational funding is calculated on the basis of the number of students and of standard costs defined nationally, largely on the basis of the average cost of the different institutions. The costs are agreed between the Confederation and the cantons. The Confederation finances about 22% of the standard costs, and the cantons 58%. 20% comes from third parties including tuition fees which for universities and UAS are on a similar level. Professional masters will be funded according to the same rules as bachelors as part of the overall budget planning.

7.5 Policy discussions

With the temporary regulation, the federal and cantonal governments express that at the end of 2011 the possible new regulations in the context of the new higher education landscape will be given a place. Until that date the covenant supports and enhances the establishment of qualitatively high-level and accredited Masters programmes at UAS. The KFH has been assigned a coordinating role in this development.

An important criterion to approve a master programme is the connection with the research profile of an institution and its focus of at least national significance. An issue is the fact that this research takes place mainly in the technology areas, whereas in other domains there is low research intensity, mostly subjects with increasing numbers of students where teaching is the major activity. Their level of research outside technology is too low to justify its existence in a long-term perspective and consequently research competence and experiences stay behind.

One development is that existing research in particular domains have been concentrated to create more mass. As Lepori states, the issue has arisen that given the available resources, there is a risk that a catching up strategy in all domains would fail developing research to a sufficient level and would weaken the technological domain where UAS have successfully positioned themselves at the national level. There are pressures to limit the research mandate to technology (Lepori 2008). This may have consequences for the development of Master programmes in the different domains.

The professional master programmes concern consecutive study programmes according to the BaMa model with a clear demarcation from the continuing education programmes (MAS). A policy issue, however, is whether and to what extent various types of advanced-level programmes as well as other courses of continuing professional education are to be incorporated in the master programmes. Referring to the Bologna process regarding modularisation, the KFH takes the view that on the Master level a flexible system should evolve, which remains under control of the institution(s) involved, but which can deal with study plans of individual students, taking into account their own preferences and capabilities. The larger the 'provider' (one UAS or a joint effort of more UAS) the more structural flexibility would be possible. Such a flexibility may have two advantages. One advantage is that the students have better possibilities to make their own study plans. Another is from the perspective of the institutions that they can, without providing complete master degree programmes, separate modules in their course provision and collaborate with other institutions in a joint master degree programme. The modular structure of master programmes as well as the covenant on masters would allow such a move.

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8 United Kingdom

8.1 System Characteristics

There are 89 universities in the UK (including 72 in England, 13 in Scotland and two each in Wales and Northern Ireland). Universities in the UK have been established in four 'waves'. The first universities were Cambridge and Oxford. In the nineteenth century the so called Redbrick universities followed, catering for a new market of students and employers that came into being as a consequence of the industrial revolution. The third wave of universities was established in the 1960s again to cater for a growing demand in society for higher education. The final universities are the former polytechnics that were given university status in 1992 (Leisyte, 2007).

The transition of the polytechnics to universities also meant the end of the binary system and the establishment of unified system of higher education. The changes of 1992 created a single system of higher education, with a unified funding structure and separate funding councils for England, Scotland, and Wales. With only one exception, the University of Buckingham, all universities are publicly funded institutions. The Further and Higher Education Act 1992 allows higher education institutions in England and Wales, which satisfy prescribed criteria to apply for permission to include the word 'university' in their titles. All polytechnics were allowed to do so and only one (Anglia Polytechnic University) has chosen to retain the word 'polytechnic' in its title. Although the UK has this unified structure, the university sector (and literature) still refers to a distinction of "old universities" and "new universities" in other words between traditional universities and former-polytechnics.

The "old universities" were all established as universities before 1992. In general terms, the 'old' universities do not provide professional training, although they do provide a range of professionally accredited degree courses including engineering, accountancy, teacher training, librarianship and information science and medical studies. Qualifications specific to a profession and required for its practice are more often obtained through successfully completing examinations set or accredited by professional bodies, such as the Chartered Institute of Public Finance and Accountancy and the Council of Legal Education.

Most of the "new universities" were previously polytechnics. Polytechnics were originally set up by charitable endowment to enable working-class men and women to advance their general knowledge and industrial skills on a part-time or full-time basis. Their role changed with the 1966 White Paper, "A Plan for the Polytechnics and Other Colleges" (GB. Parliament House of Commons, 1966), which described the polytechnics as regional centres of higher education linking industry with business.

The government in the UK has been using the logic of the creation of the knowledge economy or knowledge society to justify expansion in higher education, increased selective investment in research. Providing human capital for the knowledge economy has been also the justification for widening participation in higher education and a new ‘vocational’ focus in teaching and curriculum in both ‘old’ and ‘new’ universities (Brennan et al. 2006).

