



Education and Culture DG

**CURRICULAR REFORM
PART THREE**

**The extent and impact of higher education
curricular reform across Europe**

**Final report to the Directorate-General for Education and
Culture of the European Commission**

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Part Three: Five case studies on curriculum reform



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Case Study: The Bologna reforms in Swiss medical education¹

1. Introduction

Switzerland has 7.5 million residents and is situated at the heart of Western Europe, at a crossroads between linguistic areas. This is reflected inside the country. There are four official languages: German (main language for 63.7% of the population), French (20.4%), Italian (6.5%) and Rhaeto-Romanic (0.5%). The remaining 9% of the population cite a foreign language as their main language (Lüdi & Werlen 2005).

Switzerland is a Confederation formed by 23 cantons. There are three political and governmental levels: the Confederation, the cantons and the municipalities. The subsidiarity principle states that every decision and implementation should be handled at the lowest possible level. This leads to diversity, also in the educational sector: Municipalities for example have a certain degree of authority regarding compulsory education.

Though Switzerland is not an EU member state, it is very much linked to it through a variety of bilateral agreements that include regulations in several areas, such as, among others: free movement of persons and goods; transport; environment; statistics; cooperation in the field justice, police, asylum and migration; research and education. An example of bilateral agreements in the area of research is Switzerland's participation in the Framework Programme of the European Union.

Switzerland is chosen as the case study for medical education because it is one of the few countries where considerable progress has been made with the Bologna process (van Liempt 2006). In most European countries, medical education is one of the fields where the implementation of the Bologna process, especially regarding the introduction of ECTS credits and a two-cycle structure, encounters a lot of resistance. This structure is seen as problematic, probably even "harmful to medical education and its quality, to the medical schools, the students and the profession, and in the last resort to the health care system and its patients" (WFME² & AMEE³ 2005: 2). The European Medical Directive 93/16/EEC prescribes medical education in the EU to consist of six years or 5500 hours of structured schooling (WFME & AMEE 2005). The GMA⁴ recommends medical faculties to participate actively in the implementation of the Bologna process, but it remains rather sceptical regarding the introduction of a two-cycle system (Gerke et al. 2005).

Switzerland seems an exception to this general view: the medical faculties succeeded in proposing a model which respects the requirements of the Bologna process and at the same time meets the European directives on medical education and the Swiss federal legislation. All medical faculties agreed on the implementation of this new model, but the implementation process is still ongoing. With the beginning of the academic year 2006/07, the medical faculty at the University of Basel introduced the new model for their first year students. Lausanne and Geneva are introducing the reform progressively, Bern and Zurich plan to have implemented the new model by autumn 2007. Therefore a close look at Swiss developments, a case which can be exemplary for medical education throughout Europe, is justified.

¹ This case study was written by Egbert de Weert with support from Carole Probst and Aleksandra Kovač

² World Federation for Medical Education

³ Association for Medical Education in Europe

⁴ Gesellschaft für medizinische Ausbildung, the German section of the Association for Medical Education in Europe

This study presents the implementation of the Bologna declaration in medical education in Switzerland. It first outlines some general aspects regarding education, higher education and the Bologna process in Switzerland (section 0). Section 0 addresses medical education in Switzerland, with focus on reforms introduced from 1996 on, culminating in the Bologna model for medical education in Switzerland, presented from section 0 on. Estimated impacts of the new model are discussed in section 0. The final section presents concluding reflections, mainly regarding the strong points of this case.

2. Education in Switzerland

2.1. Education in Switzerland

The Swiss education system is based on nine years of compulsory education at a primary and secondary I level, organised following cantonal regulations. After compulsory education, young people can choose to go on with general education if their school achievement answers the standards requested for this type of education, or start with vocational education, usually in the form of an apprenticeship with one or more days of classroom education per week.

In 2005, 20% of all secondary school diplomas were traditional *Maturitätszeugnisse*, received after three more years of general education after compulsory education, allowing the enrolment at a university. 73.3% of all students at secondary II level were attending vocational education (BFS⁵ 2006a). These students have the possibility to work towards a *Berufsmatura*, a vocational final secondary-school degree which serves as an admission ticket to the universities of applied sciences⁶. 13% of all secondary school diplomas in 2005 were of this type. 63.5% of all secondary school diplomas in 2005 were traditional vocational education diplomas which do not give immediate access to tertiary education at university level (BFS 2006b).

The rate of first-year students at university level in 2003 was 38%⁷. This rate is higher than the yearly rate of people achieving a secondary education qualification allowing to study at this level. This is caused by a high percentage of foreign students studying in Switzerland: 17% at the Bachelor and Masters level (ISCED 5A), 40% at doctoral level (ISCED 6) (BFS 2006c).

2.2. Higher Education in Switzerland

In the last decades, the Swiss system has been characterized by, on the one side, bureaucratic control from State (concerning administration, personnel and budget) and, on the other side, academic power (on careers, teaching and research), with a relatively limited power of central university directions (Perellon & Leresche 1999). There seems to be a trend towards a model which gives more autonomy to university management. Recently there have been changes for better coordination and reinforcement of university directions, also with respect to legal aspects on a national and cantonal level (Lepori 2006). Representing bodies of the higher education institutes have been implemented: the Conference CRUS⁸ representing the cantonal universities and the polytechnic institutes and the Conference of the universities of applied sciences CUAS. These bodies assume coordination tasks.

The higher education landscape in Switzerland follows a two-track system; the power is separated between the Confederation and the cantons (OECD 2003). There are different types of institutions at a university level in Switzerland: twelve universities, consisting of ten cantonal universities and two federal institutes of technology (in Zurich and Lausanne), eight universities of applied sciences (UAS),

⁵ Swiss Federal Statistical Office – Bundesamt für Statistik BFS

⁶ universities of applied sciences are called *Fachhochschulen* in German and ⁷ Referring to the age cohort.

⁸ Conference of Rectors of Swiss Universities – Conférence des Recteurs des Universités Suisses, Rektorenkonferenz der Schweizer Universitäten

15 universities of teacher education and five other university-level institutions supported by the Confederation (CRUS 2006).

The ten cantonal universities, financed mainly by the cantons and to a lower degree by the Confederation, are under cantonal authority. Cantonal laws and regulations on universities differ between cantons. In most cantons there is a large autonomy attributed to the universities regarding the structure of internal organisation and regulations. In the year 2005/06, 93350 students were enrolled at the ten cantonal universities, 53% of them being women. Zurich has the highest number of enrolments (23832), Lucerne is the smallest university in terms of numbers of students (1771) (BFS 2006e).

The two federal institutes of technology, the *École Polytechnique Fédérale de Lausanne (EPFL)* and the *Eidgenössische Technische Hochschule Zürich (ETHZ)*, are funded and supervised at a federal level and have a mandate from the Federal Council that leaves wide academic independence and freedom to them. The ETH Board as the responsible body grants intensive freedom to the institutes' presidents and directors. The federal institutes of technology concentrate on research, teaching, technological innovation and services and cover the disciplinary areas of science/engineering and architecture. (SER⁹ & OPET¹⁰ 2006). 18959 students have been enrolled at the two federal institutes of technology in the year 2005, with a female percentage of 27% (BFS 2006e).

Seven out of eight universities of applied sciences UAS are funded by the Confederation and run by the cantons, the youngest one is a private institution and not yet represented in the CUAS. The federal law on the UAS (*Bundesgesetz über die Fachhochschulen*) from 1995 regulated the assembly of several *Hochschulen* into seven regional UAS which offer training in different areas. The total number of students enrolled at the eight UAS in 2005 was 44370, among them 16901 (38%) women (BFS 2006e).

2.3. Bologna

The federal law on the promotion of universities (*Universitätsförderungsgesetz*) commissions the Swiss University Conference (*Schweizerische Universitätskonferenz SUK*) to decree framework regulations regarding duration of studies, recognition and final degrees. The Federal Office for Education and Science¹¹ and the SUK commissioned the CRUS to coordinate the implementation of the Bologna declaration in Switzerland (CRUS 2004c). Together with a task force with members representing students, universities, UAS, teacher training institutes, the cantons and the Confederation, the SUK elaborated consistent guidelines (SER 2006). These Guidelines for the coordinated renewal of teaching at the universities in Switzerland in the context of the Bologna process (*Richtlinien für die koordinierte Erneuerung der Lehre an den universitären Hochschulen der Schweiz im Rahmen des Bologna-Prozesses*) were passed by the SUK in December 2003. These guidelines, supplemented with a comment in 2006, are based on the purpose,

„that (...) the quality of study offers is better ensured, the mobility of students in all phases of studies is enhanced, interdisciplinarity of degree programmes is expanded and that equal opportunities are guaranteed through the possibility of part-time studies and of sufficient study grants“ (SUK 2003: I, translated by the authors).

Given the SUK's mandate by a federal law, these guidelines are authoritative for all universities. They stipulate that the structural changes regarding the introduction of ECTS, Bachelor degrees (180 ECTS) and Masters (90-120 ECTS) should substitute the usually four-year licence degree programmes and be implemented by all universities by 2010. An exception was made for medical education, which was

⁹ State Secretariat for Education and Research – Secrétariat d'Etat à l'éducation et à la recherche, Staatssekretariat für Bildung und Forschung SBF

¹⁰ Federal Office for Professional Education and Technology – Office fédéral de la formation professionnelle et de la technologie, Bundesamt für Berufsbildung und Technologie BBT

¹¹ Now State Secretariat for Education and Research

supposed to follow the time schedule of the revision of the federal legislation for university medical professions.

By Winter semester 2005/06, three out of four first-year students enrolled at a Swiss university or UAS started with a Bachelor programme, up from around 1 out of 4 in 2004/05. This turning point depends partly on the fact that by 2005/06 the UAS implemented the new system in a combined effort. The universities are engaged in a more gradual change process which started already in 2001. At the university with the highest number of enrolled students, Zurich, most faculties change the programmes for Winter semester 2006/07. The smaller universities (Lucerne, Università della Svizzera italiana, St. Gallen, Fribourg) and the two federal institutes of technology are the furthest in the process (BFS 2006f). By Winter semester 2005/06, Swiss universities offered 233 Bachelor programmes, 220 Masters programmes and 15 specialised Masters. Thus 71% of all offered programmes followed the new system. A total of 693 Bachelor and Masters programmes is planned (CRUS 2006a). There are already established (17) and planned (2) "Joint Masters" programmes among Swiss universities and in collaboration with foreign universities (CRUS 2006a). The Swiss Federal Statistical Office estimates that by 2010, implementation of the new study structure will be completed (BFS 2006f), as required by the directives.

Concerning time-to-degree, first results show that around 1/3 of students complete their Bachelor degree within six semesters, more than half of them within eight semesters¹². In this regard, there seems to be no difference between the old and the new system so far, the rate of students leaving their studies completely or changing to other subjects or institutions has not changed significantly¹³ (BFS 2006f).

More than 90% of students graduating with a Bachelor degree enrol for a Masters programme within 1 year after their Bachelor degree (BFS 2006f). First experiences show some student mobility: In Winter semester 2005/06, 4140 students started with a Masters programme. Overall, 77.9% of them had received their first university degree at the same university where they started the programme, 7% at another Swiss university and 15.1% abroad¹⁴. The CRUS strategy paper 2005-2015 (Universitätslandschaft Schweiz: CRUS 2004a) demands that 25% of the students enrolled in a Masters programme have completed their previous degree at a different university. By this requirement, mobility is, to a certain extent, prescriptive.

A survey among students (CRUS 2006a) reports some difficulties encountered regarding the recognition of ECTS credits "collected" at other universities, it seems that there are still some obstacles to mobility. There are efforts towards a coordinated implementation of both ECTS and the diploma supplement (National Report 2005). Students call for harmonising grant attribution on a national level, for more flexibility allowing part-time employment and for better information (CRUS 2006a).

In 2001, the centre of accreditation and quality assurance of the Swiss universities (*Organ für Akkreditierung und Qualitätssicherung der schweizerischen Hochschulen* OAQ) was established. This independent body allows for national coordination of quality assurance. It operates on the basis of international practices and research findings. Among its tasks are the development of guidelines and quality standards for academic accreditation and the completion of accreditation procedures. The OAQ accredits both institutions and programmes (OAQ 2006, National Report 2005).

¹² 32.4% of the 1563 students enrolled for a Bachelor in 2001 had completed their degree six semesters later, 55.7% of them by the beginning of the winter semester 2005/06, meaning that 23.3% completed their degree within 7 or 8 semesters (BFS 2006f).

¹³ By 2005/06 11.6% left their studies (Exmatrikulation) without having completed a degree.

¹⁴ These numbers differ though articulately between the universities: The percentage of students with a Bachelor from a foreign university for instance ranges from 0.6% (Lucerne) to 55.8% (Università della Svizzera italiana), the number of students with a first university degree from the same university ranges between 38.8% (Università della Svizzera italiana) and 92% (Fribourg).

3. Medical education in Switzerland

3.1. Overview

University medical education is provided by five of the ten cantonal universities: Geneva and Lausanne, both in the French-speaking part of Switzerland, and Basel, Bern and Zurich, three universities where German is the main language. Additionally, two universities offer medical education at a basic level: Neuchâtel just for the first year, Fribourg only for the pre-clinical part, namely the first 2 years. From the second year onwards, students from Neuchâtel continue their medical education at the universities of Geneva or Lausanne.

The two federal polytechnic institutes do not offer medical education leading to the profession of a physician. They are active, for instance, in the area of biomedical techniques or pharmacy. The universities of applied sciences offer some programmes in the area of health (midwifery, nursing, nutrition counselling, occupational therapy and physiotherapy), but their programmes do not lead to the possibility of acting as a medical practitioner, either. Therefore for this study mainly the five universities mentioned above are of interest.

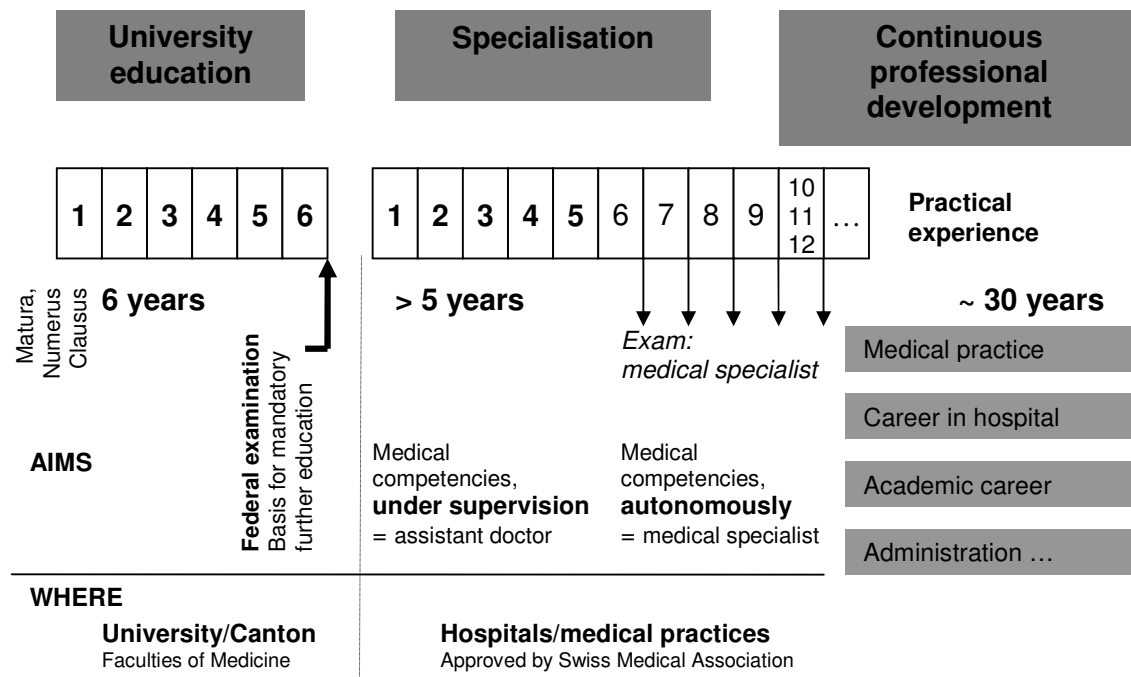
The faculties of medicine at these universities offer programmes in human medicine, dental medicine, nursing science¹⁵, exercise and sports science and health sciences. Training in veterinary medicine is provided by Vetsuisse, an inter-university faculty which arose from the merger of the faculties in Zurich and Bern. In this report, we focus on the developments in the areas of human medicine.

Figure 1 shows how medical education in Switzerland is organised. The initial training at university takes six years, including ten months of clinical electives. After both the first and the second year, exams organised by the Federal Office of Public Health¹⁶ have to be taken. Towards the end of these six years, a medical student usually writes a dissertation which leads to the degree of Dr. med. This degree is not comparable to a research PhD in other disciplines. It is based on minimal requirements and therefore often criticised (CRUS 2004b). After the conclusion of the training at the university, the student can take the *Staatsexamen*, the federal examination which, if passed, allows to work as a physician and to access to the mandatory further training. This exam is organised by the Federal Office of Public Health simultaneously all over Switzerland. In the following at least five years, the young physician works as an assistant doctor under supervision at a hospital or at a medical practice. (S)he then takes another exam for becoming a medical specialist (*Facharzt*), which allows him/her to work independently. Further education during practical work is mandatory for every physician.

¹⁵ Nursing is trained as a vocational education not at a university level and includes both classroom teaching and training on-the-job. The universities offer studies in nursing science, *Pflegewissenschaft*.

¹⁶ Office fédéral de la santé publique OFSP, Bundesamt für Gesundheit BAG

Figure 1: Teachings in Human Medicine in Switzerland. Adapted from Im Hof 2005



Access to medical education at Swiss universities is restricted due to limited capacities. The number of available places per university is assigned by the Swiss University Conference SUK. Foreign students can apply for medical education in Switzerland only if they fulfil certain requirements, mainly regarding their domicile in Switzerland or Lichtenstein. If there are more applications than available places, universities have the possibility to require students to do an aptitude test, the *Eignungstest für das Medizinstudium*. This test has been introduced for human medicine in 1998, for veterinary medicine in 1999 and for dental medicine in 2004. The introduction of these restrictions allowed a reduction of the capacity overload in medical studies and therefore to improve the study conditions. Teaching in small groups for example would hardly be possible without access restriction.

Students have to apply for medical studies by mid-February of the year in which they want to start their studies. Depending on the number of applications, the SUK decides in March whether a test will be done or not. Students then have to apply for the test, which can be taken in German, French or Italian at different places in Switzerland. They indicate their preferred universities. The test takes place at the beginning of July, the participants get their results in August and, if accepted, have to confirm that they start their studies in October. Since usually there are students deciding that they do not want to study medicine after they have been accepted, a second round of assignment of study places is done. Generally it can be said that around one third of the students having taken the test and wanting to start their studies do not get a study place (ZTD Zentrum für Testentwicklung und Diagnostik der Universität Fribourg 2006).

For the academic year 2006/07, there have been 2489 applications for education in human medicine, but only 947 places (CRUS 2006b). There are significant differences among the universities: Those offering only a first part of the education, Fribourg and Neuchâtel, have less applications than places, all the other universities have much more applications than places (see Table 1). At the universities of Geneva, Lausanne and Neuchâtel, applicants do not have to pass a test¹⁷, but there is intra-university selection during the first year of studies (SUK 2006).

¹⁷ Therefore students starting their studies in Neuchâtel can continue only in Geneva or Lausanne.

Table 1: applications for medical education 2006/07 (Source: CRUS 2006b).

University	Applications (15.02.06)	Capacity
Basel	386	118
Bern	458	125
Fribourg	94	103
Geneva	228	187
Lausanne	294	167
Neuchâtel	45	47
Zurich	774	200
Total	2489	947

In 2005, 623 students have concluded their studies in human medicine, 601 received the title of Dr. med. (BFS 2006g). There is a substantial drop-out rate in medical education in Switzerland: From all students starting their university education in medicine and pharmacy in 1995, ten years later 60.4% have concluded a degree in these disciplines, 12.3% in another discipline (BFS 2006d).

3.2. Reforms in medical education

An important reform in medical education at a university level started already in the mid-1990ies. The medical faculties of Bern and Geneva, followed by the other medical faculties, initiated a reform of their study programmes, based on the awareness that the needs of general practitioners¹⁸ were not met, social and economic aspects were not considered, adjustment of contents was nearly impossible because of a tight structure, and teaching modalities¹⁹ did not allow to prepare students for lifelong learning (SWTR²⁰ 2006). The definition of health as “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (WHO²¹ 2006) as set by the WHO constitution, became more and more important. A medical practitioner assumes different roles as care provider, decision maker, communicator, community leader and manager. Medicine should be oriented towards the patient, both the biomedical definition of illness and the subjective experience and interpretation of illness by the patient should be taken into consideration. Medical education needs to respond to three dimensions: knowledge, skills and attitudes. In order to reach this objective, teaching/learning methods and exams had to be adjusted (Kaiser 2005).

These considerations led to a reform of medical curricula in Switzerland between 1996 and 2005. This reform aimed at the promotion of independent, efficient and life-long learning, critical judgements, application of scientific methods and development of social, ethical, communicative and economic competencies (Kaiser 2005). For this purpose, the Joint Commission of the Swiss Medical Schools SMIFK²², in collaboration with the medical faculties and the Swiss Medical Association, elaborated the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training²³ which came into force in 2003/04 and is applied by all medical faculties in Switzerland. This catalogue is actually under revision for adaptation to the Bologna requirements. The reforms, conducted by the single

¹⁸ more than 50% of the physicians in Switzerland belong to this category

¹⁹ mainly ex-cathedra lectures

²⁰ Swiss Science and Technology Council SSTC – Conseil Suisse de la science et de la technologie CSST, Schweizerischer Wissenschafts- und Technologierat SWTR: the advisory board of the federal council for all matters regarding science policy.

²¹ World Health Organization

²² Schweizerische Medizinische Interfakultätskommission. This body is composed of representatives from the medical faculties, the medical associations and the federal offices.

²³ To be consulted at www.smifk.ch. A new version, following the Bologna requirements, is being elaborated.

universities, led also to a higher coordination at a national level: the SMIFK and an executive board for federal exams in medicine (*Leitender Ausschuss für die eidgenössischen Medizinalprüfungen*) are two important bodies for this coordination (SWTR 2006).

For similar reasons, the federal law on medical professions (Medizinalberufegesetz MedBG) was revised (SWTR 2006). The legislation was passed by the national parliament in June 2006 and will come into force on September 1st 2007, with a transition period of 3 years. Some medical faculties introduce the Bologna model together with the coming into force of the MedBG. This law defines the knowledge, competencies and skills, including soft skills and personality development, medical graduates should have achieved. These requirements are in line with the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training. Required knowledge, competencies and skills include that graduates from medical education:

- are in possession of the basic scientific knowledge necessary for prophylactic, diagnostic, therapeutic, palliative and rehabilitative measures;
- understand the bases and methods of scientific knowledge;
- recognize health conserving influences and are able to judge them and to consider them in their professional activities;
- are able to consult, accompany and support patients in collaboration with experts from other professional fields;
- are able to analyse medical information and research results, to critically judge them and to apply them in their professional practice;
- are able to learn in the interdisciplinary collaboration with experts from other professions;
- know the legal foundation of the Swiss social security and health system and can apply this knowledge in their professional practice;
- are able to judge the efficiency, efficacy and profitability of their services and to act according to these judgments; and
- understand the relation between political economy and the health system and its different supply structures (Confoederatio Helvetica 2006, Art. 6 a.-i. MedBG).

Social soft skills and personality development are defined by the law as follows:

- Graduates in medical education recognise and respect the limits of medical activity as well as their own strengths and weaknesses;
- they understand the ethical dimension of their activity and seize their responsibility towards the individual, society and the environment; and
- they protect the patient's right to self-determination during the treatment (Confoederatio Helvetica 2006, Art. 7 a.-c. MedBG).

This law also defines federal examinations, further education, professionalism and accreditation of educational programmes.

These reforms improved interdisciplinarity and enhanced early contacts of students with clinical factors and the relationship between physician and patient. Therewith the Swiss faculties of medicine have achieved a comprehensive reform of their curriculum and the introduction of innovative pedagogic methods (Bader 2005). This is illustrated also by the example of the medical faculty of Basel presented below.

Another reform initiative in Switzerland, started by the CRUS, regards the financing and distribution of authority in medical education in Switzerland. In February 2004 the CRUS stated that the reform steps taken so far were only individual interventions and that it was necessary to look at the system as a whole. It published a conceptual paper entitled "Hochschulmedizin 2008". This paper presents problems and proposes solutions in the areas of university training of physicians; their professional further training; the subdivision of responsibilities in training; medical research; and funding of research and training (CRUS 2004b). The concept proposes eight points to address these problems (CRUS 2004b: 2):

- to completely assign the responsibility for content and financing of medical training and research to the universities and their medical faculties;
- to determine performance agreements for hospitals and other service providers in the area of medical research and training;
- to renew the contents of training and **establish a two-cycle structure**, in the context of the Bologna process;
- to detach professional further education from the university education and to assign, on the level of federal legislation, responsibility for it to an institution with an own sponsorship;
- to develop medical research qualitatively and to coordinate its contents at national level;
- to shape task sharing between universities and university hospitals and modalities of funding in medical education, research and services uniformly at national level;
- to establish cost transparency; and
- to adjust the competence arrangements to these changes.

This concept paper offered points for discussion. The aim of introducing clear responsibilities among the Confederation and the universities was perceived positively (SAGW²⁴ 2004). The concept paper was followed by a strategy paper (CRUS 2004a) which, among other aspects, stated the medical faculties' responsibility regarding content and funding in the implementation of the Bologna requirements.

Initially there was some resistance among the medical faculties regarding the implementation of the Bologna requirements in medical education. Medical education so far consisted of an integrative six-year programme, in line also with European regulations. The application of a BA/MA- structure with a possible exit-point at the Bachelor degree level did not seem applicable. There was also resistance against the introduction of different study courses (Bader 2005). But soon it became clear that the new law on medical professions and the already implemented reform were in line with the objectives of the Bologna reform (Suter 2005). A new model for medical education in Switzerland, including a two-/three-cycle structure and the possibility of choosing different majors, was developed. It is presented in the following section.

3.3. The Bologna model for medical education in Switzerland

In April 2005, the rectors of the five universities offering a full programme of medical education together with the deans of the faculties of medicine, definitively and unanimously passed a model for the application of the Bologna structure in medical education, proposed by the SMIFK. It respects the Bologna guidelines and the Swiss legislation for the Bologna reform (CRUS 2005). Concrete details of the implementation, however, can be decided individually by every faculty.