8.2 Quantitative Characteristics of the System

The access to higher education has grown in the UK. The growth at the post graduate level was continuous. The UK Government has emphasized the expansion of higher education as an important policy goal. The 2003 White Paper “The future of Higher Education” (DfES 2003) states the economic case for expanding the provision of higher education. It emphasizes the balance between the quality and the response to the market needs in terms of the type of courses on offer. The objective to increase participation in higher education has been set to 50% of those aged 18-30 by the end of the decade (Leisyte, 2007). The new type of qualification, the work-focused foundation degrees which are tailored to the needs of students and the economy have been one of the major instruments to achieve this goal. Looking at the total number of students and undergraduate and postgraduate levels, we can see that a significant proportion of part-time students can be found at the post-graduate level compared to undergraduate level.

Table 8.1 All HE students in the UK 2007/08 by mode and level of study.

	Total HE students	Postgraduate			Undergraduate		
		Total PG students	Full-time	Part-time	Total UG students	Full-time	Part-time
The UK	2306105	501135	248380	252755	1804970	1232005	572965
England	1922180	417165	206865	210300	1505015	1011955	493060

Source: HESA 2009.

In 2007/08, the total number of postgraduate full time students was slightly lower than part time students: 248380 full-time versus: 252755 part-time students. The difference between full-time and part-time students depends heavily on the sector. For example, Master’s degree students in nursing and social work have more students in part-time degree studies, while accounting and hospitality students are opting more for the full-time Master’s studies. See Table 2.

Table 8.2 The number of students in selected subjects in 2007/08.

The UK, academic year 2007/2008		
	Full-time postgraduate	Part-time postgraduate
Nursing	1735	9575
Social Work	4140	4790
Accounting	1810	1010
Hospitality, tourism	2055	895

Source: HESA 2009.

Another difference which is visible among the Master's degrees leading to professions is it university based or employment based. In Social work, for example, a total of 218 degrees have been approved in England at 67 accredited universities. The courses are offered at the BA and MA levels in a variety of ways – full time and part time, university based and employment based. Nearly three quarters of the postgraduate courses in Social Work are university based. Out of 5,567 students studying for degree in Social Work at both levels in 2005-2006, 20% were postgraduate full-time students (GSCC 2006).

8.3 Masters degrees

In England postgraduate qualifications include doctorate degrees, masters degrees, higher bachelors degrees (bachelor degrees with honours) and Postgraduate Certificates in Education.

A master's degree is conferred after one or two years' study following the bachelor's degree. Masters' degrees usually require a minimum of one year's full-time study (more commonly, two years), or the part-time equivalent. Exceptions are Oxford and Cambridge Universities, where the degree of Master of Arts (MA) is an indication of 'maturity' and not of additional academic achievement. Graduates of these universities (that is, holders of the degree of Bachelor of Arts (BA)) may apply ('supplicate') for the degree of Master of Arts (MA) on payment of the appropriate fee, without undertaking any further study or examination.

Common degrees obtained for taught or research Master's (or a combination of both) are: Master of Arts (MA), Master of Science (MSc), Master of Business Administration (MBA), Master of Education (MEd), Master of Social Work (MSW), Master of Musical Arts (AMusM), Master of Medical Sciences (MMedSci) and Master of Philosophy (MPhil). They are offered at both 'old' and 'new' universities. At a glance, the 'new' universities seem to be more engaged in offering a large variety of Master's degrees which lead to professions than the 'old' universities.

Students have to pay tuition fees for the Master's courses. The amount of fees varies across the universities and across the disciplines. There is no entitlement to support second cycle

study in England. Awards or stipends for the Master's courses are available on a competitive basis for approved courses. The usual source of funding on this basis comes from the Research Councils. Some qualifications such as teaching qualifications (Qualified Teacher Status) are eligible for financial support. They can be administered also as Master's courses (Eurydice 2009).

The degrees correspond to the three cycle structure of the Bologna Process. Honours level corresponds to the first cycle, Master's level – to the second cycle and the doctoral level to the third cycle. The Quality Assurance Agency guidelines of programme specifications note that the European level developments should be taken into consideration, which largely correspond with the already existing National Qualifications Framework.

In the description of the National Qualifications Framework the holders of a Master's degree will have the qualities and transferable skills necessary for employment, such as the exercise of initiative and personal responsibility, decision-making in complex and unpredictable situations, the independent learning ability required for continuing professional development besides the requirement knowledge and independence gained from the Master's studies. As the framework emphasizes, the study undertaken for a Master's degree will be at, or informed by, the forefront of an academic or professional discipline.