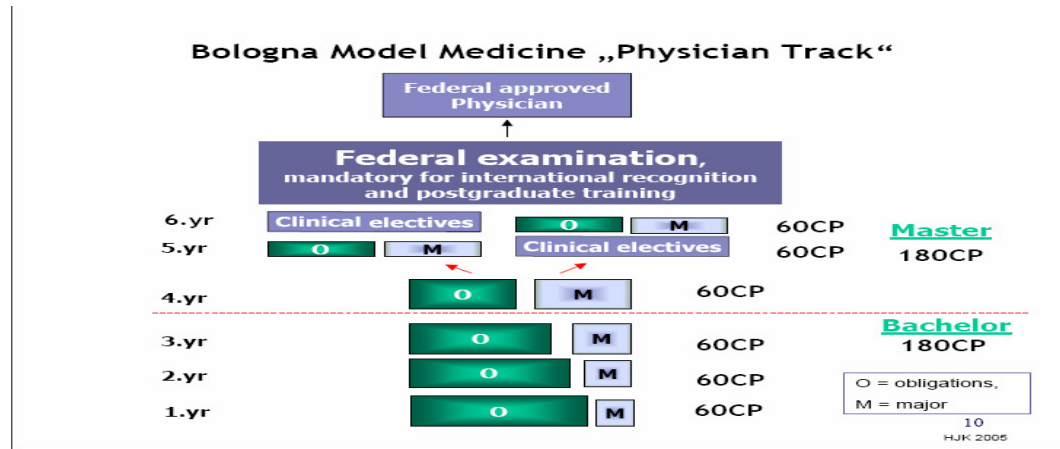
The model designs an integrative programme with 5 years of studies (a Bachelor degree of 180 ECTS and 120 ECTS at Masters level) plus ten months of clinical electives (60 ECTS) mandatory for those students who want to work as medical practitioners. As with the old system, the access to the *Staatsexamen*, which is mandatory for practicing medicine, is therefore given only after 6 years, nearly one of whom consists in clinical electives. The actual degree of Dr. med., which is not a research degree as in other disciplines, and is often criticised because of its minimal requirements, is abolished. Instead, there will be a more research oriented doctoral degree (CRUS 2004b).

Figure 2 shows the "physician track", the model which applies for students aiming at a professional future as a medical practitioner. After a 180 ECTS Bachelor, students start with the Masters. The Masters in clinical medicine consists of 180 ECTS credits (120 ECTS credits at university plus 60 ECTS credits as clinical electives). After the completion of the Masters, including the clinical electives (in the fifth or sixth year), the student can enrol for the *Staatsexamen*, which is mandatory for international recognition and for the equally mandatory postgraduate training. As with the old model, the

²⁴ Schweizerische Akademie der Geistes- und Sozialwissenschaften (Swiss Academy for Humanities and Social Sciences).

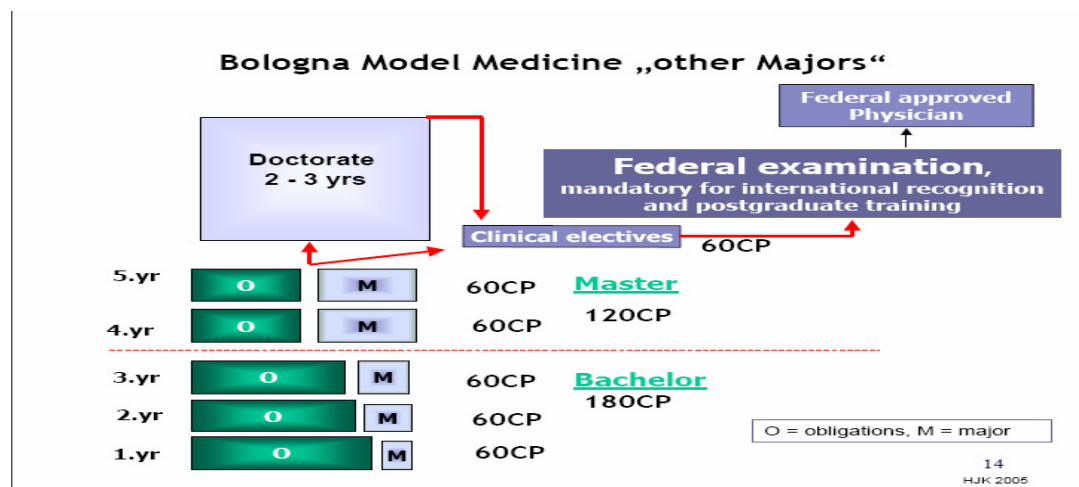
Staatsexamen is still organised by the Federal Office of Public Health. Responsibility for exams during the studies will be handed over to the faculties.

Figure 2: Source: Arnold 2006



In Figure 3, the alternative ways are outlined. There are several possible exit points and pathways. The universities are free to offer different majors, among whom students can choose in order to specialise in specific areas, for example in clinical medicine, public health, biomedical science. The majors can also be chosen among the offer of other, non-medical faculties, if there are agreements among the faculties. A student can leave the medical faculty after having completed the Bachelor degree. With this degree, it is possible to go on with a Masters programme, also at another university, to change the field of study or to leave the university, for example for vocational training in the pharmaceutical industry. The employability of this degree is addressed further in this text. With a 120 ECTS credits Masters, a student has completed his/her medical education and goes to the labour market – but (s)he is not allowed to work with patients. There is also the possibility to start with a research doctorate. If a student with a Masters wants to enrol for the *Staatsexamen*, the clinical electives are mandatory, but they can also be done later, for example after a doctorate.

Figure 3: Source: Arnold 2006



Every faculty can decide which majors to offer. These can include for example clinical medicine, dental medicine, biomedical sciences, international health, public health or neurosciences (Kaiser

2006). Faculties can offer majors and specialised Masters in line with their competence centres. This makes it possible that a faculty of medicine can emphasize its strengths and develop a profile different from medical faculties at other universities, which, in turn, makes it more attractive for students to choose their place of study according to their interests. Students can also choose their majors also in other faculties, if there are collaboration agreements, or work in research laboratories during their studies (Bader 2005). This model allows for individualised study routes and enhances intra- and interfaculty mobility.

Already with the introduction of the Swiss Catalogue of Learning Objectives, there was a significant change in the structure of training: before, the first three years were dedicated only to basic scientific content, whereas clinical content was part of the years four to six. With this reform, clinical content is transmitted from the first year on.

A Bachelor degree does not allow to practice as a physician. Generally, it is supposed that students with a Bachelor degree in medicine go on with the Masters, but other study courses are possible: a Bachelor degree in medicine can be combined with a second Bachelor degree in another field (for example in information technologies, communications or economics) which allows to assume new tasks in the area of health, or it opens the possibility of vocational occupation, for example in the pharmaceutical industry, in medical-technical professions or in the area of social security. Holders of a Bachelor degree in medicine dispose of basic knowledge and skills in scientific working and regarding the healthy and ill person and act professionally in their job-related environment (Kaiser 2006).

Common denominations for medical diplomas were decided, students can achieve diplomas as (SMIFK 2006):

- BA of Medicine
- BA of Dental Medicine
- MA of Medicine (180 ECTS)
- MA of Dental Medicine (120 ECTS)
- MA of Science in Medicine (120 ECTS), plus the denomination of the specialisation.

Chosen majors are declared in the diploma supplement.

The new model in medical education has been introduced in Basel for students starting with their first academic year in autumn 2006. Lausanne and Geneva introduce the reform progressively, but are still working on the implementation of the two-cycle model. Bern and Zurich plan to implement the Bologna model with the coming into force of the new Federal law on medical professions in autumn 2007. The following example presents some details on the case of the medical faculty of the University of Basel.

Institutional example: Basel

At the medical faculty in Basel, students starting their medical education in October 2006 are the first ones to be inserted in the new system. The mandatory subjects include two parts: subjects organised in thematic blocks (structured following the apparatus of the human body) and a second group aiming at the development of basic competencies such as social, communicative and ethical competencies, manual abilities, in scientific work and the humanities. In addition, the programme offers four majors: clinical medicine, dental medicine, biomedical science and public health.

Various learning and teaching methods as well as examination forms are applied, corresponding to the competencies that students are requested to master: In *lectures* with supportive literature study, selected subjects are taught systematically; in *courses*, students work in groups on clinical tasks; *physician patient teaching* is done directly in the hospitals and provides students with skills in anamnesis, testing techniques and communication among physician and patients; *private tutorials* give insights into the day-to-day work of a physician; the *skills lab* gives possibilities of practicing (a physician's) activities; in *problem oriented tutorials*, groups of 8-10 students work systematically on a

problem and learn the problem solving step by step, supervised by a tutor; *private study* is included in the weekly timetable and allows to deepen the problem oriented tutorials. Three types of exams are applied: *Multiple Choice Question* tests are to be done twice in a study year; for the *Objective Structured Clinical Examination* students have to pass different posts where they are examined on skills, judging competencies, physician-patient communication and problem solving competencies; the *Portfolio* is used to test the level of reflection in the area of social and ethical competence (Medizinische Fakultät Universität Basel 2006).

Project learning (in *problem oriented tutorials*) is an important component of medical education at the University of Basel. Students elaborate a topic in groups of eight to ten students, related to a patient's history, including basic knowledge. This allows an insight in areas of medical supply and an early contact to patients and fosters the ability to work in teams. This project learning is organised according to the majors: For students choosing the major in clinical medicine, it will be organised typically at a hospital or in a medical practice, for dental medicine it takes place at the centre for dental medicine, in biomedical sciences at a research department or in pharmaceutical industry and for public health, an example could be the institute for assurance medicine or occupational health (Kaiser 2006).

During the Bachelor, students can switch between the majors in clinical medicine, biomedical sciences and public health. If they start with dental medicine, a change of major is possible only in exceptional cases²⁵. The majors give the students orientation for their choice of the Masters. A student can follow the Masters the corresponding major of which (s)he has been attending by the end of the Bachelor. The University of Basel plans to offer a three-year Masters in clinical medicine (including 10 months of clinical electives) giving access to the *Staatsexamen* and two-year Masters in the areas of the other three majors.

3.4. Responses to the reforms and the new model

The Swiss Science and Technology Council SSCT (SWTR 2006), the advisory body of the Swiss Federal Council regarding science policy, praises the flexibility of the Bologna model for medical education. This model could allow to open the doors of certain parts of medical education also to other professions such as nursing or more science and technology oriented professions. The SSTC states also that collaboration with the UAS and the federal institutes of technology will be absolutely necessary to meet the needs of health care. It advises to make sure that medical education is not oriented only towards hospitals, but takes into account also the need of primary health care (SWTR 2006).

The SSCT states that in the last 15 years, faculties of medicine in Switzerland were able to conduct reforms that led to:

- concordance between the objectives of the federal law on medical professions and the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training, corresponding also to international recommendations;
- controlling bodies at intra- and interfaculty levels and instruments of quality control allowing a constant evaluation and renewal of teaching; and
- the implementation of the objectives of the Bologna-reform in 2006 which will allow collaboration among medical faculties and with other faculties of universities, universities of applied sciences and federal institutes of technology (SWTR 2006: 23).

²⁵ Study places for dental medicine are assigned already at the beginning of the programme: there is a separate number of study places in dental medicine assigned by the SUK, and students applying for dental medicine do an *Eignungstest* that is evaluated separately.

Alumni-MME, an association of alumni from the Master of Medical Education at the University of Bern, discussed the implementation of the Bologna system in medical education at its yearly conference in 2006²⁶. The central topic was the Bachelor of Medicine and its relevance for the labour market. Different possibilities for the usefulness of such a degree were identified, and arguments in favour of the introduction of the Bachelor level were discussed, also with representatives from possible employment sectors. An important argument in favour of the Bachelor was seen in the high drop-out rate of the old system. A Bachelor degree would allow those students deciding to abandon their medical studies to have a first qualification. These discussions included also recommendations regarding the competencies Bachelor degree holders should have acquired during their studies. In line with the federal law on medical professions, they included also non-medical specific competencies such as communication skills, team work, scientific work, health system and economics.

The new model of medical education in Switzerland allows the adoption of medical education to the requirements of the Bologna reform. Some actors (see for example Bader 2005 or SWTR 2006) propose a more revolutionary, open system which sees the new model as a general framework for education in health related areas. In this vision, medical faculties would become a platform open to all those willing to acquire medical knowledge and skills in any way. This would certainly require an extended collaboration with the universities of applied sciences. It could become a driving force towards the creation of new health professions. It would allow goal-oriented educations that respond to the needs of society, of industry and public administration and of the health system in general. The development of specific study courses at the different faculties would enhance mobility of students and probably make medical education in Switzerland very attractive internationally (Bader 2005). Representatives from the medical faculties, however, state that as for now nothing concrete is planned.

3.5. Summary of the reforms

Two-cycle structure

A two-/three-cycle structure is proposed in the Bologna model for medical education in Switzerland and is in process of implementation. This model includes a Bachelor degree which does not allow to work with patients, but gives possibility for professional activity in the area of health. It also includes a Masters degree. Access to the Federal Examination is only possible with one additional year of clinical electives. Therefore a student can become a medical practitioner, an assistant doctor, only after six years of training. The third cycle is represented by a research doctorate. Access to doctoral studies is possible with a Masters degree, the clinical electives are not mandatory. The actual degree of Dr. med. will be replaced.

Competence-based learning

Competence-based learning has been introduced already with the reform from 1996 to 2005, with the introduction of the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training. New methods of teaching, learning and evaluation are introduced. The desired learning outcomes include not only knowledge-related aspects, but also competencies, skills and attitudes related to the physician's responsibility towards his patients and society in general. The catalogue is actually under revision for the adaptation to the Bologna requirements.

Flexible learning paths

With the introduction of majors, the students have the possibility to specialize in their areas of interest, even outside the medical faculty. The introduction of a Bachelor degree allows to combine basic medical training with training in other disciplines. Those students who realise during their studies that they do not aim at a future as a physician now have the possibility to quit their studies with a Bachelor degree or to choose a Masters in their area of interest.

²⁶ Material can be found at www.alumni-mme.unibe.ch.

Mobility

Since study places at Swiss medical faculties are restricted due to capacity limits, mobility is not possible in an unlimited way. There are mobility programmes which allow it to a certain number of students to spend one or more semesters abroad, in exchange with foreign students. With the introduction of the two-cycle structure, a new way of mobility is possible: students can do their Masters at another university. This option becomes even more interesting when the different faculties develop different profiles by strengthening their areas of expertise and offer Masters programme according to these areas.

Recognition

The Swiss medical faculties have agreed to recognise their Bachelor degrees mutually, without restrictions. A Bachelor degree holder from any Swiss medical faculty can therefore enrol for a Master at all Swiss medical faculties. A Masters degree does not allow to work as a medical practitioner. This professional activity requires a federal examination, which is mandatory for access to the likewise mandatory further training.

Medical diplomas from the EU member states mentioned in the EU directive 93/16 are recognised in Switzerland. If they want to work as medical practitioners in Switzerland, holders of those degrees need to let them formally approve by the executive board for federal exams in medicine (*Leitender Ausschuss für die eidgenössischen Medizinalprüfungen*) (FMH 2006).

4. Impacts

Since the implementation of the Bologna model for medical education in Switzerland is still ongoing, it is not yet possible to prove its impacts in terms of numbers and experiences. The following information is extracted from interviews with people that have actively participated and still participate in the development and implementation of the new model.

Access

At this moment, foreign students who do not fulfil certain requirements regarding settlement in Switzerland are not admitted to medical education in Switzerland, due to the overload of the system. In October 2006, the SUK recommended to give access to medical education also to other groups of people, among whom young people residing in Switzerland whose parents are citizens of a European Community member state, if they are younger than 21 years old or if livelihood is granted to them (CRUS 2006c).

Access to medical studies in Switzerland is limited, medical faculties can decide to let their applicants do an aptitude test. Since 1998, this possibility has been used by several medical faculties. Without this limited access, the number of students would be too high to guarantee a qualitatively good training. With the new model the right moment for the aptitude test would be at the beginning of the Masters, but this is considered as not yet feasible, since the faculties' capacities would be clearly exceeded. In principle, the new model allows for the possibility that not all students enrolling for medical education become medical practitioners, and provides the basis for a widening of participation in this field. An argument against this system is based on the fact that there is already a lack of physicians in Switzerland. In order to counteract this argument, medical faculties have raised the number of study places when introducing the BA/MA-structure. It is, however, expected that 95% of all students go on with the Masters and that only around 10% of the students will choose a Masters not leading to practical work as physicians. There was a certain drop-out rate also with the "old" system.

Graduation

Time to degree has never been much of an issue in medical education in Switzerland, since it is quite structured both in terms of teaching and exams. Students have to enrol for the final *Staatsexamen*, and it is nearly impossible to withdraw from this enrolment. It is not expected that the Bologna model will bring any changes regarding time to degree, except that there will be students graduating already

after 3 or 5 years, with the Bachelor degree and Masters leading to professions that do not require the *Staatsexamen*, and therefore do not require the clinical electives.

Employability

Regarding employability, it is mainly interesting to look at the newly established Bachelor degree. Both graduates and the employment market are confronted with a new situation; a profile that has not existed before. It remains to see how they will react and adjust to it. The Bachelor degree is seen as a basis for professional activity with ongoing training or as a degree to combine with a second Bachelor, leading then to interesting combinations such as for example medical journalism. It is also judged positively in that it allows to the students to interrupt their studies with a valid degree. However, people involved in the implementation of the new process estimate that 95% of all students will go on with the Masters.

Mobility

Mobility of students inside Switzerland is warranted. The introduction of the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training defines common learning objectives. The five medical faculties have agreed to mutually accept their Bachelor degrees unconditionally, meaning that students can choose another Swiss university for their Masters. The medical faculties can offer specialised Masters according to their areas of expertise, which makes mobility even more interesting. How much this possibility will be used remains to be seen. Regarding international mobility, Lausanne for example has introduced an Erasmus exchange programme already more than ten years ago. Under this scheme, it exchanges every year 60 European students with 60 students from Lausanne. This exchange is usually done in the fourth year, in which no exams are to be taken. It is estimated that the introduction of the new system might temporarily slow down this mobility, because it introduces exams also in the fourth year.

Collaboration between the different medical faculties has been enhanced – another point that might lead to more mobility. As an example, starting in Winter term 2006/07, the universities of Fribourg and Bern offer a joint Bachelor-Masters programme in biomedical sciences which prepares students for a future in medical research or, if combined with other subjects, in health economics or scientific journalism.

Quality

Quality of education has been an issue already in the reform prior to Bologna, which introduced the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training. Medical faculties are implementing new teaching and learning forms, and training knowledge, skills and attitudes in line with new roles a physician has to take. In 1999, a group of international experts accredited medical education in Switzerland in the framework of a pilot project. With the establishment of the OAQ, faculties can undergo a process which allows them an accreditation for 7 years. Accreditation is mandatory for all degree programmes leading to a federal diploma.

Cost-effectiveness

Even though with the new model medical education in Switzerland does not cost less than before, the money is generally considered to be used more efficiently: The programme supply has become more focused, and there is no longer one group of students all following the same classes. At the same time, collaboration within medical schools has been enhanced. In Basel for example classes from dental medicine, which so far have been separated but with the same content, are now taught together with students from other majors. All these changes require a better knowledge and management of human and financial resources.

The introduction of the Bachelor degree might be seen as inefficient, since students leaving university after their Bachelor have benefited from a very expensive education, but will not be allowed to work as physicians. The interviewed experts, however, did not raise a concern regarding the expensiveness

of this system. On the contrary, it was stated that there has always been a drop-out rate in medical education, and with the new model students can quit their studies before completion with a valid degree. The experts estimate, however, that 95% of the students will complete their Bachelor degree with the Masters.

5. Conclusion

This case study gives an overview on a case of successful introduction of the Bologna requirements in medical education. In this concluding paragraph, we address some central elements of the development of the Bologna model for medical education in Switzerland and highlight strong points of this case. For other countries introducing the Bologna requirements in medical education this is a case for good practice, an illustrative model for medical education in other European countries. Collaboration on the national level and open-mindedness regarding flexibility and possible outcomes of medical education were important conditions to the introduction of a new model for medical education.

It appears that the requirement to implement the Bologna declaration in medical education in Switzerland came on the right moment. Reforms regarding the content and teaching, learning and evaluation methods, starting in the mid-1990s, had already been implemented. With the Swiss Catalogue of Learning Objectives for Undergraduate Medical Training, competence-based learning had already been introduced. The federal legislation on medical professions was to be adapted to the actual needs of society. National coordination and collaboration had already been established. The ground was prepared for the Bologna reform.

As mentioned in the introduction, the element of the Bologna requirements that is generally seen as the most problematic for medical education is the two-cycle structure with BA/MA-degrees. In Switzerland, the two-cycle structure is, in all disciplines, generally implemented as a 180 ECTS credits Bachelor degree and a 90-120 ECTS credits Masters, thus a five-year 3+2 model. This seemed incompatible with the traditional education in medicine and the European regulations which require six years of integrated training.

The Swiss answer to this perceived incompatibility was the introduction of a 3+2 model with an additional mandatory +1 (clinical electives) for those students who want to work as physicians. A Bachelor degree is introduced, which opens for new possibilities of employment in health-related professions. In a relatively short time, the interfaculty commission SMIFK was able to elaborate a model which fits the Swiss legislation, the requirements of medical education and those of the Bologna reform. This model introduces flexibility in learning paths: it allows students to choose among different majors and Masters. The individual choices are documented in a diploma supplement, and study load is calculated corresponding to the ECTS system. The introduction of majors and specialised Masters allows the medical faculties to focus on their areas of expertise, to become competence centres in these areas, to build a strong profile in research and teaching. Students have therefore the possibility to choose their study place according to their interests. With a mutual recognition of Bachelor degrees among all Swiss medical faculties, mobility after the Bachelor degree is facilitated. Mobility inside one university is likewise enhanced: a student can choose his/her major also in other faculties, if there are agreements among the faculties.

With the new system, medical education has no longer one clearly defined output. The students can tailor their own education according to their interests and needs. Medical education does no longer automatically lead to the profession of a medical practitioner, but opens also ways to other professions in the broader area of health. However, it is estimated that a huge majority will choose the “physician track”, which after five years of study plus one year of clinical electives gives access to the Federal examination, the entrance ticket to the medical profession and mandatory further education.

The ongoing discussion in Switzerland also shows that it is possible to find solutions to the question “what to do with Bachelor graduates in medicine”. It is clear that Bachelor degree holders are not allowed to work as physicians, but many other possibilities have already been identified. It remains to see how the labour market will respond to this new degree. The introduction of this degree is also seen as a chance for those who otherwise would quit their studies without a valid degree – there has always been a certain drop-out rate in medical education.

An important conclusion, underlined by the actors in the field, is that it is feasible to implement the requirements of the Bologna process in medical education. Contrary to the general view that these requirements are inapplicable to medical education, within two years the medical faculties in Switzerland have been able to propose and start the implementation of a model that fulfils the requirements of the Bologna process and the corresponding curriculum reforms and, at the same time, meets the European directives and the federal legislation regarding medical education.

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Case study: The Bologna reforms in German engineering education¹

1. Introduction

This case study presents the transition of German engineering education to the Bachelor-Masters² degree structure and related curricular reforms, the debates and issues involved, and first indications of possible impacts. It is meant as an exemplary analysis of what the Bologna reforms can imply for the field of engineering education in Europe, given the characteristics of this area.

The German case was chosen for three main reasons. First, German engineering in general and engineering education in particular have a world-class reputation and are as such an example of good practice in Europe. German engineering makes a key contribution to the German and European economy and is one of the factors immediately contributing to their competitiveness and thus the Lisbon agenda. It is therefore of high relevance to understand how the quality of engineering education is impacted upon by the Bologna reforms, and to ensure that these serve to further strengthen rather than weaken the field. Second, a characteristic feature of German engineering education – that it has traditionally been taught in parallel long-cycle university and short-cycle non-university higher education (at *Fachhochschulen*)³ – is shared by many European countries, so the German case can be used to study the issues involved in moving such a system to a consecutive two-cycle degree structure encompassing both institutional types. Third, German higher education (HE) policy sticks closely to the Bologna ideals in one important respect: It is mandatory for universities to design Bachelor degrees that are relevant to the labour market. Even more strictly, regulations in Germany require all Bachelor degrees to “qualify for a profession” (*berufsqualifizierend*). Thus the German case lends itself to studying what this implies for university curricula, the relationship between institutional types, and the dynamics of interaction between HE and the labour market.

The case study is based on three main empirical sources: (1) statistical data from the Federal Statistics Office (*Statistisches Bundesamt*) and the German Rectors' Conference (HRK) for the quantitative side; (2) document and internet analysis of relevant policy statements of actors and existing studies and surveys on the topic; and (3) 17 interviews with representatives of the disciplinary associations in engineering from universities and *Fachhochschulen*, reform pioneers in individual HEIs, actors in the accreditation system, and from a professional association.⁴

The case study is structured as follows: In section 2, the set-up of the German HE system and its main actors are described and an overview of Bologna reforms at national level is provided. Section 3 contains three parts. First, the field of engineering in Germany is presented: Which disciplines it encompasses, how it is organised (the most important disciplinary and professional associations are introduced), and some numbers are given on students, new entrants and graduates. Second, the transition to the two-cycle degree structure in this area of study is presented in numerical terms. Third, the Bologna reforms in engineering are presented in qualitative terms along the five dimensions to be covered (two-cycle degrees, flexible learning paths, competence-based learning, recognition, and mobility). The reform efforts and related debates are presented in depth. Section 4

¹ This case study was written by Johanna Witte with support from Gösta Gabriel

² While the degrees are called „Bachelor“ and „Master“ (without ‚s‘) in Germany, in this study I use the most common English term, „Masters“ degree.

³ The term original German term ‘Fachhochschulen’ is used in Italics throughout the text as it is difficult to translate. The official translation used by the German authorities is ‘universities of applied sciences’.

⁴ On behalf of the professional associations VDE, VDI, VDMA und ZVEI, HIS Hochschul-Informationssystem in Hannover has been commissioned a study on experiences with the implementation of Bachelor degrees in engineering, based on a survey among professors in civil and electrical engineering. The survey will take place in Spring 2007 and the results are expected in August 2007.

covers perceptions and expectations of impacts of the reforms and some quantitative data on developments in the last few years. Finally, in section 5 the main findings are summarised, conclusions drawn and lessons for other countries highlighted. At the end of the case studies, a list of interviewees, references, and the interview guidelines are included.

2. National context⁵

Under the federal organisation of the German political system, responsibility for HE is shared between the national level and the 16 *Länder* (states). The recent reform of federalism in 2006 has further reduced the powers of the national level and given the *Länder* even more authority.⁶ This case study concentrates on developments before this reform.

Already in this period, the federal government had only limited framework competence, exercised by the national ministry for education and research (BMBWF, henceforth referred to as federal ministry). The most important competence was to propose amendments of the Federal Framework Act for Higher Education (*Hochschulrahmengesetz*, HRG). However, the legal provisions had to be translated into the 16 *Länder* HE laws in order to have an immediate effect upon higher education institutions (HEIs). The *Länder* tended to do so at different speeds and with variation, so that only trends and tendencies can be described when summarising the overall national situation. The Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* (*Kultusministerkonferenz*, KMK), serves to achieve a certain degree of coherence between the different *Länder's* HE policies. Therefore, decisions by the federal ministry and by the Standing Conference of the Ministries of Education and Research of the *Länder* (KMK) are referred to whenever “national” decisions are mentioned. HEIs are represented at national level by the German Rectors’ Conference (*Hochschulrektorenkonferenz*, HRK). At discipline level, academics are organised in a range of academic subject networks (*Fakultätentage* and *Fachbereichstage*).

There are two main types of HEIs in Germany, universities and *Fachhochschulen*. Of the 259 HRK member institutions, 95 are universities and 117 are *Fachhochschulen*. Among the universities, 13 are technical universities (HRK 2006).⁷ The *Fachhochschulen* were created in the late 1960s, mostly from existing engineering colleges or business academies (*Ingenieurhochschulen*, *höhere Wirtschaftsfachschulen*) to cater for increasing student demand through applied degree programmes. They were to engage in applied research and maintain close links with the world of work and are therefore staffed with lecturers that hold doctorates and are practically experienced. Their teaching load is much higher than that of academic staff at universities and their salaries are generally lower. Different from original political intention, less than 30% students are enrolled in *Fachhochschulen* in Germany, 70% in universities. Out of about two million students, only 540,000 studied at *Fachhochschulen* in Winter semester 2005/6, 1.4 million at universities (Destatis 2006a, ZUS-01).

Universities offer research-oriented degree programmes up to the doctoral level. Their traditional first degrees were long integrated programmes leading directly to the Masters level (*Diplom*, *Magister*, *Staatsexamen*). *Fachhochschulen* traditionally offered professional education to a level located roughly between Bachelor and Masters (*Diplom (FH)*). The relationship between the two institutional types is far from clear. In official jargon, universities and *Fachhochschulen* have always been ‘different, but on a par’. In practice however, a status hierarchy between the institutions was never fully overcome. From their inception, the *Fachhochschulen* struggled for ‘equal opportunity’ with the university sector. This coincided with a general paradigm shift towards competition and market-based differentiation of individual HEIs over the legally-defined role description underlying the binary system (Müller-Böling, 2000). The *Fachhochschul* sector received some sympathy from the political and economic elites, as it stood for cost-effective education and training of some practical value (Rüttgers, 1997). Taken together, by 1998 it had become a widely-shared idea that the *Fachhochschul* sector should be

⁵ This section is largely based on Johanna Witte’s dissertation (Witte, 2006) as well as the German national report of the HRK.

⁶ The legal framework competence of the federal level has now been confined to access and degrees.

⁷ See www.hrk.de/de/hrk_auf_einen_blick/hrk_auf_einen_blick.php, retrieved 09 November 2006.

upgraded, permeability between the institutional types increased, vocational links of university education enhanced and the overcrowded universities unburdened (KMK, 1996; Wissenschaftsrat, 2000). This was therefore one of the aims pursued by the Bologna reforms in Germany.

The German Bologna-related reforms started even before the Sorbonne declaration, and independent from immediate European impulses, but gained additional momentum through the Bologna process. Important national aims of the Bologna-related reforms in Germany have been to decrease drop-out rates and study duration, and thus to achieve an earlier entry of graduates into the labour market. Of course, increasing the international attractiveness and competitiveness of German HE have also been important aims (Klemperer, Van der Wende, & Witte, 2002).

In 1998, Germany was one of the pioneers of the Bologna process when an amendment of the Federal Framework Law on HE (HRG) allowed HEIs to offer Bachelor and Masters programmes besides the traditional long first-cycle degrees "on a trial basis". In 2002 these programmes were rendered part of the regular degree supply, but

conversion to the two-cycle degree structure has not been made compulsory so far at national level. In some *Länder* HE laws, according legislation has been passed already (Baden-Württemberg, Bavaria, North-Rhine Westphalia, and Saarland), other *Länder* pursue a "softer" approach, working exclusively through persuasion, contract management, and lower-level regulation such as circular letters. In 2003, the *Länder* agreed in the KMK on the policy objective to implement the two-cycle system, preferably nation-wide, by 2010 – whilst allowing for exceptions in certain fields of studies (KMK 2003a). In spite of this patchy legal picture, it is taken for granted by almost all political actors that more or less full conversion will be achieved in most subjects by 2010.

The structure and curricular design of Bachelor and Masters degrees, with the Bachelor degree as a first degree "qualifying for the labour market", is laid down in the HRG and further specified in KMK guidelines (KMK 2003b). While the national regulatory framework allows for more options, the most common structure adopted by HEIs is 3+2 years (180+120 ECTS), while 3.5 +1.5 years (210+90 ECTS) is a common alternative at *Fachhochschulen*.

The KMK guidelines apply to nearly all subject areas, including engineering. Exceptions are law, teacher education, medicine, pharmacy, food chemistry (*Staatsexamen* programmes in the old system), and higher arts and music education. In higher art and music education as well as teacher training, special guidelines apply. In law and medical subjects, a discussion is still going on about if and how the two-cycle system can apply.

The majority of HEIs in Germany are in the process of adapting their programmes and curricula to the new degree structure. As of March 1st 2006, German HEIs offered 2.317 Bachelor and 1.777 Masters degrees. This means that 36% of all programmes (11.283) were either of Bachelor or Masters type. Taking into account that a converted *Diplom* or *Magister* programme from a university would generally yield about a Bachelor and a Masters programme (a *Diplom (FH)* from a *Fachhochschule* slightly less), this implies that about 18% of all programmes were offered in the two-cycle degree structure. 8% of students studied in these programmes in Winter semester 2004/05 (HRK 2006). So old and new degree structure currently still exist in parallel.

A couple of aspects stand out as special in the German translation of the Bologna reforms into national legislation: First, both universities and *Fachhochschulen* can offer the same degrees (Bachelor and Masters) and degree titles (B.A./M.A., B.Sc./M.Sc., B.Eng./M.Eng., or LL.B./LL.M.). Second, the Bachelor degree from both universities and *Fachhochschulen* is conceived as an entry point to the labour market, and are legally defined as "qualifying for a profession". As a rule of thumb, it is expected and politically desired that about 50% of Bachelor graduates enter the labour market – also those from universities. Related to this, access to Masters programmes is nearly always selective, i.e. it requires more than just a passed Bachelors degree. Third, HEIs were given quite some leeway in deciding upon the length of programmes, but nevertheless most have chosen the same pattern (see above). Fourth, a common quality assurance system for universities and *Fachhochschulen* has been set up in the form of a competitive programme accreditation system with one national accreditation

council (*Akkreditierungsrat*) and six accreditation agencies for universities and *Fachhochschulen* to choose from, all of them privately-run as not-for-profit organisations. Fifth, modularisation and ECTS, as well as the introduction of a diploma supplement have been made legally compulsory for all Bachelor and Masters programmes. The regulations on modularisation and ECTS also include the introduction of competence-based learning. This means that learning outcomes and competencies have to be defined for each module. (See national report for more information on national developments in dimensions such as competence-based learning, flexible learning paths, recognition, and mobility.)

3. Developments in the area of engineering

3.1. General overview and facts

Engineering (*Ingenieurwissenschaften*) is a vast area of studies in Germany, encompassing a great number of disciplines. According to the Federal Statistical Office, engineering includes mining/metallurgy, mechanical engineering/process engineering, electrical engineering, traffic engineering, spatial planning, civil engineering, surveying and mapping, and architecture/interior design (Destatis 2006a, ZUS-10). Information technology/computing sciences is not formally included in the federal statistics on engineering due to its origin in mathematics, but is very closely related in reality and often considered part of engineering in practice. Similarly, industrial engineering is not included by closely related. On the other hand, architecture and interior design, which are included in these statistics, are not always considered part of engineering in practice as these subjects have a hybrid position between engineering, arts and social sciences. Engineering is offered both at universities and *Fachhochschulen*.

At universities, the field is organised in four disciplinary associations (*Fakultätentage*): (1) Civil engineering and surveying and mapping, (2) electrical and information engineering, (3) mechanical and process engineering, and (4) information technology/computing sciences.⁸ The latter is included in a newly-founded umbrella organisation of the engineering associations called "4ING", while architecture is not included in this network.⁹

At *Fachhochschulen*, relevant disciplinary associations (called *Fachbereichstage*) are: (1) architecture, (2) mechanical engineering, (3) chemical engineering, (4) civil engineering, (5) process engineering, (6) industrial engineering, and (7) physical technology. The views of these disciplinary associations are important for the transition to the Bachelor-Masters structure and curricular reform as it is here that opinion formation and discussion among academics in the disciplines takes place. Some of them have issued formal position statements on the topic.

A characteristic feature of the German engineering discipline/profession is the strong consensus orientation among academics/professionals, which have always aimed at agreeing upon common standards of degree programmes within one institutional type across Germany. Before the introduction of Bachelor and Masters programmes, these standards were laid down in national examination frameworks (*Rahmenprüfungsordnungen*, RPOs). These were ratified in a joint commission of the KMK and the HRK in a lengthy negotiation process. They were a two-edged sword: On the one hand, they allowed for a high degree of horizontal mobility within the same institutional type within Germany. For example, the *Vordiplom* after two years was generally recognised among institutions as a mobility point. On the other hand, the RPOs were increasingly perceived as stifling innovation and preventing a desirable degree of curricular diversity. Engineering departments which wanted to try out something new could not do so because they had to follow the RPOs, which laid down numbers of hours per subject in detail.

⁸ See www.hrk.de/de/adressen_und_links/159_1450.php

⁹ See <http://idw-online.de/pages/de/news169109>

On the employer side, there are several important professional associations in the engineering field which, to different extent, also contribute to the debate on curricular reform through position statements: the Association of German Engineers (*Verein Deutscher Ingenieure*, VDI), the Association of Electrical Engineering, Electronics, and Information Technology (*Verband der Elektrotechnik, Elektronik und Informationstechnik*, VDE), the Association of German Mechanical Engineering and Plant Construction (*Verband Deutscher Maschinen- und Anlagenbau*, VDMA), and the Association of Electrical Engineering and Industry (*Zentralverband Elektrotechnik und Elektronikindustrie*, ZVEI). For information technology and computing sciences, the Informatics Society (*Gesellschaft für Informatik*, GI) and the German Association for Information Technology, Telecommunications and New Media (*Bundesverband Informationswirtschaft, Telekommunikation und neue Medien*, BITKOM) play a role. Furthermore two general employer associations have an impact on the debate in the field, the BDA (*Bundesvereinigung Deutscher Arbeitgeberverbände*) and the BDI (*Bundesverband der deutschen Industrie*).

Engineering is one of the most popular fields of study in Germany. 326,500 students are enrolled in these programmes, a share of 16.4% in the total of 1,985,800 students.¹⁰ Women are underrepresented, with only 20% as compared to an average of 48% of all students (Destatis 2006a: ZUS-06, Winter semester 2005/06). Of these engineering students, 41.2% study at universities (134,400) and 58.3% at *Fachhochschulen* (195,500) (Destatis 2006a, TAB-02HA, Winter semester 2005/06).

The most frequently-studied degree programmes in engineering both at universities and *Fachhochschulen* are, in this order, mechanical and process engineering (53,000 students at universities/83,000 at *Fachhochschulen*), electrical engineering (29,500/40,200), and architecture and interior design (15,600/22,300). Together, these three subjects cater for about 75% of all engineering students (Destatis 2006a, TAB-02HA, Winter semester 2005/06).¹¹ The percentage of international students in engineering is above average (12.5%) with 16% in Winter semester 2005/06 (Destatis 2006a, ZUS-06). In 2005, 39,407 students graduated from engineering programmes in Germany (Destatis 2006b, ZUS-02).

3.2. Introduction of Bachelor and Masters programmes: Some facts

Sixty percent of the engineering programmes offered by German HEIs in Winter semester 2006/07 were already either Bachelor or Masters programmes (818 Bachelor and 554 Masters programmes in a total of 2,244 degree programmes in engineering). If one takes into account that at universities, each traditional *Diplom* programme yields at least a Bachelor and a Masters programme (at *Fachhochschulen* slightly less), this roughly means that about a third of all programmes had made the transition (see table). About half of these programmes were accredited in October 2006 (Akkreditierungsrat 2006). Compared to other subjects, engineering is rather fast in making the transition to the new degree structure.¹² This is partly due to the fact that many engineering programmes are offered at *Fachhochschulen*, and *Fachhochschulen* are markedly faster than universities in making the transition (ibid: 9), as can be seen from the following table.

¹⁰ The share of new entrants in engineering as compared to all new entrants was 17.3% in the academic year 2005/06 (*Fachsemester*) (Destatis 2006a, ZUS-07). Women were however underrepresented, with only 20% as compared to an average of 49% of all entrants (ibid).

¹¹ As computing sciences are not included in the Federal Statistics on Engineering, the numbers are not mentioned here, but in fact it is among the most popular fields of study. 72,845 students at universities and 55,893 at *Fachhochschulen* were enrolled in this field in Winter semester 2005/06 (Destatis 2006, TAB-02HA).

¹² The average share of Bachelor and Masters programmes across subject areas is 36% (HRK 2006).

Table 1: Bachelor and Masters programmes in engineering

Type of HEI	Total programme supply	Bachelor	Masters	Bachelor and Masters	% of total
Universities	833	184	231	415	49,8
Arts and Music HEIs	15	1	2	3	20,0
<i>Fachhochschulen</i>	1.396	633	321	954	68,3
Total	2.244	818	554	1.372	61,1

Source: HRK-Hochschulkompass, retrieved 28 November 2006.

The comparably large share of Bachelor and Masters programmes in the overall programme supply in engineering is however slightly misleading as the share of students studying in the new programmes is much lower. Only 7,770 new entrants or 9% of all new entrants into engineering programmes enrolled in Bachelor programmes in Winter semester 2004/05 (Destatis 2005a: 2, Destatis 2006a, ZUS-07). This compares to a total share of 14% of new entrants in Bachelor programmes among all new entrants in first degrees across all fields of study (HRK 2006:16). 2,120 new entrants enrolled for Masters programmes in engineering in the same year (Destatis 2005a: 2).

The total share of Bachelor and Masters students in all engineering students was 9.4% in Winter semester 2004/05 (Destatis 2005a:2). There is however a sharply increasing trend in enrolment in the new degrees, so that nearly full coverage can be expected by the year 2010. For example, the number of Bachelor students in Engineering has increased tenfold in the last five years (from 1,809 in Winter semester 2000/2001 to 18,504 in Winter semester 2004/05). The number of Masters students has increased fourfold in the same period (from 2,843 to 11,403) (HRK 2006:19ff.).

The small enrolment numbers in conjunction with the comparatively large share of programmes means that teacher-student ratios in Bachelor and Masters programmes are quite good at the moment. The number of graduates from Bachelor and Masters degree programmes starts already being significant: In 2005, 1,089 student graduated with a Bachelor degree in engineering and 2,597 with a Masters degree – yielding more than 9% of all engineering graduates in that year (Destatis 2006b, ZUS-04).

While the dominant degree structure in engineering at universities currently is 6+4 (180+120 ECTS), at *Fachhochschulen* programmes are about equally distributed across the 3+2 and the 3.5+1.5 models (HRK 2006: 36-37). The discussions about the appropriate degree length and structure are however still in flux (see below) so that this represents but a snapshot in Summer semester 2006 – there are indications that the general trend at both universities and *Fachhochschulen* goes more into the direction of the 3.5+1.5 model.

3.3. Bologna-related developments and discussions

Two-cycle structure

The motivations for and views on the two-cycle degree structure differ a lot between universities and *Fachhochschulen*, and so do the implementation patterns. It is important to understand the inherited system, in which universities catered for the market demand for degrees at Masters level through long integrated first-cycle programmes and *Fachhochschulen* for degrees slightly above the Bachelor level through shorter first-cycle programmes.

While university Masters graduates were prepared for working in research and product development, graduates from *Fachhochschulen* were prepared to work in more applied fields in production and supply. This division of tasks was overall in balance with employer demands as well as with existing pay scales and career tracks in firms. It resulted in two parallel tracks from the beginning with little permeability at higher levels. It was also reflected in two different engineering-specific degree titles, the *Diplom-Ingenieur* from universities and the *Diplom-Ingenieur (FH)* from *Fachhochschulen*, which

were well-known internationally and stood for the quality and specific features of German engineering education.

Starting from this initial situation, few engineering departments at universities had intrinsic motives to move to the two-cycle degree structure and to abandon the traditional degree title. They found the existing integrated long first-cycle degrees of 4.5 years scheduled length the most efficient and direct way to arrive at a research-oriented Masters-level degree. They considered the curricular structure and sequence of these programmes the particular strength on which the reputation of German engineering degrees was based. This holds particularly for two elements: First, two initial years of strong foundations in mathematics and sciences as prerequisites for later application to engineering problems; second, the requirement of several months of practical experience in firms, even if it was not always formally part of the curriculum and students were often expected to organise it themselves.

The introduction of a Bachelor degree qualifying for the labour market was considered problematic, first because most engineering professors did not consider it part of their task to educate students at this level (to the contrary, having too many university students leave as this level is seen by many professors as detrimental to the competitiveness of German industry), second because arriving at such a degree in 3 to 3.5 years time made it necessary to reorganise the curriculum in the first years and adjust what was seen as the particular strength of German engineering education. An issue that was frequently brought up in the interviews was that the “voluntary abolition of a success model” was also met with incomprehension in the US, expressed by comments from US colleagues such as: “Why do you destroy what is good and accepted in industry and abroad?” Furthermore some US American engineering department currently move to integrated first-cycle Masters degrees. These views and developments from abroad confirmed the opinion of many engineering academics in Germany.

Legally, departments would have had the choice to move to a 4+1 model which would have given them more time to fit in curricular elements into the Bachelor degree. But as the semester structure was common through the German HE system, most departments found it unthinkable to design a serious Masters degree of only one-year length. Therefore, the 3+2 model was commonly chosen by the early adopters (see numbers given above). While it is not yet visible in the statistics, several disciplinary associations have recently recommended to adopt the 3.5+1.5 model in order to maintain a practical phase, often in combination with the Bachelor thesis, so both the 3+2 and the 3.5+1.5 models will come to exist at universities in the future (e.g. FTMV 2004b). The dominant models will probably vary between the engineering disciplines: While mechanical and process engineering (FTMV) as well as electrical engineering and information technology (FTEI) departments largely adhere to the 3.5+1.5 model, the disciplinary associations of civil engineering (FTBG) and information technology (FTI) recommend the 3+2 structure. Sometimes disciplinary preferences also conflict with *Länder* policies or policies of individual HEIs, so uniform patterns are not to be expected any time soon.

One way chosen to adjust the curriculum for the two-cycle structure at universities was condense the basic courses in mathematics and sciences in the first years to make room for earlier specialisation, which is commonly seen as needed to fulfil the requirement for the Bachelor degree to qualify for a profession. This condensation is also one solution to make room for the teaching of key competencies and skills (another “Bologna” requirement), unless a way is found to integrate it into the teaching of disciplinary content, another option pursued by departments. The concern is that the reduced theoretical basis will be felt as a lack in Masters programmes when there is a need to draw on this basis, and that the earlier specialisation will allow students less choice for their Masters level programmes. This explains why some engineering disciplines prefer the 3.5-year Bachelor, which gives somewhat more room for the various programme components. In a 3.5-year programme, it is possible to leave the traditional first two years of mathematical and scientific foundations largely untouched, devote the third year to specialisation and deepening and keep the last semester for a practical experience in combination with the final thesis. Another option is seen by the inclusion of so called “advanced fundamentals” within the Masters-level courses. Engineering departments at universities make these adjustments to fulfil the legal and accreditation requirements for Bachelor degrees, but most are not convinced that these changes will lead to improvements. To the contrary, a

frequently voiced attitude of interviewed university professors was that one should attempt to minimise the losses in the transition, and “make the best of it”.

In this context it seems adequate to mention the position of the “TU9” Consortium of German Institutes of Technology (www.tu-berlin.de/presse/doku/tu9/), an outspoken association of the RWTH Aachen, the TU Berlin, the TU Darmstadt, TU Dresden, Universität Hannover, Universität Karlsruhe, TU München and Universität Stuttgart. These nine technical universities have assumed a particularly profiled position in the debate on the transition to the Bachelor-Masters structure: They hold that the Masters degree should remain the normative degree (*Regelabschluss*) for any university student of engineering, that the Bachelor degree should not qualify for the labour market but function as a mobility point instead, and that the different traditional profiles of engineering education at *Fachhochschulen* and universities – more application-oriented and more research-oriented – should be maintained (TU9 2004a, 2006). Furthermore they decided to fully recognise each others Bachelor degrees (with the indirect implication that this does not necessarily hold for graduates from other German universities). The TU9 universities opted for the 3+2-model. They voiced opposition against the current obligation of programme accreditation and demanded this to be replaced by institutional evaluation with a more nuanced assessment of quality oriented more towards international standards, not just the certification of minimum standards (TU9 2004b).

Individual TU9 members also demanded to maintain the established degree title “*Diplom-Ingenieur*”, a position that finds much sympathy within the academic community of engineers (TUM 2004). Under the current legal framework, universities and *Fachhochschulen* alike have the choice between the degree titles B.Sc./M.Sc. and B.Eng./M.Eng, but cannot maintain the traditional title. Initially, most universities opted for the B.Sc./M.Sc. to signal their scientific orientation and many *Fachhochschulen* aimed for same to follow the role model of the universities. The degree titles were thus used by universities to re-establish existing delineations towards *Fachhochschulen*. This currently changes as more and more universities and *Fachhochschulen* understand that the B.Eng. and M.Eng. are established degree titles for engineers in an international context and internationally-oriented HEIs are well-advised to use them following student demand.

Box 1: The pioneering models of TU Darmstadt and BTU Cottbus

At TU Darmstadt, the BSc and MSc programme in mechanical and process engineering is among the outstanding examples of innovative curricular reform in relation to the change of degree structure, and characteristic features of this programme were later adopted by the entire university. What is special about this programme is that the transition to the two-cycle model was used as an opportunity to increase the research-intensity and problem-orientation of the programme particularly in the first years, thereby making the programme more motivating and involving for students and further increasing the level and quality of the education. This was achieved by restructuring the subject content to be conveyed in the first years around well-organised research projects which allow students to acquire the skills, competencies and theoretical and technical knowledge to a greater degree than before “by doing”. This was supported by overarching university policies aiming at the full conversion to the 6+4-structure throughout the institution (see Hampe 2006 for more information.)

At BTU Cottbus, the early and comprehensive implementation of the Bachelor and Masters structure was chosen as an institutional strategy to further enhance the profile of an institution with 25% international students. A common framework with defining features of a Bachelor-Masters programmes at the university was agreed, ensuring the smooth and realistic planning of curricula and good academic student support and tutoring in order to shorten time to degree and reduce drop-out rates. The 6+4-model was agreed across the board. While mobility policies are a key element of the institutional strategy, the experience at BTU was that the transition to the Bachelor-Masters structure as such did not ease mobility. This shall now be counteracted by even closer international partnerships.

At *Fachhochschulen*, the situation looks very different. Here, the new possibility to offer Masters degrees and thereby increase the competitive position and status vis-à-vis universities acted as a prime incentive to move to the new degree structure. It must be said however, that *Fachhochschulen* did not foresee the full consequences when they engaged in the reform process. They regarded their traditional degree *Diplom-Ingenieur (FH)*, which had a scheduled length of 4 years in Southern-German and 3.5 years in some Northern-German *Fachhochschulen*, as between the Bachelor and Masters level. Also semantically, this qualification was very close to the university degree at Masters level, the *Diplom-Ingenieur* (without the addition “FH” in brackets).

Therefore, in the pioneering phase before it was clear that the traditional degrees would be completely replaced by the two-cycle model, the *Fachhochschulen* installed Masters degrees above and Bachelor degrees below the level of the *Diplom-Ingenieur (FH)*, maintaining the latter. When it became clear that they would have to replace the *Diplom-Ingenieur (FH)* by the Bachelor degree, their main strive was to maintain the level of the *Diplom-Ingenieur (FH)* in spite of the shortening of scheduled time to degree.

A defining element of German engineering education at *Fachhochschulen* were the practical semesters spent in firms as integral part of the curriculum, two in the South of Germany (yielding a programme length of 4 years) and only one in some institutions in the North and East of Germany (3.5 years). The first of the two practical semesters in the South was a “blue collar” internship, while the second one (and the only one in some institutions in the North and East) engaged students in more qualified project work, often directly linked to their final thesis.

The main curricular adjustment to arrive at a Bachelor degree was the cutting of one internship out of the curriculum, yielding a 3.5-year Bachelor degree in the South and a 3-year Bachelor degree in those institutions in the North and East that had previously offered a 3.5-year degree. In these institutions, the practical semester was instead to be passed by students in their holiday time and besides their studies, spread over several years. However, initial experience with this model indicates difficulties as students find it hard to find firms who agree on the necessary arrangements. For firms it seems more attractive to have students for a full semester full-time, rather than a few months here and there or besides their studies. Therefore, it might well be the case that the 3.5-year Bachelor will emerge as the dominant model at *Fachhochschulen* throughout the country. In any case, *Fachhochschulen* regard it necessary to maintain six full theory semesters (three years); this is perceived as a prerequisite for European recognition.

In sum, the shortening of *Fachhochschul* degrees as part of the transition to the two-cycle model is in part a result of path dependence, in part it is owned to the strive of the *Fachhochschulen* for comparability with universities. Further curricular changes at *Fachhochschulen* besides the cutting on the practical parts are a revision of the curriculum, similar to the universities, to make room for generic and key skills and competencies by condensing the theoretical and general parts.

The new possibility to offer research-based Masters programmes is both a strong incentive and a challenge for *Fachhochschulen*, whose professors have weekly teaching obligations of around 18 hours and do not have research assistants. Nevertheless they take up this challenge with great enthusiasm, as the opportunity to use Masters theses to advance research agendas and to involve Masters students as research assistants opens up new development avenues for them. As Bachelor graduates from *Fachhochschulen* are in high demand from the labour market, part-time Masters seem to emerge as a popular model.

Box 2: The pioneering models of Hochschule Mannheim and FH München

Hochschule Mannheim is an example for an institution that sensed the implications of the Bologna process even before its European beginning. Already in 1998, the Hochschule Mannheim participated in a pilot project of the federal ministry and the German Academic Exchange Service (DAAD) to introduce Bachelor and Masters degrees. The 7+3-model it chose became trend-setting for Southern Germany, and was later adopted by most *Fachhochschulen* in Baden-Württemberg and obligatory in Bavaria. The board pursued an intense and comprehensive communication strategy involving all departments in the process to achieve a common view of the advantages and defining features of the new degree model. Importantly, the HEI used the transition to Bachelor and Masters to further strengthen its internationalisation strategy with strong partnerships with universities from all over the world, many incoming students from Asia, and 24% international students. 1/3 of students spend a semester abroad during their studies. In some programmes such as in electrical engineering and information technology, international students are taught in English in the first year and successfully prepared to continue their studies in German thereafter. All this is achieved through intense personnel development of the entire staff. Through intense stakeholder dialogue the model of the Hochschule Mannheim has gained full acceptance with students and employers alike. The HEI is also engaged in a number of partnerships with German universities in both research and education.

FH München is another example which has started the transition to the two-cycle structure early on, with the first reform discussions beginning in 1997 in the department of electrical engineering and information technology. Here too the motivation was that as an early adopter, it would be possible to shape the reforms. The comprehensive reform of the entire curriculum including the introduction of new modes of teaching and learning, a closer integration of theory and application, and a streamlining to delete redundancies was a demanding process involving a team of academics for several years. After some readjustments it resulted in a much improved curriculum. A success model in this department are the part-time Masters which allow Bachelor graduates to stay in touch with academia and help the department to develop its research-intensity. The management of FH München pursued a decentralised approach allowing the timing of the transition and the models adopted to vary between the departments, but ensuring institution-wide compatibility through measures such as standard sizes for modules.