The design of the programmes, the decision of the kind of programmes to be offered and the monitoring of these programmes is the responsibility of the universities. In 2009, universities in England, Wales and Northern Ireland offered a total of around 44, 000 different Master's programmes for the 2009 entry. The Quality Assurance Agency for England offers the Code of Practice for the guidance of institutions covering programme design, approval, monitoring and review (QAA 2006). Further monitoring is also carried by the Professional Sector Councils, since they accredit/approve the Master's programmes which lead to professions. They continuously evaluate the programmes if they meet their standards. For example, in Nursing, the role of Nursing and Midwifery Council is paramount in monitoring the quality and adherence to the standards to support learning and assessment in practice requirements of Master's programmes in nursing.

The tuition fees vary per institution, per subject and per length of study and mode of study. For example, in Master's studies in Accounting/Finance the fees vary from £3,000 to nearly £20,000 with a range of attendance from no days (distance learning) to 2 years full-time study (Universities websites).

8.3.1 History of professional masters

Traditionally the universities in England educated the 'gentlemen' - the clerics and later the civil servants for the needs of the empire. As noted by Harvey et al. (2002), although with a certain resistance universities also educated medics and engineers. In the English context, there is long history of the engagement of professional bodies with higher education in producing professionally competent graduates. Some of the regulatory bodies are contributing significantly to the development of curricula and the assessment of students, for example, in nursing and social work. The rules and standards set by the Nursing and

Midwifery Council and General Social Care Council are paramount in approving and monitoring the programmes in these sectors (NMC, 2009). The universities attempt to meet the government targets for increases in nurses, doctors and teachers (Harvey et al. 2002)

In general, a considerable cultural shift is noted in the English higher education and a growing awareness among academics to emphasize and develop students' employability. In the view of Harvey et al, 2002, this is paralleled with a revival in interest in pedagogy and a focus on student-centered learning.

8.3.2 Organization of professional master degrees

In England there is no concept of a professional Master's degree. Master's courses are very common as they are a serious source of income for universities, especially in the case of integrated Master's degrees and in certain sectors, such as MBA degrees. The usual requirement for the transition to the Master's degree is the first cycle degree. The transition from a Master's degree to a Doctorate degree is possible if the Master's degree included the research component, or if the PhD degree has a 1+3 structure. Depending on the sector, the prerequisite for entering the PhD programmes can also be relevant professional experience and other qualifications.

As noted by the Quality Assurance Agency in England (2006), all institutions must offer a wide range of courses. Universities must have a sufficient distribution of students across five of the eleven curriculum areas listed by the Higher Education Funding Councils (HEFCs) and accepted by DENI (Department of Education Northern Ireland). Institutions, which were originally set up as, for example, institutes of technology but which subsequently received a university charter tend to retain their technological specialty.

8.3.3 The content and format of professional master degrees

In general, the Master's degrees can be taught, research, or a mixture of both. Longer, research-based programmes lead to the degree of MPhil. The usual duration to achieve the learning outcomes of most master's degrees is at least on full-time calendar year. The entry level requirement is a bachelor's degree with honours or equivalent. The master's degrees are distinguished from the postgraduate certificates and diplomas since they include planned intellectual progression that often includes a synoptic/research or scholarly activity.

Some master's degrees, such as in science, engineering, mathematics, comprise an integrated programme of study spanning several levels are normally achieved through study equivalent to four full-time academic years, thus, Bachelor's and Master's combined. The Master of Arts (MA) granted by the University of Oxford and the University of Cambridge are not academic qualifications. The MA is normally granted, on application, to graduates of these universities with a Bachelor of Arts (BA). No further study or assessment is required, but the recipient may be required to pay a fee.

The conditions for the Master's degrees are that the result should meet the qualifications descriptor of the National Qualifications Framework, level 7 for the Master's degree, taught or research master's or both. Each university determines the number of hours of study required for each programme (QAA, 2008). The Master's programmes which lead to professions may include work placement learning module or longer placement in workplace environment.

Master's degrees can be full-time and part-time, thus the fees vary accordingly. Master of Arts degrees in different professional fields involve modularized courses. Besides the Master's degrees which lead to professions, universities provide a range of short-term programmes, flexible modular programmes offered in the workplace, top-up courses and other forms of continuous professional development. The participation in different Master's programmes depends on a subject. For example, the under representation of men has been a perennial problem in social work programmes as well as the higher proportion of mature students, or a high proportion of students from black and minority ethnic groups (GSCC, 2006).