Regarding the position of professional and employer associations towards the Bachelor-Masters structure in engineering, a somewhat nuanced picture emerges. While the initiative for the reform did not come from industry, most associations today are in favour of the transition to the two-cycle model and make detailed recommendations how the new degrees should be designed (BDA & Stifterverband 2006: 2; BDI 2005: 2; ZVEI 2004: 4, VDI 2004, VDMA 2005). BDI notes that maintaining the *Diplom* would endanger the recognition of the new degrees (BDI 2005: 3). An exception is the VDE, which thinks that a long transition period is needed, wants to keep the *Diplom* besides Bachelor and Masters degree, and wants to maintain integrated long one-cycle master programmes (VDE 2004: 8-10). Some *Fachhochschulen* and *Berufsakademien* (non-HE tertiary education institutions existing in some *Länder*) offer a combination of academic studies and in-firm-training, the so called “dual programmes” (*Duales Studium*). ZVEI suggests to extend these work-based programmes to further *Fachhochschulen* and also to universities (ZVEI 2004: 8).

Flexible learning paths

A key issue regarding flexible learning paths in German HE is the transition from *Fachhochschulen* to universities, certainly in engineering which is taught at both institutional types. Access of excellent graduates from *Fachhochschulen* to doctoral studies at universities has always been possible on a case-by-case basis, as have been arrangements for the recognition of individual study achievements when a student wanted to change from a *Fachhochschule* to a university in the course of her studies. However, the different profiles of universities and *Fachhochschulen* – more research- versus more application-oriented – have always constituted a barrier to easy recognition. In the eyes of university academics (and many academics from *Fachhochschulen* would agree), graduates from *Fachhochschulen* have lacked

the theoretical prerequisites even if some of their courses carried the same names, and therefore individual requirements to make up for these gaps have been the norm.

With the transition to a common two-cycle degree structure at universities and *Fachhochschulen*, the expectation is that transition will be more easy and common. Legally, universities are not allowed to discriminate against Bachelor graduates from *Fachhochschulen* in their requirements for access to Masters degrees. In other words, while universities are not obliged to admit each single Bachelor graduate from a *Fachhochschule*, they cannot reject them purely on the basis of the institutional type at which they obtained their degree. It is however too early to observe changed practice. Several disciplinary associations have voiced the intention to create more structured transition paths from *Fachhochschulen* to universities (e.g. FTMV 2004a). An innovative practice can be observed in process and chemical engineering, where a common curricular framework has been agreed between the disciplinary associations of universities and *Fachhochschulen*, preparing the ground for easier transition in the future (VDI-GVC 2004).

As regards access to engineering programmes at HEIs with other than the common secondary school-leaving examinations (*Abitur* for universities and *Fachhochschulreife* for *Fachhochschulen*, as well as *Fachgebundene Hochschulreife* for particular subjects at universities), there are a couple of legally-defined possibilities enshrined in *Länder* law, some of them also varying among the 16 *Länder*. The first is that a degree from a *Fachhochschule* has always qualified for entry into a first degree programme at universities, i.e. substituting for the *Abitur*. Furthermore access to HE is gained by a *Meister*, a senior vocational qualification requiring three years of vocational training, several years of experience, and additional high-level training and the passing of an according examination (except for the *Land* Bavaria, where it only enables to study at *Fachhochschulen*) and as a state-certified technician (in the *Länder* Berlin and Lower Saxony). However this access generally limited to the according subject. An in-firm-training plus several years of work experience offers the same restricted right of entry. This non-standard access is mostly linked to a qualifying examination by the receiving HEI. While these possibilities for transition from the vocational to the HE system exist, they are rarely used in practice, and the Bologna reforms did not change this. They are also regarded critically by academics, because is hardly possible for candidates with a vocational background to fulfil the academic demands regarding mathematical and scientific knowledge in engineering.

Only in the *Land* Hessen, entry criteria to HE were changed in relation to the introduction of a two-cycle system. The *Fachhochschulreife* which traditionally only qualified for entry into *Fachhochschulen* now qualifies for entry into Bachelor programmes at universities as well. This is also seen as problematic by academics from universities who doubt whether candidates can fulfil the prerequisites in mathematics and science or whether the new regulation will trigger false hopes and just increase drop-out rates. Some of the professional associations of the engineering sector call for the general introduction of special qualifying examinations at the beginning of every cycle (VDE 2004). This is also a reaction to the perceived poor level of school leavers. 80% of the professors of electro and information technology see deficits in mathematics and science, a problem shared by engineering educators across Europe (Smiljanic 2006).

Some pioneering HEIs make special efforts to increase the flexibility of learning paths for students beyond these general possibilities. For example, the FH München cooperates closely with non-tertiary schools such as *Fachakademien* to ensure the transition of about 10% of their best graduates. FH München also participates in the network "Greater Munich area" working towards the recognition of modules of Masters programmes throughout the network (see also "recognition" for related issues).

Competence-based learning

The issue of competence-based learning can be discussed in several ways. At a basic level, it can be said the move to competence-based learning is formally ensured as it is an obligatory element of the compulsory introduction of modularisation and ECTS: Learning outcomes in terms of competences have to be defined for each module and laid down in "module handbooks" (*Modulhandbücher*) as part of the accreditation requirements.

Several responses to this requirement emerged from the interviews. On the one hand, engineering education leading to a professional qualification, the competence-orientation is traditionally strong, so most academics experienced the process of defining learning outcomes and competencies as one of “making explicit and reflect upon what was already there.” The majority of interviewees found this a useful exercise, even though the relevance in practice remains yet to be seen, as the immediate outcome is the existence of module handbooks which are not necessarily used in practice. So in fact, the process and the debates it triggered among academics on curricular design seem to constitute the most positive reform effect in this area. Many report that the exercise led to a targeted „cleaning up“ (*Entrümpelung, Entschlackung*) of curricula which was experienced as useful, even if the involved processes were painful for those professors who had to give up subjects in the curriculum. This need to give up subjects partly came from increased attention to coherence, avoidance of redundancy, and better orientation towards overall learning outcomes, but it also resulted from the need to make room for key skills (*Schlüsselkompetenzen*) or generic competencies.

The inclusion of these key skills in the curriculum is another accreditation requirement, stemming from the need to make the Bachelor degree relevant to the labour market. Departments deal with this demand differently: Some teach the key skills in separate courses, others redesign the teaching and learning modes to integrate the teaching of key skills into the teaching of subject content through project and group work. Both approaches are in line with accreditation requirements.

It should not be concealed that some academics still have problems with the outcome-oriented paradigm as they do not see the added value of defining curricula starting from learning outcomes and qualification goals instead of starting from subject knowledge agreed as necessary within the disciplinary community. Therefore, one of the existing ways to deal with the new requirements is to construct learning outcomes ex-post from the composition of subject knowledge.

Recognition

Recognition of study achievements from the same institutional type within Germany has traditionally been one of the very strong points of engineering education in Germany. A characteristic feature of the disciplinary associations of both universities and *Fachhochschulen* is that they have always aimed for a high degree of national consensus on the contents and structure of the curriculum, formerly laid down in national curriculum frameworks (*Rahmenprüfungsordnungen, RPOs*). They are currently working hard to achieve something similar for the Bachelor and Masters degrees. In line with the demands of the European qualifications framework, they however try to formulate these in a more outcomes-oriented way, and to leave more room for variation. Also, they are now recommendations, not guidelines to be strictly followed. These changes are being pushed by the accreditation system.

In few disciplines, cooperation on curricular development across institutional types and across national borders has started. For example, the disciplinary association of process and chemical engineering together with the professional association VDI have agreed on curricular profiles for Bachelor and Masters programmes at universities and *Fachhochschulen*, integrating the relevant Austrian associations into their work (VDI-GVC 2004).

As for international recognition, the general view from the engineering disciplines is that ECTS, modularisation and the obligatory diploma supplement may be improvements on the formal side of recognition, but have not changed much in practice as the real issue on which recognition depends is quality and content. In this regard, the reputation of German engineering education linked to the traditional degree title *Diplom* has been much more important than these formal innovations.

For German engineering, recognition in the United States is what matters most, and many departments have had no difficulties to place their *Diplom* graduates in PhD programmes at some of the finest US-American universities. It was not uncommon for the *Vordiplom*, though only an interim exam after two years, to be recognised by US universities as a Bachelor degree. The three-year length of the new Bachelor degrees is now experienced by many as a difficulty when it comes to recognition in the United States, also because schooling up to the university entrance qualification (*Abitur*) is currently shortened successively from 13 to 12 years; and German academics previously had used the

long school education previously as an argument for shorter undergraduate degrees to be accepted. This is one of the reasons for several disciplinary associations in engineering to currently favour the 3 ½-years Bachelor at universities as well. However, all this may well be transition problems. Given that the *Diplom* of 4 ½- years scheduled length was previously accepted by US universities as equivalent to Masters level in spite of the shorter length as compared to the 4+2 years in the US, it might be possible to achieve something similar for 3- or 3 ½-year Bachelor degrees. Here the main argument to be brought forward by German engineers is that “the missing year is the freshmen year, not the senior year”, and that the general education provided in the freshmen year is conveyed as part of secondary education in Germany (see <http://insidehighered.com/news/2006/11/06/bologna>).

As regards recognition of individual courses in the context of horizontal international mobility, interviewees report that modularisation and ECTS are not of much help because in an international context, courses still need to be inspected one-by-one for their content and level. Only in longstanding partnerships, mutual trust can replace this detailed scrutiny, as practiced by the Hochschule Mannheim (see Box 2).¹³

4. Impacts

An unequivocal feedback from the interviews was that it is actually too early to assess impacts in a systematic manner, as the implementation of the reforms is still ongoing and effects did not yet have time to unfold. Therefore, this section, besides some numbers on general quantitative trends in the field over the recent years, concentrates on expected effects and first indications of trends as identified by the stakeholders.

Access

At a macro-level across engineering disciplines, there has been a marked increase in new entrants in engineering since the academic year 2000/01, raising by 30% from about 65,000 to about 84,400 in the academic year 2004/05 (Destatis 2005, ZUS-07, Destatis 2006a, ZUS-07). In 2003 even more young people (87,000) decided for engineering studies. This increasing trend is however unrelated to the transition to the two-cycle degree structure and has more to do with increasing numbers of applicants in recent years. Generally, there still is a perceived scarcity of applicants in engineering, and even more so a scarcity of qualified applicants – as there is excess demand for qualified engineering graduates (see next section). An exception is architecture.

As regards the effect of the transition to a two-cycle system on access, two main types of answers were given by the interviewees: Overall, entry rates depend more on the market situation of applications versus places offered than on the new degree structure. Nevertheless, anecdotal evidence suggests that the transition to the Bachelor-Master structure has gone hand in hand with the more frequent use of selection procedures upon entry to the first degree. More specifically, this means that besides a local *numerus clausus* which is frequently applied in engineering particularly at *Fachhochschulen* (i.e. a minimum grade point average of the secondary school-leaving examination), institutions start to use further selection criteria such as minimum grades in mathematics and sciences, motivation letters and interviews. The practices vary across institutions, and by far not all institutions participate in this trend.

Regarding access to the Masters level, different views and practices still exist side by side among engineering departments in Germany. Some hold that a passed Bachelor degree should be sufficient to qualify for a Masters degree at the same institution or within network agreements (such as the TU9). Others make certain requirements regarding the grade of that Bachelor degree, as also foreseen by the KMK regulations and most *Länder* HE Acts.

¹³ To avoid redundancy, developments in the area of mobility are covered under “impacts”.

Graduation

The developments in the dimension of access have to be seen in the context that drop-out rates in the first two years of engineering studies are traditionally very high (rates between 30 and 50% are not uncommon), so that effectively these first years of basic mathematics and science teaching are used as a selection device and as a filter for choosing those intellectually able to become engineers. Some representatives of engineering professors think that the introduction of outright selection measures before the start of studies could help to reduce drop-out rates later on. A similar effect could be achieved by advisory talks as wrong student expectations are a common reason for drop-out. It is however too early to know if these measures function.

Basically two views were voiced by the interviewees in this regard. Some say that the high drop-out rates cannot be avoided because the crucial hurdle are the first two years of mathematical and scientific basics, and these demands can and should not be lowered with the introduction of the Bachelor degree. The Bachelor degree should not be a "light-weight" or "drop-out" degree, and Bachelor graduates should live up to the same intellectual standards as traditional *Diplom* graduates even if they have less subject knowledge due to shorter time to degree. Others voice the hope that improved selection procedures before entry and improved tutoring and mentoring in the first years can indeed contribute to decreasing drop-out rates in the future.

Employability

With the exception of architecture, engineering graduates generally do not have a problem in finding a job, as there is high demand for freshly-graduated engineers in Germany. At the same time, the unemployment rate of engineers is exceptionally high with 8.6% in 2005 (Statistikportal VDI 2006¹⁴) as compared to an overall unemployment rate of 3.8% among academics (Hohn 2006¹⁵). This is however mainly due to the problems with job market integration of "elder" engineers (40+). Anecdotal evidence suggests that these problems relate to over-specialisation, difficulties with keeping pace with the IT skills required at modern engineering work-places, and insufficient willingness of firms to invest in lifelong-learning measures. Data from the Federal Employment Office points into the same direction. In 2005, about 59,000 unemployed engineers compared to almost 28,000 job vacancies (Bundesagentur für Arbeit 2006: 4cc).

A further issue is the severe discrepancy between the unemployment rates of men and women. In 2004, 10% of female engineers (incl. informatics) were without a job as compared to only 5% of male engineers (Schreyer 2005: 4cc). Unemployment is also high among female engineering graduates, pointing at problems with the image and role attribution of female engineers with employers. In other words: discrimination of women still is an issue in this sector.

Given the small number of Bachelor and Masters graduates so far, few hard data is available on how the transition to the new degree structure will change the labour market opportunities of engineering graduates. The interviews yielded that Bachelor graduates in engineering from *Fachhochschulen* have no problems in finding a job. In spite of the shortening of the degree by a semester (or sometimes two) as compared to the traditional *Diplom (FH)*, the Bachelor degree is generally perceived at the same level, and *Fachhochschulen* work hard to achieve and communicate that this is the case (see above). Given the high demand for young engineers, this is not really an issue. This high demand also implies that Masters degrees offered by *Fachhochschulen* are generally not overcrowded. Doing a part-time Masters besides employment seems to emerge as a new success model in engineering at *Fachhochschulen* (see Box 2 on FH München).

¹⁴ See http://194.245.72.99/index5.php?AUSWAHL12=AQ_I&FACHBEREICH=Ingenieure%2Finnen+gesamt&SIZE=600x400, retrieved 14 November 2006.

¹⁵ Hohn, Bernhard (2005). „Arbeitsmarkt – auf der Suche nach Ingenieuren und IT-Leuten“, <http://www.faz.net/s/Rub81395A1084CE4DE0A416D80576BEA59C/Doc~E8A24D34CAF5D4BFE934112C519463B6F~ATpl-Ecommon~Scontent.html>, retrieved 14 November 2006.

Finding employment is not an issue either for Masters graduates from universities, as the general view from the *disciplinary as well as employer* associations is that they should be and are at least as qualified as the former *Diplom* graduates. The main difference might be that Masters graduates tend to be more specialised than the former broadly educated *Diplom* graduates, but curricular development is still in flux and academics already try to counteract this tendency by designing broad Masters programmes.

So the only real issue is the question of the labour-market acceptance of Bachelor graduates in engineering from universities. This is the only really new qualification type created by the transition to the two-cycle degree structure in Germany. The main problem is that the university Bachelor in engineering was not created upon demand either from industry or from the discipline itself. Most interviewees from the disciplines were very clear that from their perspective, the Masters degree should be the aim for their students. They have no intrinsic interest in losing the students which they have brought through the initial two hard years of basic mathematics and science training to the labour market. They also make the economic argument that the competitiveness of German industry crucially rests on the research and development capacity of Masters- and doctoral-level engineers. Already now there is a scarcity of graduates at this level, so to achieve the Lisbon objectives, the number of Masters-level engineers should increase rather than decrease. The new degree structure is perceived as threatening this aim. At the same time, the demand for engineers at Bachelor level is already catered for by the *Fachhochschulen*. Also, as hinted at above, universities have problems with designing a Bachelor profile that is at the same time as theoretically strong as previously and truly qualifies for the labour market, as required by legal and accreditation regulations in Germany. All this notwithstanding, university Bachelor graduates are of course free to enter the labour market, and the future will show how the system adjusts.

On the other hand, it should be seen that internationally-operating engineering-based firms in Germany (e.g. BASF, Siemens) already now have different pay scales for Masters and Bachelor graduates, and have always paid *Fachhochschul* graduates according to the Bachelor scale. University Bachelor graduates are now inserted at the same level. Also, future German engineers will increasingly be oriented towards a European job market, where the Bachelor level might be a more common entry point than in Germany to date also for university engineers.

There are already a few empirical studies on the labour-market transition of engineering graduates in Germany. However the results should be treated with caution due to the preliminary character of the situation. The main outcomes of a study by VDI & IAO (2004) based on interviews in 286 industrial companies were that

1. there is a lack of information on new degrees;
2. few companies have to date gathered experience with the employment of Bachelor and Masters graduates, as there have been few applications yet; and that
3. expectations towards the new degrees, both as regards quality and international comparability, are generally positive.

A survey of the *Hochschul-Informationssystem* (HIS 2004b: A25ff) among 1435 Bachelor graduates in comparison with 1005 graduates of the traditional degrees from the graduation years 2002 and 2003 also hints that not all employers know the new degree titles yet. The study also yields that many Bachelor graduates in engineering feel less competent regarding expert knowledge and scientific methods than the graduates of the traditional *Diplom* programmes. For example, only 54% of Bachelor graduates in engineering at universities think that their specialised knowledge is at least good (1 or 2 on a scale of 5; 1 = very good, 5 = to a low degree), while 75% of university *Diplom* graduates in this field think that they are good in this respect (HIS 2005a: A24). Both groups also diverge in judging the contribution of HE to their level of competence. Only 72% of Bachelor graduates as compared to 84% of *Diplom* graduates in engineering from universities think that HE made at least a good contribution (1 or 2 on a scale of 5; 1 = high contribution, 5 = low contribution) to their building of specialised knowledge (HIS 2005a: A27). Given the insecurity of the transition period and the traditional *Diplom* programmes as overwhelming reference point, this seems little surprising. At the same time, Bachelor graduates feel better prepared in foreign languages, feel more able to solve problems and to work co-

operatively than graduates of the traditional degrees (HIS 2005a: A24-26). These are however not the competencies cited as most important by employers in a recent VDI study (VDI 2005).

The latter result points to an intriguing tension in employer demands: Ideally, they would like to have seen graduates that are younger than *Diplom* graduates, have the same subject knowledge as them *and* have soft skills in addition. It is obvious that this is nearly impossible to achieve, so the future might see another round of rebalancing of the different competencies and time to degree.

Mobility

While national and international student mobility is one of the very strong points of engineering education in Germany, the effects of the reforms on student mobility are mixed. As regards international students studying engineering in Germany, the trend is very positive. It is however not clear to what extent this goes back to the Bologna reforms. Since Winter semester 2000/01, there has been a marked increase in international students in engineering, raising from the already high share of 12.3% to 16% in Winter semester 2005/06 (Destatis 2005a, ZUS-06, Destatis 2006a, ZUS-06). The percentages of international students in new entrants are even higher, rising from 15.1% to 17.5% in the same period (*ibid*).¹⁶

As regards mobility of German engineering students, the picture is more mixed. The little hard data that exists on international mobility overall points into a positive direction. A recent survey of Bachelor graduates by HIS yielded that the comparatively “low” international mobility of engineering students at *Fachhochschulen* remained by and largely untouched by the transition to the new degree structure: While 16% of graduates had gone abroad for either studies or an internship in *Diplom* degrees, this dropped only slightly to 13% of those graduating from a Bachelor programme. At universities, the rate rose from 28% among graduates from traditional degree programmes to 36% among graduates from Bachelor programmes (HIS 2005a: A9).

Anecdotal evidence from the interviews however suggests that horizontal international student mobility (during a Bachelor or a Masters programme) has become more difficult for two main reasons:

1. the diversification of degree programmes stemming from the efforts at profile-building have made programmes less comparable even within Germany;
2. the increased pressure to complete studies in the scheduled time gives less leeway for spending time abroad outside of organised mobility with partner universities.

While it is too early to be gloomy about the effect of the Bologna process on horizontal international student mobility, experience gathered so far suggests that the reforms do not lead to an “automatic” increase in mobility. As before, vertical mobility depends crucially on the efforts of individual students and professors as well as on the existence of overall institutional mobility schemes and policies. As before, horizontal mobility without loss of time for the student functions only in networks and partnerships with recognition agreements made *ex ante*. The possibility to spend a semester abroad *without* recognition and prolong studies by that period is of course always possible, but the *Zeitgeist* works partially against it as students increasingly feel obliged to complete their studies as quickly as possible.

As for international vertical mobility – moving to another university for the Masters degree – this is obviously encouraged by the move to a common degree structure within Europe. At the same time, this type of mobility is not necessarily regarded favourably by HEIs which are not eager to “loose” their best Bachelor graduates to other universities – as little as they want to “loose” them to the labour market. Also, German engineering departments are generally much more interested in recognition of their Bachelor degrees by universities in the United States than in Europe (see “recognition”).

¹⁶ These numbers include foreigner who received their HE entrance qualification (*Hochschulzugangsberechtigung*) in Germany (*Bildungsinländer*).

Another very strong point of German engineering education traditionally has been the horizontal mobility among HEIs of the same type within Germany. This has functioned through strong disciplinary networks aiming at an agreed core curriculum across Germany, and recognising each others' *Vordiplom* (an interim exam after two years). But also at other points during studies, changing HEI has so far been relatively unproblematic due to the high degree of standardisation within Germany. Disciplinary associations are currently working hard to achieve the same for the new degree programmes, although this is in tension with the political aims of increased curricular diversity, competition, profile-building and earlier specialisation. The challenge will be to find the right balance between both.

To conclude, the effect of the Bologna reforms on horizontal mobility is expected to be at best neutral, the effect on vertical mobility is *expected to be positive, but the latter* is not unequivocally regarded as desirable by universities. At the same time, as increasing international mobility and recognition has been one of the major rationales for the Bologna process, whether Bologna will be perceived as a success will crucially depend on progress in the area of mobility and recognition. As the chair of the disciplinary association of process engineering at *Fachhochschulen* put it: "If this does not happen, I do not understand the purpose of the entire undertaking any more at all."

Quality

The quality of German engineering education has always been high, as witnessed by the outstanding international reputation of the *Diplom-Ingenieur* and the products they design and produce. The transition to the Bachelor-Masters structure has definitely increased the attention devoted systematically to the quality of each individual programme through the requirement of programme accreditation. Prior to the reform, there was no full coverage of programme evaluation, neither internal nor external, in German HEIs. Quality assurance at programme level worked mainly through the national standards agreed in the RPO, the curriculum frameworks, but no systematic outcome-oriented quality assurance was in place.

Programme accreditation not only provided this first systematic assessment, but also played an important function in ensuring the correct implementation of the "Bologna features" of the new degrees such as ECTS, modularisation, the definition of learning outcomes and competencies, and the diploma supplement. While going through this process was experienced as cumbersome by academics across the board, most found it helpful to be forced to think through their curricula and make explicit the learning goals. Also, the input of external peers was often experienced as useful, and encouraged exchange of good practice across institutions. It has however to be borne in mind that by 26 October 2006, only about half of all Bachelor and Masters programmes in engineering had been accredited (290 out of 619 Bachelor and 267 out of 483 Masters programmes according to the Akkreditierungsrat (2006)).

Also, it is not possible to measure the effect of programme accreditation on quality in "hard terms" due to lack of comparability with the previous situation. It should also be noted that programme accreditation in Germany so far has been accreditation of concepts rather than practice, as most programmes were accredited before their start. Only the second round of accreditation after five years will be able to take into account effects such as graduation rates, time to degree, or employment of graduates.

A specific feature of the German accreditation system when seen in international context is its decentralised and competitive design with six agencies operating under the supervision of a national accreditation council (*Akkreditierungsrat*). Several agencies accredit engineering programmes. However one agency, ASIIN (www.asiin.de), has de facto assumed the function to bundle the national dialogue with disciplinary and professional associations and channel it into accreditation requirements. Most engineering departments therefore choose ASIIN when it comes to programme accreditation. The competitive set-up of the system raises issues. It is in tension with the natural need for national dialogue and consensus-building within disciplines and professions, and it would be unfeasible and inefficient to have several national fora for this purpose. ASIIN is active in several international engineering and accreditation networks, notably the Washington Accord

(www.washingtonaccord.org), an international alliance of subject accreditation agencies in Engineering, and has achieved provisional membership status.

Another achievement worth noting in this context is that under the German “Excellence Initiative” (*Exzellenzinitiative*) which involves a total of 1.9 billion € public spending on top research projects at universities, five of the “excellent” graduate schools will train doctoral students in engineering. These are: the Aachen Institute for Advanced Studies in Computational Engineering Science (RWTH Aachen), the Ruhr University Research School (Ruhr-Universität Bochum), the Erlangen Graduate School in Advanced Optical Technologies (Universität Nürnberg-Erlangen), the Karlsruhe School of Optics and Photonics (Universität Karlsruhe) and the International Graduate School of Science and Engineering (TU München) (DFG 2006). Each of them will receive a financial support of 6.5 Mio € p.a. In 2007, 22 further graduate schools will be selected. The design of the competition makes it very probable that more engineering programmes will succeed in the competition.

Cost-effectiveness

The effect of the Bologna reforms and other relevant developments on the cost-effectiveness of engineering education is difficult to assess, not only because they are not advanced enough but also because there are different effects, the balance of which is hard to calculate. Factors that increase the amount of money spent per students and thereby increase the cost-side of the balance are:

1. The introduction of tuition fees in Germany: So far, seven of the 16 *Länder* have decided to introduce tuition fees of up to 500€ per semester. This money is to be spent on improving study conditions for those students paying the fees. While the capacity regulation (*Kapazitätsverordnung*) so far regulated teacher-student ratios across Germany and made it impossible for a department to improve them, tuition fees might now be able to change this.
2. Also, the transition to Bachelor and Masters programmes has in many departments been linked to an effort to improve teacher-student ratios by getting permission for new and higher “norm values” (*Curricularnormwerte*) from *Länder* ministries under the capacity regulation, and to improve tutoring and mentoring and the attention spent on individual students in the first years.
3. The requirement that all new Bachelor and Masters programmes have to be accredited increases costs. Currently an accreditation procedure for a Bachelor or a Masters degree costs about 10,500 € plus value added (ASiIN). Currently there are strong efforts to bring this price down by measures such as simultaneous accreditation of several programmes. If an accreditation teams covers more degree programmes in one process, the average costs decrease to 4,000 €.

At the same time as increasing cost per student, all three measures are targeted at improving the effectiveness of engineering education. If they prove successful, drop-out rates and time to degree might decrease, the quality of education might rise further and the overall balance of cost-effectiveness might ultimately be positive.

What might be in danger, however, is the number of Masters-level graduates in engineering. The transition to the Bachelor-Masters structure is implemented in a context of austerity and no additional public funds are channelled into the HE system for this purpose. Moreover, the scheduled duration of degrees up to the Masters level has been increased by one semester at universities (and two semesters at *Fachhochschulen* which now also offer Masters degrees). This means that there are strong tensions between the aim to improve teacher-student ratios, keep entry rates at least constant (actually they would need to be increased in the coming years in the face of a demographic peak between 2010 and 2020 in Germany), and be able to offer Masters degrees. Even without formal transition quotas set by *Länder* ministries, these tensions make it difficult for engineering departments to afford Masters degrees for the majority of their graduates without sacrificing on other aims.¹⁷

¹⁷ A study on this issue is currently ongoing at CHE Centre for Higher Education Development, led by Johanna Witte (“*Kapazitätsplanung in gestuften Studienstrukturen*”). The results are expected in Spring 2007.

5. Summary and conclusions

The German case is exemplary for the special issues involved in the transition of engineering education to a two-cycle degree structure in many European countries. Germany is not the only system in which traditionally, short-cycle (often non-university) HE leading to Bachelor-level degrees¹⁸ and long-cycle (often university) HE existed side by side, with only limited permeability between the two tracks. Up to today, this traditional structure is reflected in the position statements of European Engineering Associations like CESAER & SEFI (2003), which hold that “there must continue to be provision for an integrated route through to second cycle Masters level” (Recommendation 2). Among these countries, Germany is one of the few where a decisive political attempt is being made to force the establishment of a Bachelor degree at universities that qualifies for the labour market. It is also one of the few where non-university HEIs have started to offer Masters degrees on a broad scale. While the implementation of these changes does not proceed without frictions and is not undisputed, Germany is a case where these issues can be studied “in process”.

German engineering is a good practice model in engineering independently from the Bologna reforms due to its inherited quality and international reputation, as symbolised in the traditional degree title, the *Diplom-Ingenieur*, which is now being replaced by the new Bachelor and Masters degrees. It is interesting to see what measures are taken by the disciplinary and professional associations to safeguard and further develop the traditional strengths of German engineering education when making the transition to the two-cycle degree structure. In this regard, the challenges differ between universities and *Fachhochschulen*.

At universities, the main issue is how to make the first years of HE more motivating for students, establish a labour-market relevant Bachelor degree *and* maintain the German strength of strong basics in mathematics and sciences. While many departments struggle with difficult trade-offs between general and specialised knowledge and theoretical and application-orientation, innovative examples such as mechanical and process engineering at the TU Darmstadt (see Box 1) show that the transition to the new degree structure *can* be used to increase both research intensity and problem orientation of the first degree, thereby further improving the quality of German engineering education. This does however require very thoughtful and daring curricular reforms to increase cohesion and integration of curricular content in a student-centred way without sacrificing theoretical rigour and depth. The German example also shows that the two-cycle degree structure can be experienced as useful and positive where the insistence on the professionally-qualifying nature of the Bachelor degree is not overdone, and other qualities of the Bachelor degree come into focus, such as its function as a national, international, and inter-disciplinary orientation point. Valuing the Bachelor degree as a point for inter-disciplinary orientation does however require a paradigm change among academics, many of which still cannot think of a student changing disciplinary orientation other than as a “drop out”.

At *Fachhochschulen*, the challenges present themselves somewhat differently. Here, the main issue at stake is to maintain the qualification level of the former *Diplom (FH)* with less time than before, because the time to the Bachelor degree is a semester less. This has been achieved through increased attention to curricular coherence and integration of contents, and new forms of ensuring practical experience of graduates; a defining feature of engineering education at *Fachhochschulen*. A challenge that is experienced as highly positive by *Fachhochschulen* and has acted as an incentive to move to the new degree structure is the new possibility to develop research-based Masters degrees. This is difficult for engineering professors at *Fachhochschulen* with about 18 hours of weekly teaching obligations and thus limited time for research. At the same time, having Masters students as research assistants and using Masters theses for research projects provides *Fachhochschulen* with important new opportunities. Also, part-time Masters programmes begin to emerge as a successful “business model” at *Fachhochschulen* (see the example of the FH München in Box 2). The Hochschule Mannheim has used the degree reform to further strengthen its international profile and offer attractive international

¹⁸ To be precise, the traditional degree from *Fachhochschulen (Diplom (FH))* was considered between Bachelor and Masters level.

degrees to students from regions like South-East Asia, teaching the first year fully in English and then moving to German (see Box 2).

Improving permeability from *Fachhochschulen* to universities in practice remains a challenge under the more similar degree structure, as curricula continue to differ in orientation, which is at the same time desired by disciplinary and professional associations alike. The future will probably see more structured transition paths from the more practically-oriented Bachelor degrees at *Fachhochschulen* to the more theoretically-oriented Masters degree programmes at universities, but these are still at an embryonic stage.

It should be noted that the motives to move to the two-cycle degree structure did not come from the disciplinary and professional associations in engineering, but have been politically imposed. Most academics at universities still feel today that the traditional degree structure has been more suitable to achieve the desired learning outcomes at Masters level. Nevertheless, they make sincere efforts to implement the new degree structure properly and make the necessary curricular adaptations.

Overall, the German case study shows that the transition to the two-cycle degree structure works in engineering, but that not all political desires are easily fulfilled and not all causalities work like expected. For example, the new degree structure does not automatically lead to an increase of entry rates to engineering programmes, it does not necessarily increase student mobility, and the effect on graduation rates particularly at Masters level is unclear.

At the same time, the study teaches us that there are important „non-structural“ determinants of success and quality, such as the strong cohesion within the German disciplinary and professional associations in engineering, their well-functioning national dialogue and consensus-building over quality and standards, and the agreed rigour of mathematical and scientific requirements in the first years of HE. Similarly, there are important non-structural determinants of mobility and recognition such as long-standing international reputation and co-operation in partnerships and networks. ECTS and modularisation can facilitate mobility and recognition, but not replace these other features.

The tradition of national standard-setting based on consensus-building within the disciplines and professions is the prerequisite for what has been a particular strength of German engineering education, the easy recognition of student achievement within Germany. This highlights that for the same to be achieved within Europe, intensified dialogue across borders in disciplinary and professional networks is the way ahead.

6. Interviews

1. Prof. Dr.-Ing. Wolfgang Predki, President of the disciplinary association of mechanics and process engineering at universities (*Fakultätentag Maschinenbau und Verfahrenstechnik*), Ruhr-Universität Bochum, Fakultät für Maschinenbau, Lehrstuhl Maschinenelemente, Getriebe und Kraftfahrzeuge, November 2006, 09:00-10:00, Telephone.
2. Univ.-Prof. Dr.-Ing. Konstantin Meskouris, RWTH Aachen, Baustatik und Baudynamik, www.lbb.rwth-aachen.de, Chair of the disciplinary association of civil engineering at universities (*Fakultätentag für Bauingenieurwesen und Geodäsie*), 13 November 2006, 9:30-10:10, Telephone.
3. Prof. Dr.-Ing. M. Nagl, Chair of the disciplinary association of informatics at universities (*Fakultätentag Informatik*), RWTH Aachen, Lehrstuhl für Informatik3, www-i3.informatik.rwth-aachen.de, 14 November 2006, 13:00-14:00, Telephone.
4. Prof. Dr. Ursula van Rienen, Chair of the disciplinary association of electrical and information engineering at universities (*Fakultätentag Elektrotechnik und Informationstechnik (FTEI)*), Universität Rostock, Fakultät für Informatik und Elektrotechnik, 15 November 2006, 15:30-16:30, Telephone.
5. Prof. Dr.-Ing. Hans-Rainer Klemkow, Chair of the disciplinary association of mechanics at *Fachhochschulen* (*Fachbereichstag Maschinenbau*), Fachhochschule für Technik, Wirtschaft und Gestaltung, Wismar, 14 November, 8:30-9:30, Telephone.

6. Prof. Dr.-Ing. Weil, Chair of the disciplinary association of mechanics at Fachhochschulen (*Fachbereichstag Verfahrenstechnik*), Fachhochschule Osnabrück, FB Werkstoffe und Verfahren, 29 November, 11:00-12:00, Telephone.
7. Professor Dr.-Ing. Johann-Dietrich Wörner, President of the Technische Universität Darmstadt, President of CASAER, Board Member of ASIIN, 13 November 2006, 11:30-12:00, Telephone.
8. Prof. Dr.-Ing. Manfred J. Hampe, Technische Universität Darmstadt, Department of Mechanical Engineering, Thermal Process Engineering, initiator of the innovative degree programmes “BSc and MSc in Mechanical and Process Engineering”, 09 November 2006, 13:00-14:00, Telephone.
9. Prof. Dr.-Ing. Inken Baller, BTU Cottbus, Vice-President (200-2006), 15 November 2006, 14:30-15:30, Telephone.
10. Prof. Dr.-Ing. Dirk Timmermann, Universität Rostock, Department of Computing Science and Electronic Engineering, Institute of Applied Microelectronics and CE, University of Rostock, Richard-Wagner Str. 31, 18119 Rostock-Warnemünde, www-md.e-technik.uni-rostock.de, 14 November 2006, 11:00-12:00, Telephone.
11. Prof. Dr. h.c. Dietmar v. Hoyningen-Huene, President (*Rektor*) of the Hochschule Mannheim, Chair of the Rectors’ conference of *Fachhochschulen* of the *Land Baden-Württemberg*, Chair of the Accreditation Commission II of ASIIN, Member of the HRK Senate, HRK Bologna Promotor, 10 November 2006, 08:00-09:10, Telephone.
12. Prof. Dr. Hermann Merz, Hochschule Mannheim, former Dean, Fakultät für Elektrotechnik, www.et.hs-mannheim.de, 10 November 2006, 12:30-13:30, Telephone.
13. Prof. Dr. Marion Schick, President, Fachhochschule München, 13 November 2006, 14:30-15:30, Telephone.
14. Prof. Dr. Rainer Seck, Fachhochschule München, Fakultät für Elektrotechnik und Informationstechnik, 10 November 2006, 14:00-15:00, Telephone.
15. Dr. Volker M. Brennecke, VDI Profession and Society Division; Head of the Department Education - Career - Society, www.vdi.de, 9:30-10:00, 13 October 2006, Telephone.
16. Birgit Hanny, Vice Managing Director, ASIIN (German accreditation agency specialised in accrediting degree programs from the fields of engineering, informatics/computing science, the natural sciences and mathematics), 15:00-16:30, 17 November 2006, Telephone.
17. Stefan Bienefeld, HRK (German Rectors’ Conference), Programme Manager, Bologna Service Unit, 16:00-17:00, 25 October 2006, Telephone.

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8. Appendix

INTERVIEWS – FAKULTÄTENTAGE/FACHBEREICHSTAGE

Datum:
Hochschule:
<p>Einleitung/Erläuterung des Hintergrundes</p> <ul style="list-style-type: none"> - Auftrag der Studie, Zeitrahmen - Studiengänge der Medizin, Lehrerbildung, in Rechtswissenschaften, Geschichte und Ingenieurwissenschaften - insbesondere die Umstellung auf gestufte Studiengänge und Effekte, die durch die Umstellung entstanden sind - Für jedes Fach ein "besonders interessanter Fall" – Umstellung in einzelnen Ländern <p>Für die Ingenieurwissenschaften soll Deutschland untersucht werden. Gründe hierfür sind u.a. die besonderen Bemühungen um die Berufsfähigkeit der Bachelor-Absolventen, die Durchlässigkeit zwischen Universitäten und Fachhochschulen, und die Nutzung der Umstellung für ernsthafte curriculare Reformen.</p>

1. Reformdimensionen

Fokus jeweils: Besondere Schwierigkeiten der Ingenieurwissenschaften mit diesem Punkt und Umgang damit? Bitte nennen Sie jeweils übergreifende Trends in den von Ihrem Fakultätentag vertretenen Fächern.

<p>* Gestufte Studienstruktur <i>Wie weit sind in den in Ihrem Fakultätentag vertretenen Fächern/Hochschulen gestufte Studiengänge in IngWiss eingeführt, was sind wichtige Merkmale der Umstellung?</i></p> <p><i>Spezifische Aspekte:</i></p> <ul style="list-style-type: none"> - Dauer des ersten und zweiten Zyklus - Funktion des Bachelor-Abschlusses, Arbeitsmarktrelevanz - Nutzung der Umstellung für Curricular-Reformen 	
<p>* Flexible Lernpfade <i>Wie hat sich die Umstellung auf die Flexibilität der Lernpfade für Studierende in dem von Ihrem Fakultätentag vertretenen Fach ausgewirkt, sowie auf Zugangs- und Quereinstiegsmöglichkeiten ins Studium?</i></p> <p><i>Spezifische Aspekte:</i></p> <ul style="list-style-type: none"> - Durchlässigkeit Uni-Fachhochschule - Möglichkeiten, ohne Abitur zu studieren - Flexibilität bei den Zugangsvoraussetzungen zum Masterstudium? 	

<ul style="list-style-type: none"> - <i>Alternative Lehrformen (Online, Gruppenarbeiten, betreute Praxissemester in Firmen...)</i> - <i>Anerkennung relevanter Berufsausbildung oder -erfahrung</i> - <i>Möglichkeiten zum Quereinstieg ins Studium</i> 	
<p>Kompetenz-basiertes Lernen <i>Hat sich durch die Umstellung auf Bachelor und Master etwas im Bereich „Kompetenzbasiertes Lernen“ getan? Wenn ja, welche Erfahrungen haben die Hochschulen in den durch Ihren Fakultätentag vertretenen Fächern damit gemacht?</i></p> <p><i>Spezifische Aspekte:</i></p> <ul style="list-style-type: none"> - <i>Modularisierung</i> - <i>Definition von Kompetenzen/learning outcomes</i> - <i>ECTS</i> 	
<p>Anerkennung <i>Wie ist die Praxis bei der Anerkennung von Studienleistungen in den durch Ihren Fakultätentag vertretenen Fächern, hat sich in diesem Bereich durch die Bachelor-Master Umstellung etwas verändert?</i></p> <p><i>Spezifische Aspekte:</i></p> <ul style="list-style-type: none"> - <i>Diploma Supplement</i> - <i>Anerkennung von Studienleistungen anderer deutscher HS</i> - <i>Anerkennung von Studienleistungen ausländischer HS</i> 	
<p>Mobilität <i>Wie steht es um die Mobilität in den durch Ihren Fakultätentag vertretenen Fächern, hat sich in diesem Bereich durch die Bachelor-Master Umstellung etwas verändert?</i></p> <p><i>Spezifische Aspekte:</i></p> <ul style="list-style-type: none"> - <i>Studierendenmobilität</i> - <i>Mobilität von Absolventen</i> - <i>akademisches Personal</i> 	

2. Zusammenfassende Einschätzungen

<p>*Wo sehen Sie die Hauptstärken der Umsetzung der Reform in den durch Ihren Fakultätentag vertretenen Fächern, und was können andere davon lernen?</p>

<p>Effekte, Einfluss des Bologna-Prozesses Sehen Sie in den folgenden Bereichen in den letzten Jahren Verbesserungen für die ingenieurwissenschaftlichen Studiengänge (in den durch Ihren Fakultätentag vertretenen Fächern), und würden Sie diese auf den Bologna-Prozess zurückführen?</p>	
Zugang zum Studium	
Abbruchquoten, Anzahl der Absolventen	
Berufsfähigkeit der Absolventen	
Mobilität der Studierenden, Absolventen und des akademischen Personals	
Qualität des Studiums und Qualitätssicherungsmaßnahmen	
Effizienz/Effektivität des Mitteleinsatzes für die Lehre	

<p>Stimmung Wie würden Sie die Stimmung in den durch Ihren Fakultätentag vertretenen Fächern in Bezug die Bachelor-Master-Umstellung und begleitende Curricularreformen beschreiben? - Zufriedenheit der Lehrenden - Zufriedenheit der Studierenden</p>	
<p>Chancen und Risiken Was sind aus Ihrer Sicht die wichtigsten Gründe für eine Befürwortung der Reform in den in den durch Ihren Fakultätentag vertretenen Fächern, und warum?</p>	
<p>Was sind aus Ihrer Sicht die wichtigsten Gründe für Widerstände in den durch Ihren Fakultätentag vertretenen Fächern gegen die Reform, und warum?</p>	

INTERVIEWS – HIGHER EDUCATION INSTITUTIONS

Datum:
Hochschule:
<p>Einleitung/Erläuterung des Hintergrundes</p> <ul style="list-style-type: none"> - Auftrag der Studie, Zeitrahmen - Studiengänge der Medizin, Lehrerbildung, in Rechtswissenschaften, Geschichte und Ingenieurwissenschaften - insbesondere die Umstellung auf gestufte Studiengänge und Effekte, die durch die Umstellung entstanden sind - Für jedes Fach ein "besonders interessanter Fall" – Umstellung in einzelnen Ländern <p>Für die Ingenieurwissenschaften soll Deutschland untersucht werden. Gründe hierfür sind u.a. die besonderen Bemühungen um die Berufsfähigkeit der Bachelor-Absolventen, die Durchlässigkeit zwischen Universitäten und Fachhochschulen, und die Nutzung der Umstellung für ernsthafte curriculare Reformen.</p>

1. Reformdimensionen

Fokus jeweils: Besondere Schwierigkeiten der Ingenieurwissenschaften mit diesem Punkt und Umgang damit?

<p>* Gestufte Studienstruktur <i>Wie weit sind an Ihrer Hochschule gestufte Studiengänge in IngWiss eingeführt, was sind wichtige Merkmale der Umstellung?</i></p> <p><i>Fokus Unis: Umstellung des Curriculums, damit Bachelor berufsqualifiziert?</i></p> <p><i>Fokus FHs: Umstellung des Curriculums zur Kürzung des Studiums bis zum ersten Abschluss und zur Durchlässigkeit zur Universität?</i></p> <p><i>Weitere Aspekte:</i></p> <ul style="list-style-type: none"> - Dauer des ersten und zweiten Zyklus - Funktion des Bachelor-Abschlusses, Arbeitsmarktrelevanz - Nutzung der Umstellung für weitere Curricular-Reformen 	
<p>* Flexible Lernpfade <i>Welche Flexibilisierungen in Zugängen und Lernpfaden für Studierende haben Sie vorgenommen?</i></p> <p><i>Fokus: Durchlässigkeit Uni-Fachhochschule</i></p>	

<p><i>Weitere Aspekte:</i></p> <ul style="list-style-type: none"> - Für Universitäten: Ist es an Ihrer Fakultät /Ihrem Fachbereich möglich, ohne Abitur zu studieren? - Wie flexibel sind Sie bei den Zugangsvoraussetzungen zum Masterstudium? - Bieten Sie alternative Lehrformen an (Online, Gruppenarbeiten, betreute Praxissemester in Firmen...)? - Gibt es die Möglichkeit der Anerkennung relevanter Berufsausbildung oder – erfahrung? - Welche Möglichkeiten zum Quereinstieg ins Studium gibt es? 	
<p>Kompetenz-basiertes Lernen <i>Welche Erfahrungen mit der Einführung von kompetenzbasiertem Lernen haben Sie gemacht?</i></p> <p><i>Aspekte:</i></p> <ul style="list-style-type: none"> - Modularisierung - Definition von Kompetenzen/learning outcomes - ECTS 	
<p>Anerkennung <i>Wie sichern Sie die Anerkennung der Studienleistungen, worauf begründet sich Ihre Anerkennung von Studienleistungen an anderen Hochschulen?</i></p> <p><i>Aspekte:</i></p> <ul style="list-style-type: none"> - Diploma Supplement - Anerkennung von Studienleistungen anderer deutscher HS - Anerkennung von Studienleistungen ausländischer HS 	
<p>Mobilität <i>Wie fördern Sie die Mobilität von Studierenden, Absolventen und akademischem Personal?</i></p> <p><i>Aspekte:</i></p> <ul style="list-style-type: none"> - Studierendenmobilität - Mobilität von Absolventen - akademisches Personal 	

2. Zusammenfassende Einschätzungen

<p>*Wo sehen Sie die Hauptstärken der Umsetzung der Reform an Ihrer Hochschule in Ihrem Fachbereich, und was können andere davon lernen?</p>

<p>Effekte, Einfluss des Bologna-Prozesses Sehen Sie in den folgenden Bereichen in den letzten Jahren Verbesserungen für die ingenieurwissenschaftlichen Studiengänge (an Ihrer HS oder insgesamt), und würden Sie diese auf den Bologna-Prozess zurückführen?</p>	
Zugangs zum Studium	
Abbruchquoten, Anzahl der Absolventen	
Berufsfähigkeit der Absolventen	
Mobilität der Studierenden, Absolventen und des akademischen Personals	
Qualität des Studiums und Qualitätssicherungsmaßnahmen	
Effizienz/Effektivität des Mitteleinsatzes für die Lehre	

<p>Stimmung Wie würden Sie die Stimmung an Ihrem Fachbereich im Hinblick auf Veränderungen in der Lehre beschreiben? - Zufriedenheit der Lehrenden - Zufriedenheit der Studierenden</p>	
<p>Chancen und Risiken Was sind aus Ihrer Sicht die wichtigsten Gründe für eine Befürwortung der Reform in den IngWiss, und warum?</p>	
<p>Was sind aus Ihrer Sicht die wichtigsten Gründe für Widerstände in den IngWiss gegen die Reform, und warum?</p>	
<p>Akteure und Einflussfaktoren Wer sind die wichtigsten Befürworter und Unterstützer der Reform, und welche Faktoren beeinflussen die Reform positiv?</p>	
<p>Wer sind die wichtigsten Gegner der Reform, und welche Faktoren behindern die Reform?</p>	

Case study: Law in Ireland¹

1. Introduction

Law is a discipline which is driven by litigation in national legal systems and curricular structures and content are focused on national features and jurisdictions. The European context seems to be secondary and is depending on an evolving European space of legal education. Nevertheless the European Law Faculties Association (ELFA) welcomes the objectives of the Bologna process because of “a general concern about the quality, transparency and mobility in European (legal) education (...), the achievement of greater compatibility and comparability of systems of higher education, a reduction of student drop-out rates, and an orientation of university degrees also towards needs of the changing labour market” (ELFA, 2002). In several countries, however, there are great reservations regarding the implementation of the Bologna process, and law faculties struggle in particular with the introduction of the two-cycle system.

Law in Ireland is chosen as a case study because there is wide appreciation of the two-cycle degree system. In addition, Bologna has, in the words of Michael Kelly, the chairman of the Higher Education Authority, “great potential to support our shared effort to strengthen the performance of the higher education system in Ireland and to develop stronger comparability and compatibility with other countries within the Bologna Framework” (Kelly, 2005). Such a statement justifies a closer look at the curricular developments in legal studies in Ireland.

Another reason why law in Ireland is an interesting case is that not only universities, but other higher education institutions offer Law programmes as well, especially in the context of broadening access and responsiveness of law programmes to domestic needs and requirements.

This report draws together information from various sources. Interviews were held among representatives from law schools at universities (deans, course directors) and law departments of other higher education institutions, as well as from important national organisations. Moreover, since degree programmes are greatly influenced by the requirement of the two professional associations their educational officers were interviewed as well. All those interviewed are listed at the end of this report. Additionally documentary material and some selected literature were used.

The report first sketches the Irish higher education system and some policy developments in Ireland which are important to understand the context in which legal studies are operating. This is followed by a general view on the Bologna process with particular focus on the National Qualifications Framework.

Next we give an overview of legal studies in Ireland, the types and degrees offered as well as the route to a fully qualified lawyer. Thereafter we discuss the various aspects of curricular reforms and assess the impacts of the Bologna process in terms of the indicators access, graduation and employability, mobility, quality and cost-effectiveness.

Finally the major findings from this case-study will be summarised which are seen as exemplary for the implementation of the Bologna process in legal studies throughout Europe.

2. Higher Education in Ireland

2.1. *The Irish Higher Education system*

Ireland has a diverse higher education system which includes a range of institutions – Universities and Institutes of Technology as well as Colleges of Education, non-State aided private higher education colleges and other national institutions. This system aims to ensure maximum flexibility

¹ This case study was written by Egbert de Weert

and responsiveness to the needs of students and to the wide variety of social and economic requirements. Within and between these sectors a diversity of institutions offer differing types and levels of courses. The universities are essentially concerned with undergraduate and postgraduate programmes, together with basic and applied research. Institutes of Technology are cross-sector multi-level institutions which provide undergraduate programmes, with a smaller number of postgraduate programmes and a growing involvement in regionally oriented applied research. The third-level colleges mainly focus on applied courses catering for the needs of a wide range of occupations. One of the strengths of Ireland's higher education system, mentioned in the OECD review of Higher Education in Ireland, is the extent to which a diversity of mission has been maintained between the university and the institute sectors, as well as within sectors. The reviewers are particularly impressed by the extent to which the institutes see themselves as different from the universities and define themselves as an equal partner in a dynamic higher education system which covers a diverse range of functions. The review supports very strongly the main thrust of the higher education policy to retain the existing binary policy (OECD, 2004).

Since in all these sectors Law on various (degree) levels is offered some basic information is needed about the government agencies which determine the context in which the institutions are operating. Three agencies in particular are important. First, the Higher Education Authority (HEA), a planning body which is responsible for furthering the development of higher education and assists in the co-ordination of state investment in higher education.

Second, the National Qualifications Authority of Ireland (NQAI) established in 2001 is responsible for establishing and maintaining the National Framework of Qualifications. This will be further discussed in the section below on Bologna. Third, The Higher Education and Training Awards Council (HETAC) is the qualifications awarding body for the Institutes of Technology and other non-university higher education colleges. All these institutions can apply to the HETAC for validation of a programme. HETAC qualifications, as the national qualification of a constituent EU member state, are recognised internationally. An exception is the Dublin Institute of Technology (DIT) which has been recognised as a self-governing body with the legislative authority to award its own degrees, including doctorates and honorary doctorates.

The universities validate and award their own qualifications, as well as those in institutions recognised by them. They have primary responsibility for their own quality assurance arrangements and have established the Irish Universities Quality Board (IQUB) to promote best practices in quality assurance throughout their sector. The Irish Universities' Association (IUA) is the representative body of the Heads of the seven Irish universities. It seeks to advance university education and research through the formulation and pursuit of collective policies and actions on behalf of the Irish universities.

2.2. Policy context

Regarding higher education policy, the OECD review is not very explicit on curriculum issues, but it makes a series of recommendations which are likely to have some impact on curriculum matters over the next decades, particularly with respect to greater access and participation, and internationalisation. The report makes a series of recommendations that call for significant structural changes in the areas of strategic steering, governance and management of higher education institutions, strategic management of research, R&D and innovation and internationalisation.

The Higher Education Authority identifies the following three key areas for action for the coming years (HEA 2004):

- Empower the institutions to develop the highest quality of teaching, learning scholarship and research and enhance their contribution to creating and sustaining an innovation society (...) HE institutions are the 'engines' of economic growth and development
- Widen participation in higher education
- Foster the development of a higher education sector which has the capacity to respond to changing needs in society.

Of these key areas the widening participation policy has been a consistent element over the years and has an important effect on other matters such as funding and curriculum. The HEA strongly supports further access to higher education so that all citizens have the opportunity to develop to their full potential. There is a need to promote access for students with disabilities and students with economic, social and other disadvantages as well as for those who could not participate when leaving school or whose career and personal development would be enhanced by a return to higher education. According to the HEA the Higher Education institutions will need to respond to these needs through an increasing diversity in programmes, curriculum, course structures and length of programmes (see also National Office, 2006). The development of programmes in legal studies has to be understood in this access policy context.