8.3.4 Relationship with the labour market

The emphasis towards employability of the study programmes can be traced back to the Dearing report (1997) and later reiterated in the Lambert Review of university/business collaboration (2003). The Dearing report according to Harvey et al. (2002), helped to raise the profile of employability within higher education. It recommended that universities should identify opportunities to increase the extent to which programmes helped students to acquaint themselves with work. It also called for the government to work with representative employer and professional organizations to encourage employers to offer more work experience opportunities to students. The review suggested that the structures within which higher education institutions operate should be sufficiently responsive to encourage collaborations between higher education and business employers.

Claims for broad vocational relevance (in terms of generic transferable skills) are probably made for most higher education programmes. As recent curricular developments geared towards enhancing student employability clearly show, in order to be relevant to the workplace, learning does not need to take place within the workplace. Master's programmes which are vocationally-relevant (for example, engineering, business studies, librarianship) may not include any workplace learning.

At the same time, employability had been related to the programmes linked to professional accreditation (such as nursing, teacher training, social work) or the year-long work placements of 'thick-sandwich' programmes such as business, social science, especially in 'new' universities as emphasized by Harvey et al. (2002). For example, in the hospitality Master's programmes in the UK a placement year is a common phenomenon. This means, that the students in tourism, hospitality, leisure industry, events, heritage and catering management programmes may expect paid or unpaid work in the tourism industry locally or abroad as part of their Master's programme (Universities' websites). The learning outcomes of such programmes are informed by the QAA Masters Awards in Business and Management subject benchmarks.

There are an increasing number of stakeholders with interests in shaping Master's programmes according to the labour market needs, including the Sector Skills Councils and the Regional Development Agencies. The Professional, statutory and regulatory bodies, such as Sector Skills Councils, accredit the programmes that can lead to entry to a profession or other related occupation. The Quality Assurance Agency requires that programme specifications should identify those aspects of the programme that are designed to meet the requirements of the relevant body. Thus, the say of the Sector Skills Councils in shaping the professional Master's courses is rather high in England, which reveals that the labour market needs are widely represented by the Sector Skills Councils. For example, in social work discipline, the report of the General Social Care Council "Social Work Education in England: listening, learning, shaping" (2006) has showed that the needs of employers are widely met through stakeholder participation in shaping the curriculum, evaluating the courses, participation in the management committees. The role of employers has also increased in the regional partnerships with the social care regulators which accredit the social work programmes in universities. In fact, report emphasizes, that "the involvement of the stakeholders in all aspects of the course is a key requirement of the social work degree" (p. 32). Similarly, the Nursing and Midwifery yearly Quality Assurance Monitoring Results 2008-2009 pay serious attention to the programmes' relevance for the labour market. In fact two of the five key risk areas of the MMC reviews of the nursing programme curriculum are related to practice: practice learning and fitness for practice (NMC, 2009).

The employability of the Master's programmes is fostered also through a range of university support services. Today universities in England have a variety of structures in order to interact with employers, such as industrial liaison and intellectual property rights units, continuing professional development programmes and links between individual departments and employers.

8.3.5 Governance

New Master's programmes leading to professions can be opened by universities based on demand and they need to be accredited by the relevant Sector Council as well as meet the Framework conditions of the Quality Assurance Agency. Students in certain sectors, such as, education can be funded by the governmental schemes while in most of other programmes leading to professions the students have to self-finance or find funding from the available scholarship schemes in the Research Councils. The funding of the programmes thus depends on the attractiveness of the programme, the potential employability possibilities as well as the reputation of the university, to name a few.

8.4 Policy Discussions regarding Professional Masters

An important policy development to be mentioned in regard to the development of the Master's programmes has been the increased regulation of the Master's programmes leading to professions by different sectors. Important policy concerns have been ensuring

the compliance with the minimum professional standards, tackling the problems of participation in certain professional sectors, employability as well as meeting the national demand to prepare professionals in specific fields (e.g. nursing). Employability has been a highlighted concern at all levels, for example, the Dearing report (1997) and the Lambert Review (2003) have both emphasized the pivotal role of employers and other stakeholders in shaping the curriculum, increasing the work placements and other interaction between the higher education and the world of work in different sectors.

Another issue noted in several studies is the need for brokerage functions to facilitate university' engagement with employers. Brokerage may be one way of starting to create more permeability in the boundaries between higher education and work (Brennan et al. 2006). This role has been increasingly assumed by the professions' regulators in the England.

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Interviews with

Dr. Lee Harvey, Copenhagen Business School
Dr. Brenda Little, CHERI, Open University, the UK.