The widening access policy is also related to the 'free fees' policy which was introduced in 1996 for all full-time undergraduate programmes as a means to significantly improve and widen access to higher education. The free fees scheme currently covers four undergraduate years. Thus, it could be argued that there is no immediate impetus for a complete change to programme length. However, it has been suggested, most notably from the former Chairman of the HEA, that the free fee scheme should only cover three years. If that occurs, there will certainly be greater pressure on institutions to look carefully at programme length. Similarly, because students pay for taught Masters programmes, there may be little impetus to extend the period of a Masters study from the current one year to a two years Masters.

The OECD review argues that Ireland cannot develop a globally-competitive tertiary education system and research capability without high levels of investment in tertiary education, but concludes that this investment will not be possible without some private contribution from students, through fees or other means. The review also stresses the importance of maintaining high levels of investment in tertiary education but acknowledges that the education budget is under severe pressure from competing demands elsewhere in the public sector and in the education sector, where Ireland's expenditure is below the OECD average. The economic and fiscal realities facing Ireland mean that relying on state funding alone will be insufficient. Less reliance on the state would make them more competitive. Moreover, it is argued that the free fees policy has not resulted in improved participation from students from disadvantaged backgrounds and that the solution to improving participation lay elsewhere.

Despite these arguments on the contrary, there is unlikely to be any change to the current 'free fee' policy. Likewise, the scheme is unlikely to be extended to mature or part-time degree students. This differential has given rise to much comment about lack of equity in the system, but the cost of extending it will certainly be very great given the government's stated intention to reach 'world class excellence' in some of its universities. This balance between 'world class' and 'equity' will emerge as a big issue over the coming years.

2.3. *Bologna and the qualifications framework*

The most significant changes that have affected curriculum in Ireland have arisen since 1999 with the Bologna Declaration and the passing of the Qualifications (Education and Training) Act, 1999. Both of these have had a major impact on further and higher education institutions. The passing of the Qualifications Act led to the establishment in 2001 of the National Qualifications Authority of Ireland (NQAI). This body, working with existing awarding bodies and others established by the Act has led to considerable changes in terms of academic award structures and related matters. In particular the National Framework of Qualifications is the primary Irish government policy instrument that has influenced curricular change in Ireland. It has established a qualifications framework with an emphasis on award descriptors and learning outcomes, with eight sub-strands of knowledge, skill and competence that must be acquired by a learner in order to achieve an award at a particular level (NQAI, 2003/4).

The Framework is the single, nationally and internationally accepted entity, through which all learning achievements may be measured and related to each other in a coherent way and which defines the relationship between all education and training awards. It is a 10-level framework with higher education and training awards being made at levels 6 to 10 and the assignment of credit to major award-types. These are: Higher Certificate (level 6); Ordinary Bachelor Degree (Level 7); Higher (Honours) Bachelor Degree and Higher Diploma (Level 8); Masters Degree and Postgraduate Diploma (level 9); Doctoral Degree and Higher Doctorate (level 10). Each of these major award-types has a descriptor associated with it which describes the purpose, level, volume, learning outcomes, progression and transfer and articulation associated with it. Each of the award-types is understood to be different than the other award-types in an Irish context and has value and relevance for the labour market and for progression to further learning opportunities. The distinction between Ordinary Bachelors and Honours Bachelors has a long history in Ireland, and is intended to serve the interests and needs of learners. In a discussion paper, the NQAI focuses on the inclusion of the universities sub-degree and other smaller awards in the Framework, and sets out an agreed basis and process for their inclusion (National Qualifications Authority, 2006).

The NQAI has determined that awards at levels 6 to 10 will be made by HETAC and the Dublin Institute of Technology, while the universities make the awards from levels 7 to 10. The emphasis is on the development of learning outcomes and the Framework does not impose any requirements regarding the duration of programmes. Other key elements of the Framework are the principles and guidelines in relation to the recognition of prior learning and the use of credits (European Credit Transfer Scheme – 60 credits equates to one year of study) to facilitate student mobility and wider issues of access, transfer and progression. This process is overseen by the NQAI.

Under the terms of the Qualifications Act, providers with programmes validated by the Higher Education and Training Awards Council (HETAC) as well as the Dublin Institute of Technology are required to implement the NQAI procedures. The role of the NQAI is also to facilitate and advise the universities in implementing these procedures and to review the implementation of the procedures by the universities, in consultation with the Higher Education Authority. The Irish University Quality Board is independent of the NQAI, albeit the universities are required to liaise with the NQAI in consultation with the Higher Education Authority. The NQAI has three principal objectives as set out in the above legislation:

- the establishment and maintenance of a framework of qualifications for the development, recognition and award of qualifications based on standards of knowledge, skill or competence to be acquired by learners;
- the establishment and promotion of the maintenance and improvement of the standards of awards of the further and higher education and training sector, other than in the existing universities;
- the promotion and facilitation of access, transfer and progression throughout the span of education and training provision.

The European Qualifications Framework for Lifelong Learning (EQF) which is under development has a basic structure of eight levels based on learning outcomes. With both the EQF and the Framework of Qualifications of the European Higher Education Area – the ‘Bologna’ Framework with its three cycles – the primacy remains with the national qualifications structures. Quality assurance is required in all national arrangements and qualifications relate to national frameworks. Also coherence and complementarity between the national framework and credit systems has been achieved. According to the NQAI the national frameworks relate to each other through the meta-framework and countries will certify the link of their national frameworks to the European frameworks following established criteria and procedures.

In its Self-evaluation report the HETAC (2006) mentions among its achievements:

- a strong contribution to the development of the National Framework of Qualifications and to its rapid and widespread implementation;
- a major input to the development of quality assurance policy and practice at European and global levels that has enhanced the perception of Irish higher education internationally.

In a similar vein the European University Association and the HEA are expecting more interest in many parts of the universities for broader international vision for institutional development. Universities seem to be essentially focused on the recruitment of fee paying students. The EUA strongly asks universities to examine their current practices especially as far as recognition procedures are concerned which should be in correspondence with the principles of ECTS and the Bologna Process (EUA/HEA 2006).

In Ireland a pilot project was carried out to verify the compatibility of the Irish National Framework of Qualifications with the Framework of Qualifications of the European Higher Education Area. In this verifying process it is considered that there are clear and demonstrable links between the descriptors for particular major-award types in the Irish Framework and cycle qualification descriptors in the European Framework. An apparent inconsistency or paradox was noted in the treatment of both the Ordinary Bachelor degree and the Honours Bachelor degree as first cycle qualifications compatible with the Bologna first cycle descriptor. The compatibility of both with the Bologna first cycle descriptor has been demonstrated in terms of the comparisons of the learning outcomes (Steering Committee, 2006). Notwithstanding this, these awards are included at two different levels in the Irish Framework, with different descriptors, and the Ordinary Bachelor degree does not typically give access to Masters degree programmes at present in Ireland. This implies a recognition that Ireland has two sub-levels within the first cycle.

Despite the NQAI Framework, the Irish government has taken a fairly laissez-faire approach to curriculum reform in the context of the Bologna process. The initial 'official' view was that the 'market' would determine which programmes were desirable. Undergraduate degrees are three or four year duration, depending upon institution and discipline. Some institutions have a mixture of degree lengths. Three-year degrees are often at Ordinary degree level, while four year degrees are at Honours level. There is some evidence that Ordinary degrees will eventually disappear due to Bologna pressures. (Taught) masters programmes are one and occasionally two years duration, again depending upon discipline. Research masters or MPhil degrees are usually two years unless there is a conversion to PhD. PhDs have officially been seen as three year, which was the basis for scholarship or similar funding, despite evidence that completion took much longer. In partial recognition of this fact, government and institutional funding is now being offered for 3.5 years, with some leeway for writing up. Thus, there is no single picture that emerges for the country.

Curriculum developments and reform are influenced and constrained by a combination of forces, including government oversight, professional organisations, and the quality assurance agencies. With respect to Law the professional bodies (as explained below) exert particularly strong influence over entry requirements and student numbers, and curriculum content comparable to a cartel.

3. Legal Studies in Ireland

3.1. Overview of degree programmes

The universities are the main providers of law which is mainly an undergraduate area of study and until relatively recently was taken only by those who planned to practice either as a solicitor or barrister, the two separate professions. In addition law can be studied to a limited extent at the Institutes of Technology as well as at some private third level colleges. The result is a wide variety of types of courses, degree programmes, diplomas and certificates in legal studies for a various group of students.

A common characteristics of all these degree programmes is that they are all greatly influenced by the requirements of the two professional associations. These are the Law Society of Ireland and Society of King's Inns which are exclusively responsible for the training of respectively solicitors and barristers. Their training will be discussed later, but it is important to note that most of the degree programmes provided by HE institutions do not qualify graduates to practice as a lawyer, but graduates need additional training provided by the two professional bodies. In other words, there is a clear distinction between academic legal education and the practical training.

Universities

Law is taught at five Irish universities (mostly organised in Schools of Law): University College Dublin, University College Cork, Trinity College Dublin, National University Ireland (Galway), and University of Limerick.

The standard degree awarded is either an LL.B. (Bachelor of Law) or a B.C.L. (Bachelor of Civil Law), usually a three-year programme. In the LL.B at Trinity College students study legal subjects over four years. The differences are historically, and are more related to the course structure as such (semester or trimester) rather than perceived differences in quality.

Additionally there are combined law degrees where law is combined with German or French or Irish. These four year degree courses allow students to combine the study of law with language and cultural studies as well as legal subjects in the respective jurisdictions. They include a student placement at a French respectively German speaking university in the third year.

Other combinations are Law and Business, Law and Accounting, Corporate law or Law as part of a general arts degree. These are predominantly four-year programmes. The University of Cork, for example, offers a four year BCL (international) degree where students spend an academic year at any of the partner universities in the US or Europe.

In addition, several law schools have shorter programmes, for example two-year LLB postgraduate programmes that are designed to provide a legal education to graduates in disciplines other than law. It is increasingly the case that graduates in disciplines such as business studies, public administration, arts, and engineering wish to supplement their studies with a legal education.

Masters programmes (LL.M.) are offered by most universities. Students may take so-called taught Masters and Masters by research specialising in law. An LL.M is generally one full calendar year with a research dissertation at the end. In addition, some universities provide the one-year postgraduate law degree (LLB) which should not be confused with the Masters. This offers students the opportunity to expand their portfolio of legal knowledge across a wider area of law in preparation for specific practice or careers. This degree can also be taken as preliminary to a Masters programme and is especially attractive for those who have a combined law degree.

Finally the Ph.D. degree programme which involves at least two years in full-time supervised research within the university with a maximum period of five years. Part-time registration is also possible.

Institutes of Technology.

The institutes of technology also award law degrees, though usually as Foundation in Law programmes and BA programmes in Law as well as combined programmes such as Business and Law. The Dublin Institute of Technology (DIT) is very active in the field of legal studies. It runs an advanced entry part-time BA in Law (aimed mainly at working graduates wishing to enhance their skills for purposes other than qualifying as a lawyer), a BSc. in Business and Legal Studies as well as other continuing professional development programmes. The Diploma is broadly equivalent to a BA degree (level 7), is two-years and meant for those already working in some field (mainly public services) who want to enhance their knowledge and skills in law.

Furthermore, DIT offers a full-time Postgraduate Diploma in Law. This is a one-year full-time course comprising 60 credits offered at level 9 on the National Framework of Qualifications. Entry is generally limited to applicants who already possess a level 8 qualification (an Honours degree). The Postgraduate Diploma must be seen as an alternative route into the legal profession. It is open for students who, for whatever reason lack an undergraduate degree in legal studies, but are interested in a career in or involving law. Most of these students progress directly on to the Postgraduate Diploma in Law immediately following completion of their primary Honours degree at an Irish university.

Third level colleges.

Several third level private colleges offer courses in law: Portobello College Dublin, Griffith College Dublin, and the colleges of Letterkenny, Carlow, and Waterford. For the purpose of validation courses are offered in conjunction with other institutions, such as Law at Griffith with the Southampton Institute under the aegis of Nottingham Trent University in the UK. Courses offered are BA in legal studies (LLB Hons 3 years, level 7) and the BA (Hons) in Legal Studies with Business (4 years, level 8). In addition most colleges offer other types of courses, such as the Preparatory Course, an intensive one-year course geared to the specific examination papers set by the Law Society, respectively the King's Inns. Another is the Certificate and Diploma Courses in Professional Legal Studies. This usually one-year (full-time) or two-year (part-time) course leads to a recognised professional qualification to work as legal executives. This course is run in conjunction with the Irish Institute of Legal Executives (incorporated in 1992) which provides a system of training and examination to obtain a recognised professional qualification for those engaged in all legal areas of employment. Both the Preparatory Course and the Certificate and Diploma course provide opportunities for non-law graduates who wish to pursue a career in law, thus 'convert' to a law path. These courses are also attractive for mature students and those who are already employed and want to develop their knowledge and skills in legal issues on a full-time or part-time basis.

In principle there is no difference between a law degree awarded by the different HE institutions. All courses provided by the different institutions are incorporated in the National Framework of Qualifications including the assignment of credit to major award-types. In practice differences between degree-courses may occur, depending on the institutional objectives of the law curriculum. Some law schools at universities claim to be strongly committed to the service of society through education, research and public service activities and claim more academic aims towards rigorous legal scholarship. Other institutions providing diploma courses and preparatory courses for the entrance examinations to the professional bodies are considered as alternative ways of entering the legal profession and are (according to some university respondents) less 'academically driven'. This may be related to admission policies of the various institutions, a matter which will be discussed in the section on access.

The following table presents the development of student enrolments at universities and institutes of technology from 1998 to 2004. Both types show a considerable increase in student numbers. For the colleges sector total figures are not known, but for the two colleges interviewed - Portebello and Griffith - there are in 2006 altogether 1100 students by far the majority of them being enrolled in the LLB courses.

Table 1: student enrolments in degree programmes of universities and institutes of technology 1998-2004

	1998	1999	2000	2001	2002	2003	2004
Universities Total	1512	1625	1894	2004	2467	2253	2678
B.CL/ L.LB	1027	1033	1285	1300	1384	1333	1802
B.CL/L.LB Comb*	371	421	444	478	545	586	
Postgraduate cert./dipl.						3	143
Masters	102	158	151	196	492#	267	649
PhD Law	12	13	14	30	46	64	84
Inst of Technology Total	430	524	577	592	677	709	638
NC legal Studies	341	397	424	362	417	458	422
ND legal Studies	52	75	29	53	63	75	
Bachelor + G.Dip.	37	52	124	177	197	176	216

*B.BL/CL combined with French/German, Irish, European studies

including Cross Border LL.M. provided jointly with Queen's University Belfast

Source: calculated on basis of HEA statistics.

The most common element in all programmes of both universities and other institutions is that they all are mainly followed by pursuance of particular professional qualification as provided by the two professional bodies which are entitled to recognise the qualification of a lawyer.

3.2. How to qualify as a legal practitioner

The Law Society of Ireland is exclusively responsible for the training of solicitors in the Republic of Ireland. For this purpose, the Law Society runs a three-year programme of study, comprising both academic and practice-based elements, with particular emphasis on in-office training apprenticeship. Any person with a degree in any discipline (and some qualified persons without a degree) may undertake this training, but in order to do so, one must inter alia first pass the Final Examination First Part (FE-1) comprising eight law exams and an examination in the Irish language.

Those without a degree who are at least 21 years old may also take these entrance exams on completion of a Preliminary Examination in three subjects (English, Government and Politics, and General knowledge). University graduates and holders of degrees awarded by the HETAC are exempt from this examination. Thus, one does not need a law degree in order to qualify as a solicitor. Nonetheless, the law exams required for entry to the Law Society's training programme are demanding and competitive and require considerable advance preparation.

Before starting the professional practice courses, the trainee solicitor must also obtain a two-year in-office training contract with a qualified solicitor. After being accepted, the candidate takes the 8-month Professional Practice Course I in the Law Society's Law School, before commencing 11 months of in-office training. After returning for the 3-month professional practice Course II, there is a further 10 months of in-office training. So it takes altogether 2.8 years to qualify.

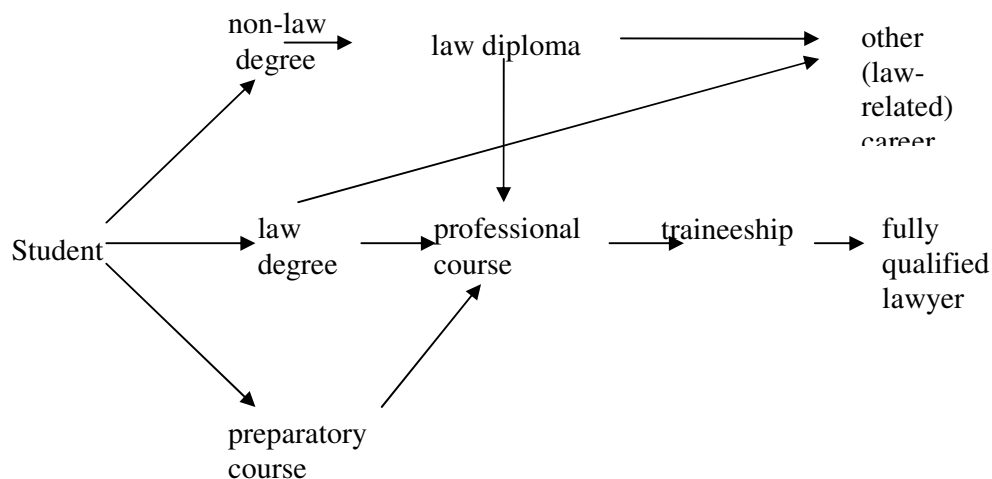
Those wishing to qualify as a barrister must undertake a two-year part-time Diploma in Legal Studies followed by a Barrister at Law degree, which is taken over one year full-time. This training is available only at Law School of the Honorable Society of the King's Inns. A person with a recognised undergraduate law degree is, however, deemed to be exempt from the Diploma requirement, but must pass the entrance examination in five subjects in order to be admitted to the Barrister-at-Law degree course. Those who do not hold an approved law degree must obtain the Diploma in Legal Studies before they can sit the entrance examination for a place on the degree course.

In addition, before practicing on one's own, a B.L. graduate is generally expected to 'devil' for a year, serving as an apprentice to an established barrister. For all persons, entry onto the B.L. degree is predicated on the successful completion of a series of law exams. It is important to note that for these purposes, as matters currently stand, the King's Inns does not recognise any Diploma or B.L. qualification other than that offered by the King's Inns itself (see for some recent developments below in the section on impacts).

With a recognised law degree it is 2.8 years to qualify as a solicitor and two years to qualify as a barrister. Although a law degree is the traditional route, it is not a strict prerequisite to qualification as a barrister or solicitor. It is possible to qualify without having first obtained a law degree. Indeed, an increasing number of students have entered the legal profession by less traditional routes. For example, the Postgraduate Diploma in Legal Studies (provided by Dublin Institute of Technology), though standing as an academic programme in its own right, is considered to be a useful primer for non-law graduates who wish to qualify as a solicitor or barrister. It is estimated that over the past five years at least 90% of students undertaking the PG diploma have done so with a view to progressing to take the FE-1 exams required for entry to the Law Society. The same counts for postgraduate courses (LLB) as well as the preparatory courses as provided by third level colleges which are very popular as alternative routes for those without a law degree to enter the legal profession.

Thus, the traditional route – going to university to get a law degree (BCL or LLB) – is not the only path into the legal profession. There are various alternative routes that might be taken and increasingly, students who aspire to a career involving law will attend not one but a variety of

different types of courses in different institutions with a view to passing the entrance examinations of the professional bodies. The various routes are visualised in the figure.



4. Curriculum reforms

4.1. *Bologna and the two-cycle system*

Quite consistently respondents stated that curriculum reforms in the last years were implemented because of its 'intrinsic merits' rather than as pure reactions to the Bologna process. "We don't fit neatly into Bologna" and "Bologna is secondary" were statements often made in the interviews. Law is seen as quite insular in the sense of operating in a very specific Irish context and jurisdiction. The current curricular structures have a clear purpose in the national Irish context whereby Europe is secondary. As said before, an important feature of the Irish HE system is that it is very demand-led and the enrolment and provision of law courses are highly indicative of market demand for these programmes. The curriculum should be as current and relevant as possible: "Our main driver is the market: what are the students looking for in terms of a degree". The various degrees, diplomas and certificates on various levels are meant to meet a variety of demands of students to enter in some way or another the legal profession.

The introduction of the National Qualification Framework was felt as a practical necessity to make the variety of courses in legal studies more transparent and to make them more visible for access, transfer and progression arrangements. In the past course loads of subjects in most law degree programmes varied enormously. To assure that every subject would have the same weight, there was a need to make them more consistent. For this reason law faculties adopted the national credit system which will meet the needs of learners in a lifelong learning context by facilitating credit accumulation and credit transfer across all sectors. "This is extremely beneficial as it is transparent and comparable", is the reaction from most HE institutions.

Having said this, most of the changes are felt in accordance with the Bologna process and the credit system is compliant with the system of ECTS. Having introduced the system, the marginals have been weighted in accordance with Bologna. Also the two-cycle system is in place, predominantly the 3+1 model: three years Bachelor degree and one year Masters (followed by doctorate). The functions of the Bachelor degree and Masters, however, have a specific interpretation. The Bachelor degree is clearly not meant as a qualification to legal practice, but functions as basis for further professional training as

provided by the two professional bodies. The function of the Masters is different and historically has not got much significance since it is not a requirement for professional qualification, contrary to most continental European countries where a Masters degree in law is standard for pursuance to further professional training. Asked what the benefits of a master degree would be, the following answers were mostly voiced:

- Masters programmes are interesting for those who have passed the entrance examinations for further professional training, but cannot yet enter or have not yet found a place for in-office training. Master programmes are often taken to bridge the time-lack.
- Masters programmes can be interesting for those who want a further specialisation in a particular field, either before they take professional training or thereafter when they are already qualified as solicitor or barrister.
- Masters degree is an educational attainment, it comes down to prestige or status and is not taken for specific career reasons.
- Masters has a greater currency abroad, throughout Europe and the Commonwealth, although it is believed that students do not take a master for this reason.

Given this variety of reasons the Masters seems to have a rather undefined purpose and universities don't feel any pressure to change towards a 3+2, nor to a 4+1 model. A two-years Masters would be too long and it is very unlikely that students who are waiting to get a training place want to enrol in such a programme. In fact, a two-year Masters would more than likely deter students as they would still have two years of professional studies to complete afterwards. Moreover, since the 'free fees policy' does not apply to Masters, there will be little impetus to extend the period to a two-years Masters.

There are, however, tendencies to give the Masters a higher significance than historically has been the case. As can be seen from the table on university enrolments there were in 1998 about 6.6% (102) in Masters programmes. This has increased to nearly 12 % in 2003 (267) and to 24% (649) in 2004. This is the result of an active policy of several universities in expanding their LLM degrees which give students the opportunity to choose from a wide range of subjects and to prepare a thesis on a topic of their choice. These degree programmes fit into the development of a particular research profile of a law school and thesis topics should be connected with the strength of the faculty. As Caroline Fennell notes, it is comparatively recently that law in Ireland has moved away from a vocational focus (as a sole pursuit) as now many students will not have vocational aspirations, but instead opting for an academic career (Masters and PhD) (Fennell, 2006). Given this research informed agenda, some informants said there is some pressure to have a Masters longer than one year, say four months extra. Now the programme has a semester structure and for the dissertation more time is required. This could become a general trend across law schools.

An illustration of a tendency to mingle the typical Irish system of degrees and diplomas into the Bologna two-cycle system shows the initiative of the DIT to re-validate the Postgraduate Diploma in Law. As part of this process, it proposes to offer to a select number of students who complete the Postgraduate Diploma in Law the opportunity to complete a Masters of Arts in Law (both are on the 9 degree level). The latter will comprise all elements required for the successful completion of the Postgraduate Diploma plus an extra 30 credits, made up of learning in advanced research methodology followed by a postgraduate dissertation requirement. The postgraduate diploma represents a well-respected alternative route into a career in law, and will continue to be relevant for those interested in pursuing careers as solicitors. For a few more academically-inclined students, the Masters will offer the opportunity to develop an in-depth expertise in a particular field of law, while offering staff the opportunity to deepen their own research.

4.2. Competence-based learning

Rather than the term 'competencies' the term 'learning outcomes' is most commonly used as far as Law curricula in Ireland are concerned. In the past legal skills were mainly acquired by studying substantive elements of law assuming that these skills would be developed more or less implicitly. Nowadays the substantive content has not changed, but there is overall more emphasis on what students on completion of their courses should be able to demonstrate in terms of learning outcomes. The NQAI has determined that there are three general strands of learning outcome that will be used in setting standards. These strands are knowledge, know-how and skill, and competence. A number of substrands are: knowledge, breadth, kind, know-how and skill, range, selectivity, competence, context, role, learning to learn, insight. Some law schools have developed these strands for their own programmes. The following list (excerpt of items) drawn from the self-study report of Dublin Institute of Technology (DIT, 2005) illustrates this:

Knowledge:

- A systematic and critically informed knowledge of an approach to the diversity of legal issues, measures, principles, doctrines
- A critical awareness of current legal problems and controversies and the ability to formulate informed, independent insights into such problems

Professional attitude:

- Understanding of the demands of working at a professional level in law
- An appreciation of the interconnectedness of legal issues in distinct legal fields
- An ability to scrutinise and reflect on social norms and relationships and to act to change them

Skills:

- Effective transferable skills and problem solving abilities to respond to an unpredictable and rapidly changing legal working environment
- An ability to outline and to formulate best model practices for the prevention and resolution of a wide variety of legal disputes
- The ability to conduct independent research into issues of legal concern

Universities utilise less detailed lists of outcomes, or are in the process of developing them. Several respondents emphasise that most academic programmes not merely aim to develop the ability to understand the law, but to equip students with an advanced and particularised knowledge, understanding, capacity in identifying, addressing and critiquing the specific legal issues arising in complex fact scenarios, and to suggest solutions to legal problems. As a further result of such learning, students will be expected to demonstrate an advanced capacity to articulate and implement best model practices for the prevention of litigation and legal disputes in a variety of contexts.

Most universities have adopted learning methods which aim to enhance the practical legal skills of students. For example, at Trinity College and University College Cork the moot court and trial advocacy modules train students in the art of advocacy. There has also been a move towards more problem-based learning whereby a mock legal problem is presented to the student to solve. The use of multi-skills labs are also becoming popular. There is also greater emphasis on relevance, professional competency and learning outcomes, and ethics and communication. These curricular changes are in response to a perceived need to prepare students for professional life and general concern to improve courses and diversify student options.

Another curriculum strategy of skills training is Clinical Legal Education introduced for example at NUI, Galway. This is experiential learning which aims to bridge the gap between theory and practice and brings skills training - traditionally in Irish legal education the preserve of the professional bodies - into the undergraduate curriculum. This is meant for 3rd year BCL students (6 ECTS) (Donnelly, 2006):

This optional one-semester module requires that students utilise their legal training in suitable work placements for ten weeks. Students should generally expect to work for 8-10 hours each week (i.e., the equivalent of two half days or one full day). The module will open with an introductory seminar, in which students will be informed generically as to the nature and scope of their responsibilities, and close with an interactive seminar, in which students will share their individual experiences. Assessments will be predicated on mid-term and final reflection papers. Also, satisfactory written evaluations from supervisors are a prerequisite to successfully completing the module.

Clinical legal education challenges the traditional boundary between academic and professional education. These are not mutually exclusive. As Quinn puts it, the question of “how to teach law in fact – and whether we should teach it in isolation from the profession or in partnership with the profession – is ultimately inseparable from our understanding of the purpose of law and the role we are expected to play as lawyers” (Quinn, 2006). In his view the border between academic and professional legal education needs to be re-drawn whereby the law degree needs to become more clinical and much more interdisciplinary in its focus. This entails a diversity in staff, both practitioners and academics. If the curriculum is taught by too many academics, this may – as was stated from the side of a university – ‘harm the competency-based approach in legal studies’.

4.3. Flexible Learning Paths

The National Qualifications Framework is seeking to facilitate modular approaches and structures, and multiple access points to programmes. This includes entry to multi-year programmes at differing stages and the possibility of programmes having more than one entry point in the year. It will also facilitate learner-earners and learners interrupting their studies, who may also earn credit for the learning outcomes already achieved.

Regarding the study of law several institutions have sought to modularise programmes in order to facilitate more flexible and greater interdisciplinary education and student choice of subjects and degree combinations, to encourage transferability, comparability and transparency within the broad sector, and underpin greater efficiency within the sector. These initiatives are taking place principally at the institutional level. While there is broad government and Higher Education Authority (HEA) support, there has been no formal mechanism to fully enable this process.

Generally speaking the universities are much slower to engage with this level of curriculum reform than the institutes of technology which seem to have higher levels of flexibility in study routes, a diversity in entry and exit points, and flexible learning approaches. These institutions are also more flexible towards mature students and students from diverse backgrounds, and towards those already in employment. For example, the Postgraduate Diploma at the Dublin Institute of Technology taps into a healthy market of talented graduates hoping to diversify from a variety of disciplines into a law career. It offers a flexibility not usually encountered in relation to law programmes, a chance to combine valuable skills already acquired in other fields (e.g. business, finance, science, arts and languages) with a specialised competence in law. Additionally, it is expected that the modularisation in 2005 will facilitate the cross-fertilisation of programmes, with students on other programmes being facilitated in taking modules on the Postgraduate Diploma in Legal Studies.

Although at universities modularisation is at a more premature stage, several developments were found which are worth mentioning. Most university law degrees are divided between compulsory modules which must be taken by students and a range of elective modules from which students can choose. In the first year this is generally restricted, but the number of electives that can be taken increases in subsequent years. Some universities also offer Bachelor programmes on a part-time basis directed primarily at mature people usually in employment with lectures taken place in the evenings and weekends. Also postgraduate (LBB) programmes designed to provide a legal education to graduates in disciplines other than law gains more popularity. The combined degree courses were mentioned before (law and business, law and languages etc.). In addition, some schools provide an

innovative way of differentiating their programmes from those of other law schools. For example, one of the outcomes of the Quality Review of the Limerick School of Law is that “the interdisciplinary nature of the undergraduate degree should remain a major asset and should not be threatened by the introduction of a ‘pure’ law degree” (University of Limerick, 2004). Other universities have been innovative by offering specific interdisciplinary programmes, e.g. law and taxation, law and accountancy, criminal justice and the like. But also interdisciplinary programmes that seek to develop synergies between law and the humanities were mentioned. Other law schools particularly at the older universities maintain a strong commitment to rigorous legal scholarship and to a research profile which places them at the forefront of legal research.

Several institutions offer more progression routes in their programmes and suggest several learning paths to their students. Official policy also encourages the movement of students between sectors. Since the universities only offer degree and postgraduate degree level programmes it is expected that a higher level of transfer would occur from the institutes and colleges, which specialise in sub-degree programmes. In practice, however, this level of transfer is quite modest. One reason is that as indicated before the Dublin Institute of Technology creates more progression routes within its institution, from Certificate to Diploma to Degree level and currently by re-validating its Postgraduate Diploma and connect this with a Masters in Law. This cumulative award structure within the sector reduces the need for students to seek progression routes to the university sector. For students from the colleges a move into the Diploma course at DIT can be an attractive option, but national figures on these movements are not available. On the other hand, when universities were asked whether they would take graduates from the non-university sector, they responded that there is no objection whatsoever, and these graduates can apply as well on an equal basis.

Despite all this growing flexibility in curricula it should be noted that the influence of the professional bodies on the curriculum is present in the sense that there is some pressure that certain subjects should be covered. Especially the curricula of the preparatory courses as provided by some colleges are strongly determined by using syllabuses as developed by the professional bodies and tutoring is tuned to the entrance examinations.

4.4. Recognition and mobility

The recognition of previous or prior learning achievements, including achievement that has not previously been recognised, is an increasingly important part of the National Qualifications Framework. The development of policy initiatives to facilitate the inclusion of the full range of awards arising from formal, non-formal and informal learning and the availability of alternative routes to meeting entry requirements are all actively under consideration. In 2005 a Recognition Implementation Group has been established comprising representatives of the NQAI, the Department of Education and Science, the HETAC and the universities. This group is responsible for assisting in the management of the implementation of national policy to the recognition of international awards.

ECTS and diploma-supplements are ‘emerging issues’ at law faculties. Although still in process, the benefits are generally underlined. Benefits mentioned are that this allows students to transfer between disciplines and the recognition of foreign students. Moreover, this allows students who have no degree or diploma to get some qualification, albeit there is some confusion with the current term ‘diploma’ in legal studies. Some institutions have started to provide transcripts to students at the end of the year and issue supplements at institute level.

For ‘designated’ institutions such as Portebello and Griffith college, HETAC qualifications, as the national qualifications of a constituent member state, are recognised internationally. Holders of HETAC qualifications can access a wide range of postgraduate and professional programmes both in Ireland and in Europe.

For law schools the international recognition is an emerging issue. Several institutions are active in Erasmus and Socrates networks and have established partnerships with universities in Europe and in North America. Students of BCL Law and French or German spend usually their third year in a partner university at a French respectively German university. For BCL International Law students

links have been established with European and North-American universities. Postgraduate programmes in European and Comparative Law have a strong international orientation and aim at introducing students to the comparative study of the legal systems of the European Union, individual member states (particularly UK, Germany and France). Also in the field of legal research law schools participate in international programmes, such as on human rights.

As far as the international recognition of lawyers is concerned, the Qualified Lawyers Transfer Test enables lawyers qualified in certain countries outside Ireland, to qualify as solicitors in this jurisdiction. All EU countries are covered by the QLTT regulations. Furthermore, the Law Society is in the process of recognising attorneys from the jurisdictions of the State Bars of New York and California as well as from the Law Society of New Zealand, albeit candidates are required to take the transfer test as well². Kings' Inns applies a set of procedures for international recognition. Equivalence is looked for and acceptance will be taken on a case-by-case basis.

Conversely, Irish Bachelors graduates and those who took the preparatory course at some college are recognised for the New York and California Bar examinations.

5. Impact

5.1. Access

An important goal of Irish HE policy is to expand access and to create more opportunities for non-traditional student groups. The various routes in legal studies across institutions and types of programmes as described above clearly contribute to this policy. The enrolment figures over the years confirm its success, more and more people are graduating with law degrees and more people are taking the professional entrance examinations.

Also the flexibility and permeability between the different programmes have been extended considerably, including the various routes towards the professional training programmes provided by the two professional bodies. On various levels there are more efforts to be as flexible as possible. For example, the LLB with advanced entry is in limited circumstances open for students with a non-law degree. Although the Masters is generally limited to Honours law graduates, exceptions have been made for example for those with a Postgraduate Diploma in Law (from DIT) who wish to pursue some interdisciplinary LLMs.

Differences may occur due to different admission procedures. The admission to higher education is regulated by the Central Application Office (CAO). A 'points system' operates whereby students are assessed on the basis of their performance in six subjects in the leaving certificate at the end of the second level education. Examination places are allocated on a competitive basis. In general points requirements are higher in the universities than in the other institutes and are especially high in some professional faculties among them law (Clancy, forthcoming).

As one respondent from a law school says, "we are more rigorous in accepting students than other institutions and our students have a higher calibre". At the same time most universities indicate that they offer a number of free places for non-traditional students and disabled people and some universities have designed special programmes for them. As one dean puts it: 'by having these programmes, it provides the greatest potentiality for flexibility'.

The Institutes of technology and the third level colleges (the latter operating on a private basis) tend to adopt lower entry requirements. They are more equipped to non-traditional groups and various

² The Competition Authority qualifies the present system for the recognition of foreign-qualified lawyers from non-European Economic Area (EEA) nationals as "disproportionate, unduly restrictive and operates to the detriment of buyers of legal services. This effect is particularly strong in areas of international law, such as finance and banking, mergers and acquisitions and competition law". The authority links up the low level of entry of non-EEA qualified lawyers and the transfer test which deters entrants (Competition Authority, 2005: 97).

programmes (including access programmes) are designed to create opportunities for mature students, for those who wish to change their career, for additional learning in the legal field in the context of lifelong learning. There are many opportunities for people willing to take a legal study and distance learning and evening courses are widespread. Their admission is not regulated by the CAO and in principle institutions are less selective. Most often applicants are assessed on an individual case-by-case basis whereby it is up to them to prove that they are eligible to take the course. As a respondent of a college states:

“Admission to university is limited. Students may miss points in their admission procedures for some university law schools and we are prepared to accept them.”

Despite all these efforts in widening access, national data suggest evidence of increasing social selectivity by sector. Although more college places becoming available, higher professional, employers and manager groups are more highly represented in the university sector while the three manual (skilled, semi-skilled and unskilled) groups, other agricultural and own account workers groups have their highest proportionate representation in the non-university, or institute of technology, sector (Clancy, 2001). In relation to this, the recent decline in the numbers leaving second-level schools, consequent on the decline in the birth rate after 1980, has disproportionately affected the institutes of technology while the universities have been largely protected from the consequences of this decline (O’Connell et al 2006).

The access to the training programmes provided by the Law Society and King’s Inns is in principle open for all graduates from all institutions with degree-awarding powers and open for those with a non-law degree. Asked whether admittance is restricted the representative from the Law Society states:

Yes to an extent. But in recent years we have tried to accommodate all those eligible to do our PPC1 course and this year in fact we have three courses running with just over 600 students (...) By necessity and to avoid a backlog the numbers permitted to enter has increased. Once a student is eligible to attend the PPC-1 they will get on a course sometime – there is no quota system in place.

King’s Inns adopts a similar policy³.

Of particular note in the context of accessibility is the report of the Irish Competition Authority entitled *Study Competition in Legal Services* (2005). The report is quite categorical in its assertion that “... the reservation of professional legal education to the Law Society and King’s Inns restricts competition.” Both professional organisations are criticised for operating a monopoly on the education and qualification of legal professionals. The King’s Inns’ own Diploma in Legal Studies is currently the only recognised programme allowing a non-law graduate to proceed onto the Barrister-at-Law programme, which is a prerequisite to qualification as a barrister, despite the fact that the learning outcomes of other Diploma programmes provided by HE institutions are - as is contended by these institutions themselves – of a similar standard. As the report states

What is being proposed is a fundamental reform of the regulation of legal services to make it easier to become a lawyer, easier to hire a lawyer and easier for lawyers to organise themselves. This includes (...) the abolition of the educational monopolies enjoyed by Kings’ Inns and the Law Society in respect of professional legal (education ...) the abolition of the requirement on certain applicants to acquire the Diploma in Legal Education before sitting the King’s Inns entrance examination.

³ Some debate is taking place on whether there are restrictive conditions on entry particularly in the context of rules regarding exemptions from the entry requirements. It would be beyond the scope of this report to go into further details (see for an historical overview, Patricia Herron, 2006),

Apart from the need for greater competition, the Competition Authority motivates its proposals by referring to similar reforms undertaken in other countries, especially common law jurisdictions and to the Barroso Commission which has put the removal of unjustified domestic restrictions on competition in professions as one of its central Lisbon Agenda objectives. As the Chairperson of the Authority puts it (Chairperson, 2005):

To the extent that reforms in the UK and other EU member states lead to greater competition there, and that internal market barriers continue to breakdown, lawyers in Ireland will increasingly face indirect and even direct competition from those lawyers qualified or simply operating in other member states.

It recommends that pending the establishment of a Legal Service Commission, both professional bodies should consider to allow other providers to facilitate the provision of legal professional education. In the meantime a programme at the University of Cork has been validated to allow graduates to sit the entrance exam for the BL run by King's Inns. Other institutions are seeking recognition as well which, if successful, may lead to an opening up of the currently restricted market for legal education.

5.2. Graduation and employability

The numbers of university graduates have increased from 620 in 1998 to 1048 in 2004. For the IoTs the numbers of graduates have not increased substantially over these years, from 392 in 1998 to 418 in 2004 (data from HEA). Since the Bachelor degree functions primarily as the stepping stone for further professional qualification, it is generally expected that students take this route. Most informants from universities say that more than 70% of their graduates do so. The percentage of those with pure law degrees (BCL, LL.B) is much higher, while those with combined degrees also tend to move into other careers.

For graduates from colleges and diploma-holders the percentage is very high, not surprisingly since these courses are particularly tailored to the professional courses. The Law Department of Dublin Institute of Technology estimates that over the past five years, at least 90% of students undertaking the PG Diploma have done so with a view to progressing to take the FE-1 examinations. Very few proceed directly into full-time employment. Similar percentages are mentioned for the college sector.

There is a general belief that those who directly after their degree enter the labour market are in a weaker position. In all the interviews it was stated that most employers ask for candidates with the appropriate legal qualifications. For working as a solicitor or barrister this is obvious, but also employers in more general legal functions are definitively seeking for qualified lawyers who find employment in various sectors of the economy. Non-qualified graduates might do those jobs as well, but qualified lawyers have a clear advantage and much better career prospects in the long run.

Nevertheless, a qualification in law does not necessarily require the holder to qualify as a legal professional. A myriad of other options exist. A legal qualification is useful in a wide variety of contexts and represents a significant advantage for graduates seeking employment in the public and civil service, financial services (banking, insurance), social services, human rights education and human resources. In particular legal compliance posts are opening up in many organisations, both public and private, reflecting the pressing need for professional in-house advice around compliance with the burgeoning and evolving legal requirements facing the modern workplace (cf. DIT, 2005, p. 8, 25). Combined degree courses on a complementary approach to two principal disciplines (e.g. Law and Business; Law and Accounting) are designed to provide students with expertise in the twin disciplines. These degree programmes are recognised by the legal professional bodies in Ireland, but graduates have also found employment in a variety of sectors: legal professions, financial services, public administration, local government, journalism and academia. The proliferation of regulatory legislation means that many employees require some awareness of law in its application in certain fields, such as social care, human resource management and law enforcement.

The first destinations survey six years after graduation does not distinguish between those who continue their study for legal qualification and those who directly enter into the labour market. The majority of the graduates (65%) is employed in the Legal, Banking, Finance & Insurance Services, 15% in non-market services (Education, Health) and 7% in personal services. Their mean salaries are not higher than the overall mean of all graduates, and a relatively larger part of graduates are at the lower salary bands (HEA, 2006), presumably the effect of a large group of graduates that is in further professional training. Alumni offices at institutions generally do not keep track of the careers of their graduates, so it remains difficult to assess the employability of law graduates and distinguish between for example Bachelor graduates who proceed with further professional training and those who immediately enter the labour market.

There is some debate whether the numbers of students who will qualify as lawyers in the coming years will be more than the traditional legal professional market can sustain. It is argued that Ireland is almost certainly training too many lawyers – and this could be a cause of the litigious society. Von Prondzynski states that Ireland needs “fewer law graduates and less litigation, and moreover aspiring lawyers should do their studies at postgraduate level only” (Von Prondzynski, 2006)⁴. Acknowledging the issue of too many students, Fergus Ryan argues that a law degree is a most valuable and enriching qualification. The knowledge and skills gained on a degree course in law are easily transferable to any number of non-legal career options (Ryan, 2006).

5.3. Mobility

Increasing emphasis is being placed on the need for greater student and academic staff mobility within Ireland, and between Ireland and the rest of Europe. Ireland has had a relatively poor tradition of domestic mobility at the undergraduate level, and in line with other English-speaking countries, of outward mobility. The Higher Education Authority is seeking to substantially increase mobility under the Erasmus/Socrates programmes, and to utilise other EU dimensions to encourage the international agreements. There is virtual universal adaptation of the European Credit Transfer System (ECTS). Academic staff have also become more mobile, although not simply in response to Bologna but to a wider trend of creating international links in line with general globalisation. Changes or rather additions to curriculum, e.g. international and comparative law, family law, human rights and European law have had some impact on Erasmus and Socrates involvement.

Some institutions like Portobello College Dublin explicitly refer to programmes that are designed to teach students the specific skills required by companies in the developing global economy. “Language skills and an understanding of cultural diversity make graduates a precious asset for any internationally focused company”.

There is a broad tendency to give the Masters degree more focus and purpose than before. Enhancing the attractiveness for students from other European countries was also mentioned as a motivation for developing the Masters programme. Another tendency is also that Bachelor graduates may take a Masters degree elsewhere (either at another Irish university, in Europe or US) and come back for their PhD in their alma mater.

Asked about initiatives to further the international links several practices were mentioned:

- developing a regular seminar series
- encouraging faculty to attend and present at appropriate international academic conferences and seminars
- developing further international collaborative research projects.

In addition several law schools have expanded their postgraduate programmes considerably in the last few years. Recognising the benefits that an internationally attractive postgraduate programme would bring to students, some schools wish to continue to aspire to and attract the participation of

⁴ Von Prondzynski refers to the US model of encouraging would-be lawyers to study something else first, and then have a postgraduate degree programme which qualifies them for practice in either profession.

international students on the doctoral programme. They are investigating new areas which offer opportunities for research liaison and new areas of specialisation which may result in further profile building between universities on the Masters and Doctoral level.

5.4. Quality of Education

Although all universities apply quality control procedures, there is no really developed degree of comparability between them as they benchmark themselves. There is a general belief though that learning has been made more interesting and relevant in response to changing teaching philosophies and increasing emphasis on quality assurance mechanisms across higher education. The curricular innovations mentioned before such as modularisation, flexible learning paths to suit individual needs and interdisciplinarity are believed to contribute to the quality of education. According to most of those interviewed, the National Framework of Qualifications has significantly altered the landscape in which educational programmes must operate. Building upon the Bologna declaration, the Framework creates consistency in quality and rigour between legal qualifications awarded by different institutions.

Since universities and other institutions differ in the selectivity of new entrants, it may be questioned whether there is a difference in quality of graduates. Anecdotal evidence suggests that university graduates are of a higher 'calibre'. On the other hand, reference was made to the achievement of students from Griffith College who took six of the nine Law Society entrance examination first prizes for 2003.

The two professional bodies generally favour the curricular innovations in law. Flexible learning paths, modularisation, learning outcomes, practice-based learning were mostly mentioned as positive developments. At the same time the bodies set their own quality standards for those aiming at a professional qualification: "we have our own entrance exams and when students pass that we believe they are all on an equal footing". The two professional bodies do not provide information on possible quality differences between candidates in their professional course with different backgrounds, say BA/Honours university degree or LMM or those who have entered via the preparatory course (without an undergraduate law degree) or a college degree.

5.5. Cost-Effectiveness

Law remains exceptionally popular and requires comparatively low resources for a large group of students, and thus is very cost-effective. Modularisation and particularly integrating modules with other departments may achieve economies of scale. There is a proliferation of courses and "they all make a surplus". The staff/student ratio in some schools of law can vary considerably. Some mention 41:1 which is experienced as bad and reflects a wider pattern of under-resourcing. Concern is expressed at the ability to continue to sustain activities with such high levels of student/staff ratios (University College Cork, 2006). Other law departments have a more favourable financial position.

In the context of the discussion on the monopoly position of the two professional bodies, a debate has taken place on the cost-effectiveness of the training system. According to the Competition Authority opening up the market for education could lead to costs incurred by trainees apart from the actual fees falling. The Law Society, however, "cannot imagine" that the competition produced by another institution would lower the costs of a trainee solicitor, since the Society is non-profit making and entirely self-financing. It would not be economically viable to have many divisions to deliver the training, a view which the Competition Authority disputes.

It should be added some universities complain that their graduates have to sit in the entry examinations for the same subjects as they have been examined as part of their law degree. This imposition of an unnecessary series of examinations, which is the Law Society's FE-1 examination, has been criticised on educational, economic and equitable grounds. Graduates have to take an extra hurdle which is not cost-effective and does not display much trust in the law degree. "This is unfair to people who have done a full legal training".

6. Conclusions

In Ireland there are several drivers for curricular reforms, and as legal education is concerned strongly determined by the national context. Reforms are a response to national policies and developments, and cannot be traced back immediately to the Bologna process. However, it is fair to say that the Bologna process has been influential as well and has brought about changes in legal education. The following points stand out which illustrates how the Irish case can function as an exemplary case for further implementation of the Bologna process in legal studies throughout Europe.

1. In Ireland legislative reforms were enacted which generally are believed to be consistent with the Bologna process. Particularly the Qualification Act of 1999 led to the establishment of the National Qualifications Authority of Ireland which is responsible for the National Framework of Qualifications. This Framework, which emphasises award descriptors and learning outcomes, is the primary Irish government policy instrument that has influenced curricular change. It has significantly altered the landscape in which educational programmes must operate. For legal studies this Framework is felt extremely beneficial since it formulates learning outcomes at all levels of legal education and structures the enormous variety of certificates, diplomas and degrees in a transparent, compatible and comparable way. This facilitates access, mobility and progression throughout the span of legal education and training provision.
2. While the National Qualifications Framework is consistent with the two-cycle-system according to the Bologna process, the duration of the Bachelor Law degree (BCL, BLL) is normally three years (with a few exceptions of four years), while the Masters is one year. This is not in correspondence with the general tendency in other countries towards the 4+1 or 3+2 model. Although it is not clear whether the learning outcomes of Irish Masters are comparable with a Masters obtained in other European countries after twice the length of study, it is not felt that Bologna exerts any pressure to change the Irish 3+1 model. No concern has been found that Irish Masters degrees would not be recognised elsewhere, hence disadvantaging Irish universities and the holders of their degrees compared to their counterparts in Europe.
Apart from the Bologna process, it is unlikely that Masters programmes will be extended to two years. Given the functions attributed to a Masters, a two-year Masters would more than likely deter students as they would still have two years of professional training to complete afterwards. Moreover, since the 'free fees policy' does not apply to Masters, there will be little impetus to extend the period to a Masters of two years.
3. There is a tendency that Irish Bachelor graduates may take a Masters elsewhere in Europe and come back to Ireland for their doctoral studies. In the context of this growing mobility, several law schools use their postgraduate programmes for profile building in specific areas, thereby strengthening the connection with their research capacities. This may enhance the attractiveness of Masters programmes for students from other European countries.
4. While the majority of graduates take the route to professional qualification through the training programmes provided by the two professional bodies, universities and other third level institutions consider their degrees and diplomas very useful for those who have not the purpose of qualifying as a lawyer and are not focused on litigation in courts. Many other options are open and there are significant advantages for graduates seeking employment in the public and civil service, business and financial services. Contrary to most other European countries, the Bachelor degree is a mobility point, not only to further professional training or continuing for a Masters, but as a qualification for the labour market.
5. Curriculum reforms have been a reaction to growing demand for more opportunities to study law, including demands from groups who previously have had little access to legal education. Universities, institutes of technology and third level colleges all are in some way or another involved in establishing access routes, learning outcomes, flexible learning paths and modularisation. These developments are geared to the specific interests and concerns of students and display a proliferation of course provision and alternative options for a career in law. They all

have their surplus. All these routes are clearly embedded in the National Qualifications Framework which maps well with the Bologna process and which enables students through diploma supplements and a credit system (consistent with ECTS) to transfer between programmes and institutions.

There are curricular innovations which break through traditional distinctions. More emphasis is on interdisciplinary programmes which seek to develop synergies between law and other disciplines. Also the traditional divorce between academic legal education providing a solid theoretical education and the practical training by the professional bodies is no longer taken for granted. Curricular innovation such as clinical legal education or a focus on practical problems and skills training may enhance the employability of graduates for a variety of professional roles both for law-trained persons and persons who have not law as their first degree.

6. The monopoly position of the two professional bodies in providing education and training for professional qualification has been debated and it has been questioned whether this position is beneficial to the profession and to society as a whole. The suggestion to consider allowing other providers to facilitate the provision of legal professional education has led to the validation of the programme at one university. A few other institutions are seeking recognition as well which may lead to an opening up of the currently restricted market for professional legal education.

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Case study: The Bologna reforms in the field of history in Finland¹

1. Introduction

Since 1990, Finnish policies on higher education have been very innovative and closely related to the economy. Higher education and research have been important policy instruments for the development of the economy, and higher education institutions are considered to have a strong responsibility for the development of the respective regions. One of the most visible developments is the very rapid establishment and expansion of the polytechnic sector, which in itself has challenged the universities. Still, Finland is characterised by having a very large number of universities compared to its population, and the university sector includes a number of relative small and specialised institutions. The polytechnic sector and the university sector in Finland are kept quite separate to ensure a clear labour division. Finally, Finnish policy in general has been characterised by a strong commitment to adapt to European developments. The government has played an active role in the Bologna process by organising meetings, setting up committees to prepare changes in the legislation, and establishing disciplinary working groups to make curriculum reforms. Also the basic units at Finnish universities have been active in their curricula changing processes related to or caused by the Bologna process. For the reasons mentioned above, Finland represents an interesting case.

The most visible developments in Finland are related to technology and innovation, which raises questions concerning the status and the development of the “soft” sciences. History is a field of study and research with strong academic traditions and is important for the development of the national identity. Both aspects point towards the resistance to rapid reforms in general, and especially towards a reform like the Bologna process with its strong focus on the European dimension. History in Finland may therefore be regarded as an interesting example of a slow adopter, and as a test of the ability for higher education systems to introduce radical changes.

2. The context

The welfare of Finnish society is built on education, culture and knowledge. This Northern democracy of five million people displays a very positive attitude towards education and has become well-known for its high ranking universities in the recent PISA studies.

The Finnish economy is dominated by three almost equally important export sectors: electronics and electro-technology; metal and engineering; and forest industry products – which largely account for the massive expansion from 23% of GNP in 1990 to 42% of GNP by 2001. Information technology has clearly been a key in this development, and in turn this has been made possible by a rapid increase in R&D spending, as well as related innovation and product development.

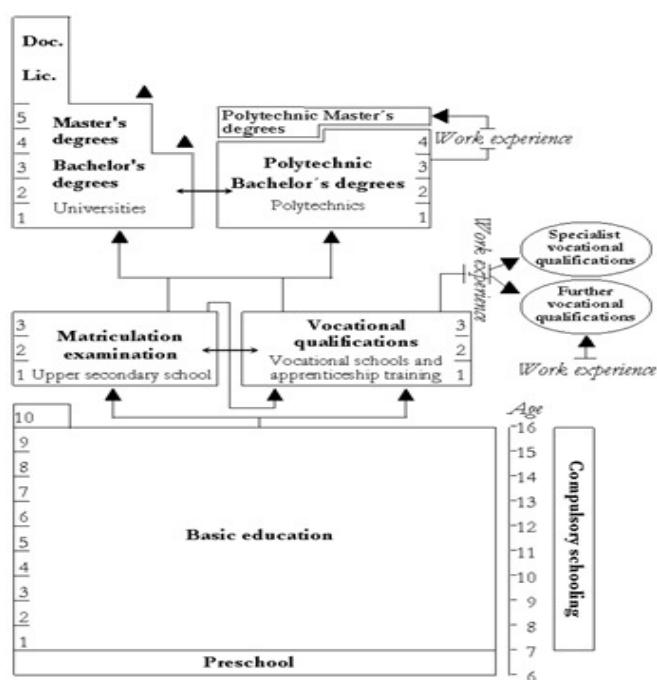
The advent of the EU has had a profound effect on opening up markets, but also on greatly increased competition in the food sector. About two-thirds of the Finnish population (68.2 percent) participate in the labour force, a rate somewhat above the OECD average, while the rate of unemployment is 8.4% (OECD, 2006).

There has been a rapid and impressive rise in the educational level of the workforce. For example, out of the 23 – 34 age group 40% have a tertiary degree in contrast to 15% of the 55 – 64 age group. Subsequently, those entering the labour force today are highly educated.

¹ This case study was written by Per Olaf Aamodt with support from Tone Cecilie Carlsten

The size of the 20-29 year-old age cohort in Finland is forecasted to be the same in 2015 as it was in 2005. If participation rates remain unchanged, aggregate tertiary enrolments should, therefore, remain unchanged. OECD member countries are facing a 3% decline in this age cohort in these years, with some countries in Eastern Europe and Mediterranean forecast to experience a 20% or even 30% decline in the size of this age cohort. Seen in this light, Finland faces a comparatively stable demand for tertiary education.

3. The higher education system



Finnish Education System. (National Board of Education www.oph.fi)

As far as the higher education system itself is concerned, the dominant feature is the dual or binary system of universities and polytechnics.

The university sector is composed of 20 institutions (10 multi-faculty and 10 specialised) with Bachelor, Master, licentiate and doctorate studies. Universities have the obligation to provide scientific and arts/humanities higher education based on research; promote free research and to educate students to serve country and humanity. As of 2005 universities are expected to interact with society and promote the social impact of their scientific and cultural activities. It has evolved as a sector in a number of different phases marked by an extension of university education to all regions, differentiation of missions and expectations, and an articulation with regional agendas.

The polytechnic sector, which is governed by the Polytechnics Act of 2003, comprises 29 institutions. The sector followed an evolutionary period of development over a decade. It is dedicated to the professionally-oriented higher education and applied research that support regional development and adult education principally in engineering, business and health care. A principal feature of the undergraduate and graduate degrees is practical training.

The binary system has been subject to a number of evolving assumptions and policy choices. Originally, polytechnics were conceived as means to overcome the functional shortcomings in the system in 1989 and as means to clear a vocational and matriculation backlog. During the 1990s, polytechnics continually reached an equal status with universities although with a different mission albeit the views that largely favoured polytechnics acting as feeders of universities. The implication of this was a theoretical student choice of higher education institutions with different profiles.

4. Higher education reform

In order to strengthen the position of Finnish universities in the European Higher Education Area, Finland reformed its degree structure and devised an international strategy for the Finnish higher education system (Jakku-Sihvonen & Niemi 2006: 18).

Finland, along with 28 other countries in Europe, signed the Bologna Declaration in 1999. The reform of higher education known as the Bologna process is not the first and definitely not the last reform facing Finnish institutions of higher education. The implementation of the process is, however, somewhat different from the previous reforms. This may be one reason why the universities have, after opposing the process in the beginning, been very actively involved in the process (Pyykkö 2005).

In this degree reform, the Finnish Ministry of Education delegated the practical implementation to the universities to a larger degree than in the previous reforms. The ministry concentrated on the preparation of legislation, that is, on the preparation of the changes required by the Universities Act and of the new Government Decree on University Degrees. The choice of this approach is related to the high degree of Finnish university autonomy. The division of labour was a natural solution and significantly encouraged universities to commit to the reform. The universities felt they have done the work for and by themselves instead of being given orders from above.

In addition, the Ministry of Education has allocated project funding for the process. The project funding is partly intended for the degree reform itself and partly for the development of university education in general. The largest project – "Walmiiksi Wiidessä Wuodessa" (W5W, "M.A. in five years") – has been coordinated by the Universities of Oulu and Kuopio, but project funding has been allocated for all the other universities in the country as well. The name of the W5W project reveals that one of the national objectives of the Bologna process is to promote the completion of degrees. The long duration of studies is a problem in Finland, especially in the so-called general fields that are not strictly professionally-oriented and where programmes are not organised in a course format. The prolongation of studies is mainly due to the fact that students work during their study years. The rationale behind has been that in this way students gain work experience. However, by enhancing study guidance, planning and a follow-up, it should be possible to shorten the time to graduate. The fact that the previous specific decrees on degrees in each field of study have been replaced in the Bologna process by one common decree that includes university degrees in every field is a significant change in the Finnish system. The new Government Decree on University Degrees applies to students of the Humanities, the Natural Sciences, Medicine, the Technical Sciences as well as those in Arts. This means that the decree must be very general in nature. As the practices in a certain field of study must be similar throughout the country, it became necessary to agree on the national level degrees in each field. For this purpose, the Ministry of Education founded national field-specific coordination projects and appointed their coordinators. Some of the projects are wide-ranging, for example, in the Humanities and Natural Sciences, and others are narrower, such as in Social Work and Pharmacology. The Ministry of Education also allocated funding for the projects.

The situation in Finland is different from many other European countries since a two-cycle degree structure and ECTS credits were in place already before the Bologna process. In the last decade before the reform, however, the two-tier system has been "sleeping". Study programmes were mainly designed as 5-year programmes, and with a few exceptions, the Bachelor degree from universities was not recognised as an adequate preparation for the labour market. There are a few examples of university Bachelor programmes that are recognised in the labour market, as for example in

pharmacy. In fields like teaching and engineering, the three-year Bachelor degrees have no value on the labour market.

Bachelor education is the main task of the Polytechnic sector. The Finnish credit unit (an input of 40 hours of work per credit by the student) has been implemented for over 25 years already. The ECTS credits are calculated in a new way (1/60 of the annual input of 1600 hours of work by the student per credit), but quantitative measurement as such is familiar.

Graph 1: Governance of a degree-structure reform in Finland

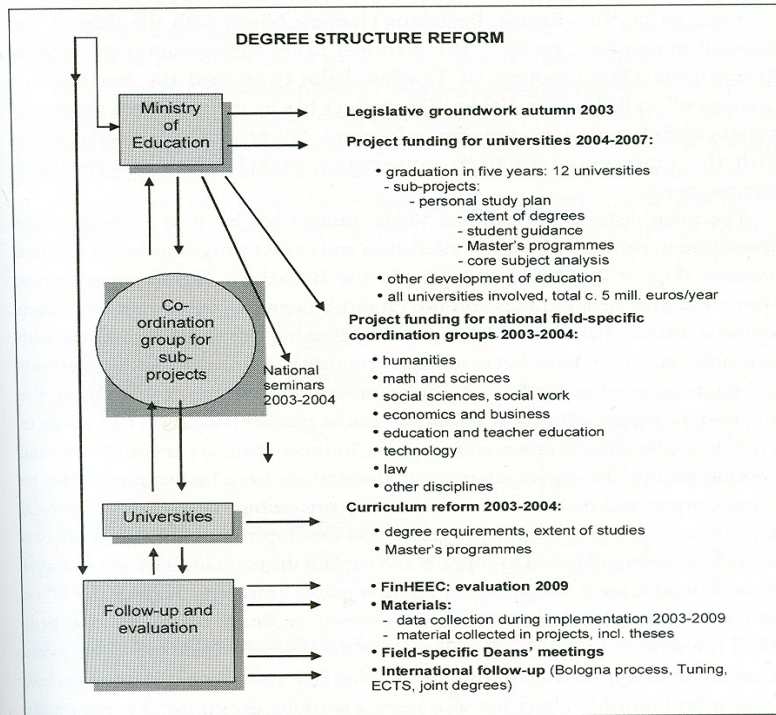
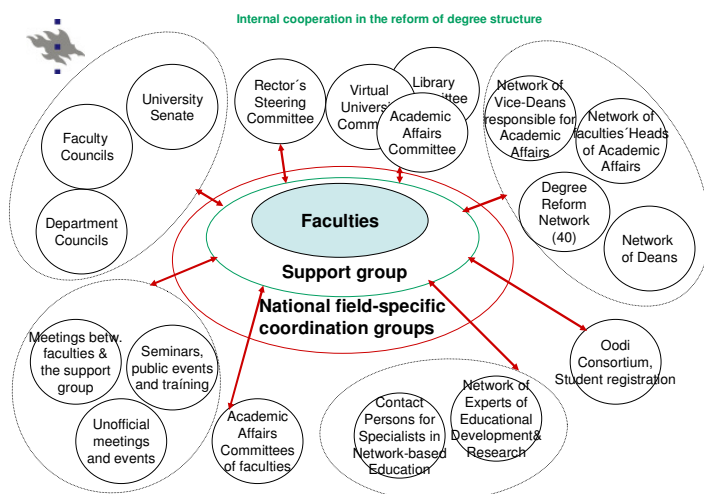


FIGURE 1. Role of the Ministry of Education in the reform of the degree structure

The national reform process is illustrated in the figure above (Jakku-Sihvonen & Niemi 2006, p. 21). The universities started their curricular reform process prior to the decision from the Ministry. This was partly because it was considered necessary. Another clearly-stated reason was that universities knew that the reform was inevitable ("Better to do it now."). They were exchanging with the Ministry on this issue before the ministerial decision. The University of Helsinki can serve here as an example at the institutional level. The next figure illustrates how the reform was implemented within the largest institution in Finland, the University of Helsinki.

Graph 2: Reform implementation in the University of Helsinki



The partners of the internal Bologna process at the University of Helsinki (Jakkhu-Sihvonen & Niemi 2006, p. 27)

The decision to maintain the Master's degree as the normative degree from universities and keeping the Bachelor degree as the main task of the polytechnic sector was the reason why the reform did not provoke any strong reactions from universities.

When deciding upon the reform, the Ministry initiated and supported two types of working groups. Firstly there was a coordination group in specific fields of study with people from all universities. The aim was to look into the content of the curricula. Second group dealt with a project to support the development of counselling and teaching as well as to determine workload for students to avoid overloaded study programmes, and to give time to think and reflect. To main aim of this group was to improve student progress (W5W). On the whole, a range of methods are offered as support structures, a large amount of students have been trained in order to support institutions and departments in curriculum development. An example is found in the report "Give me time to think" written by staff from the University of Oulo, headed by Asko Karjalainen (Karjalainen et al 2006). This university model of in-depth learning served as a basis for the W5W-project and is adaptable to a national framework and evidence-based models of teaching and learning.

5. History-specific developments

5.1. Two-cycle degree structure

As mentioned before, the two-tier system in Finland has been mainly a formal structure, and the curricula in History were designed as integrated five-year programmes. The Bachelor degree in History is not formally recognised in the labour market. The Bologna process has not changed anything in the overall degree structure. The Ministry decided at an early stage that the 5-years Master's degree should remain the normative university degree.

However, a large proportion of students do not complete their Master's degree. Even if it is maintained as the normative degree, the Bachelor degree could serve as documentation for those who are not able or willing to complete a full Master's programme. If a considerable part of those students who do not complete their Master's but leave with a Bachelor degree get relevant jobs, the Bachelor

degree may in fact come to serve as a final degree – even if not intended by the Ministry or the universities.

Not only has the overall degree structure in history remained unchanged after the Bologna process in Finland, also the way subjects are combined within the degree programmes remains basically the same. There are no visible developments so far towards new cross-disciplinary curricula comprising history. Curricula were already composed by small modules, and with a course-based structure prior to the Bologna process.

5.2. Competence-based learning

Several propositions have been made on a Finnish national qualification framework aligned with the European Qualifications Framework. This has led to discussion within the respective fields, including history: what does it actually mean to study these subjects, and what are the learning goals? For some years, there have been ongoing efforts to improve the descriptions of course content and the competencies that students actually possess. The curricula in history contain important transferable skills such as tools for collecting and analysing material and source critique. There are also efforts to facilitate the introduction of practical training in history. There have been discussions about the general skills and attitudes which should be included in the objectives of the education in addition to those skills that are specific for each field of study. A dilemma, however, remains between learning goals and a scientific identity in history.

The W5W project aims to improve student learning and is considered to be not only a tool for improving study progress, but also for improving quality. An explicit aim of the pedagogical reform is to contribute to a turn “from superficial to in-depth learning”.

The introduction of study plans represents an interesting innovation in Finnish higher education, especially considering that it takes place within a traditional academic discipline like history. The main aim of the study plans is to support persistence. They also contribute to improving the descriptions of course content. The study plans could lead to better linkages between competencies and skills.

5.3. Flexible learning paths

The OECD review of the Finnish polytechnics pointed at low mobility from polytechnics to universities (OECD 2003). There may be good reasons for keeping the two sectors separate in Finland, but it prevents flexibility since access of polytechnic graduates is restricted by the universities. In some regions cooperation between universities and polytechnics seems to improve. In the field of history, however, there is little potential for transfer between polytechnics and universities, since the polytechnics predominantly offer professional programmes.

One of the reform aspects is the introduction of a common grading system, with a five-point scale to replace numerous non-comparable systems. The distribution of grades is being assessed, and the distribution between fields and over time will be compared.

New cross-disciplinary or multi-disciplinary degrees are being introduced at a Master’s level, but so far history is not part of this trend.

5.4. Mobility

In general it is considered difficult to attract foreign students to Finland. This may be due to language barriers and the fact that Finnish universities are not internationally ranked among the top universities. Finnish students are encouraged to follow parts of their studies abroad, but this may be counteracted by pressure for efficiency and the shorter duration of study. Outgoing student numbers

have tended to exceed incoming student numbers, but this has recently balanced out. Academic mobility in history is low because it is a national discipline with a focus on Finnish history, and because it requires proficiency in the Finnish language. International cooperation mainly takes place with other Nordic countries, especially with Sweden, since Finland and Sweden share a long common history. However, we noticed some early developments towards a stronger understanding of Finnish history as a part of broader European developments and towards the establishment of a stronger contact with Russia.

5.5. Recognition

Universities decide upon the access criteria for the students they enrol. The prerequisite for access to universities is the completion of the academic track of upper secondary education. Access based on prior work experience or an assessment of competencies is so far not on the agenda. Universities also do not automatically recognize the credits obtained at polytechnics. History is quite a selective discipline since there are many qualified applicants for a limited number of study places. In addition, transfer from polytechnics to the field of history is hampered by the fact that the polytechnics mainly offer professional programmes. At least within the field we have covered, the life-long learning perspective seems relatively weak at Finnish universities.

6. Impacts

6.1. Access

Opening up access is not a big issue, since the Finnish higher education system is quite open with high number of study places compared to the number of young people. But some study programmes are more selective than others. History, at least at the University of Helsinki, is fairly selective, with a high number of applicants compared to the number of available places. Intake in history is kept stable, and there is no intention to further increase enrolments.

The degree reform is not intended to increase access. Some supplementary programmes are established to help the entry into Master's programmes for candidates without a specific Bachelor degree. There is automatic transition from Bachelor in history to a Master's programme in history although some tendencies can be seen to open up for students having other Bachelor degree than history.

The development to improve study guides to communicate the content of the curricula in a more efficient way could have a positive effect on recruitment, and attracting new groups of students. This, however, remains to be seen.

The combination of a large number of study places and the reduction of the age cohorts may force the institutions to attract new groups of students and/or to compete with other institutions. This may lead to a more efficient curriculum development in institutions rather than following a politically decided reform. The surplus of study places thus contributes to increased openness in access, even though this is not a part of any conscious policy.

6.2. Graduation rates

The main aim of the reform as seen from university point of view is to improve the quality of degrees. The revisions of the degrees were spurred by several international evaluations.

The graduation rate is low and it is perceived as a general problem at Finnish universities. This is exacerbated by a high drop-out rate and a long time to degree. Graduation rate in history at the University of Helsinki is, however, high. In fact, it is 75% among Finnish-speaking students, which is

among the best at the university. However, the limited data from other universities does not allow to draw comparisons.

The reform has introduced changes in teaching and learning modes at Finnish universities with a specific aim to improve graduation rates. They are important and challenging. Methods have been introduced to measure students' workload. Master's theses increased in volume although they had to be limited to be manageable within the limited time. A general problem seen in curriculum development is related to the increasing number of new courses while the old ones are difficult to eliminate. The introduction of study plans is an instrument to create a stronger degree of joint responsibility between students and an institution. There is also a development towards more "pipelined" degrees.

Improved student counselling is an important tool to improve study progress, especially at the final stage of their thesis writing. New technology has caused some changes, such as less personal contact and enhanced possibilities for communication between teachers and students. From the example of history students who are at their final stage it was evident that the institution makes efforts to direct and guide them. From the perspective of student, they need more structure and guidance at the beginning of their studies while at a more advanced level they may have more freedom. Academic freedom is often the same as academic neglect. Support systems to help students' progress in learning are being developed as well as checkpoint systems to identify students at risk. This is not intended to be primarily a control system, but nevertheless these systems imply some aspects of control.

Both the attempts to improve student counselling and tools for measuring course work load has been supported by the "W5W" project. The awareness of this specific project seems not to be universal, but still it is possible to observe changes that are in accordance with the aims of the project. The fact that the Finnish reform is mainly perceived as focusing on these aspects contributes to this.

In the Finnish funding model, universities get some of their funding based on the number of graduates at a Master's level. Some of these funds are being distributed to the faculty level, but not to the department level. Some the efforts to support students that are in their final stage but having problems in finalising their Master's theses may of course be related to the funding incentives, even though they are not distributed to departments.

It is premature to assess the results of these changes and to measure whether graduation rates have improved and time to degree has been reduced.

6.3. *Employability*

Increased employability seems not to be an important factor behind the Finnish curriculum reform. At least there was no explicit intention seen to turn university degrees towards being more professional. With its large polytechnic sector offering vocational higher education, the universities can remain predominantly research oriented and academic to a certain degree. It is also difficult to see any clear strategy among Finnish universities to enhance the employability among graduates. Although a certain shift towards more cross-disciplinary study programmes may be interpreted as a development in that direction. Furthermore, Finnish universities are not aware about the labour market for their graduates. The prevailing opinion was that history graduates do not encounter severe problems in getting employed, even if there is a certain structural unemployment in Finland, including among university graduates. The labour market among graduates in history is changing and the graduates are distributed over a broader range of occupations and work sectors. Traditionally, a large proportion of the graduates in history have become teachers in upper secondary schools, but this proportion has been decreasing. Previously, around 50 percent went to upper secondary schools, but this proportion has decreased to 30 – 40 percent. Historians get employed at universities, in public administration and a considerable number in journalism.

In the University of Helsinki, however, the established new multi-disciplinary Master's programmes were not regarded as professional in their character, but rather as a result of development of new knowledge. History has so far not joined any cross-disciplinary study programmes. In the view of the department the best prerequisite to make their graduates attractive to the labour market is to keep high academic standards..

On the other hand, one should not underestimate the work-related aspects of history, such as the processing, critical review and systematising of material. Introducing the options for students to choose training in the methodology for archivists could be mentioned as one example of increasing employability.

6.4. Quality and quality assurance of programmes

The Finnish national system for Quality Control is now predominantly a Quality Audit system. This is welcomed by the institutions, and must be related to the high degree of autonomy given to Finnish universities. Accreditation is made in a few professional programmes, mainly in the polytechnic sector. Institutional quality systems are not regulated directly, but the Act on Universities and Polytechnics states that they should have a system for evaluation. The Ministry is pushing the institutions to establish such systems and the fact that the quality systems will be audited functions as a pressure on the institutions.

The introduction of an institution-based quality assurance system has been a hard process. There has been a large amount of evaluations of research and teaching, administration and library services. The new system is regarded as bureaucratic and burdensome.. It may be questioned whether this is a system in strict sense rather than a set of loosely-coupled procedures. Faculty members do not often see the utility and it may lead to the collection of too much data. But since the system will be audited in a few years, the university has little choice other than to establish a system.

The negative views on quality assurance systems were even stronger within history. The faculty regarded the institutional Quality Assurance system as bureaucratic that imposed more work and reporting, and it was perceived as useless. A peer review of history has been undertaken.

FINHEEC introduces European standards through their evaluations, which also introduces some harmonising trends in the developments of quality assurance systems. An interesting question that was raised is whether quality assessment systems in themselves may contribute to harmonisation.

6.5. Cost-effectiveness

Judging impact in terms of cost-effectiveness would be premature. Increased focus on student counselling and teaching quality as well as the reporting routines of the quality assurance systems may lead to increased work-load for the faculty members. However, if the efforts to improve study progress succeed, this may improve cost-effectiveness in the system.

Finally, the involvement in the *Tuning project* has increased the international perspective of Finnish history education.

7. Conclusions

The case study of Finland provides insight into a curricular rather than structural approach to the Bologna process. As an example of a field of study particularly vulnerable to the tug of tradition ties and dispersions of international trends, history was chosen as a point of departure. These views on the characteristics of history were supported, but on the other hand, a view of unwillingness and resistance towards the present curriculum reform found little support. History is focusing on the academic research-oriented content rather than on the labour market-driven content. It also aims to

maintain the strong academic identity and improve the quality of teaching and learning. The fact that graduates in history have little problems in getting employed and find employment within a wide range of sectors may support the view that one should be careful to make radical changes in the present curriculum for employability reasons.

As the reform is in its early stages and has been taking place for one year so far, clear measures of curricular impact cannot be established. This also limits the possibility to have an evidence-based opinion about promising practices. On the other hand, it is advantageous to get “fresh” impressions.

As a *first lesson* from this case study, we would point to Finland as a case of good performance regarding policy development and organisation when it comes to balancing traditional academic autonomy with recent international trends of standardisation. This is maybe more relevant for the “governance” project, but it is also an example on how to implement a national reform affecting curricula.

One reason why the reform was not negatively received by the higher education sector was due to the decision to maintain the Master’s degree as the basic degree at universities. Bachelor education *remains the main task* for the polytechnic sector. *Our findings indicate that it was this basic agreement that set the stage for a quick focus on the content of the reform rather than structural debates.* As such, the case of history serves as an illustrating frame of reference for a curricular adaptation of the Bologna process in Finland.

The way this reform has been implemented in Finland is interesting and is characterised by a decision-making process which is based on a consensus-oriented dialogue. Before any decisions were made at the ministerial level and in the Parliament, working groups involving all partners had discussed. Moreover, universities started to act already before any formal decision was made. When the decision for reform was made, it consisted mainly of the overall goals and directions. From there the process was laid fully in the hands of the institutions. This is of course related to the traditionally strong autonomy of Finnish universities, an autonomy which is stronger than in the other Nordic countries. This is not to say that the Finnish Ministry of Education is weak and without power to enforce policy. On the contrary, it is fairly clear that the negotiation character of decision-making is fairly effective.

A *second lesson* is that the Finnish reform is focusing on what is going on in the “black box” of teaching and learning rather than drawing boxes representing a new degree structure. This perhaps makes the reform less visible, but not less real. The curriculum reform following the implementation of the Bologna process in Finland may at one level be interpreted as minor. The Finnish reform has so far not lead to any change in *structures*. Finland already had a two-tier 3 + 2 degree system on paper, but in reality most universities offered only 5-year Master’s degrees. The Bachelor degree was maybe seen a stage in the curriculum, but it was not designed as a degree providing graduates with a final qualification. Neither did students aim for a Bachelor degree. The fact that the Bachelor degree after all may serve as a certificate for those students who were not able or willing to complete a Master’s degree does not change this principle, but the reality may well differ from the formal structure. The Ministry decided to make no change in the fundamental degree structure. The Master’s degree remains the normative degree at universities. There were no major changes in the structure of the curricular content as well. The Finnish degrees were already organised in modules according to a course-based system where credits assigned to each module. A certain development towards a broader range of degree programmes and a stronger weight on cross-disciplinary curricula is however visible.

A *third lesson* is related to the main aim of the reform, which is to improve quality and to reduce the time to degree as well as drop-out rates. The main tools are the introduction of study plans which link students more closely to their institution. Students should get better counselling at all stages of their studies. The introduction of certain checkpoints intends to identify students at risk and to support them in completing their studies. Core content analyses are being developed to measure workload, serve as an instrument for curriculum development. While these are general reforms, special efforts are made in history to help students in the final stages of their study to finalise their thesis. Both the

introduction of study plans and a stronger focus on counselling are measures to create stronger links to improve mutual responsibility between the student and the institution. One should perhaps have a special focus on the project that aims at measuring real workload among students as a tool for curriculum planning.

8. List of interviewees

Monday 6 November

- Mr. Ossi Tuomi, Ph.D., Secretary General FINHEEC

Tuesday 7 November

- Ms. Katariina Alha, Project Manager, University of Oulu and Mr. Tommi Haapaniemi, Project Manager, University of Kuopio, National cooperation project in degree reform (W5W)
- Ms. Anita Lehtikoinen, Director, Science Policy Division, Ministry of Education
- D.Sc. (Tech.), Professor Markku Mattila, Director, University Division, Ministry of Education
- Professor Henrik Meinander, Ph.D, Head of History Dept., University of Helsinki

Wednesday 8 November

- Ms. Anne Mikkola, Member of Secretariat, Educational Affairs, The National Union of Students in Finland
- Professor Hannele Niemi, Ph.D, Vice Rector, University of Helsinki

Interviews by phone or e-mail

- Professor Jussi Välimaa, Institute for Educational Research, University of Jyväskylä
- Professor Holger Weiss, History Department, Åbo Akademi

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Case Study: The reform of teacher training in England¹

1. Introduction

In all European countries, the structure of teacher training is strongly bound and shaped by national context and history. The state as main employer of graduates tends to have a strong influence on the structure and content of teacher training, and the related requirements generally tend to lower the flexibility of provision in this field. The programmes cater mainly for national labour markets. Many countries have traditions of long integrated undergraduate programmes leading directly to the teaching qualification, thus being at odds with a two-cycle structure (Bachelor and Masters or equivalent) and offering a low degree of flexibility of learning paths and entry and exit points. Even where traditionally integrated programmes are currently re-organised into two cycles in the context of the Bologna process, they are rarely open for international mobility between the first and the second cycle or for student with different backgrounds, partly because they are designed as “consecutive” programmes with the two cycles strictly building upon each other, partly because other national specifics (such as competitive exams, long state training programmes, language requirements, etc) prevent foreigners or people with unconventional backgrounds from entering into the national public service in practice.

Against this background, adapting these particular national patterns to fit the Bologna expectations constitutes a particular challenge, and is not unequivocally seen as desirable in the community. There is also a lot of confusion about how teacher training can be adequately adapted to this structure given the tensions between academic and professional demands upon teachers and the requirements coming from the state as employer and quality assurer.

These reasons lead us to select England as national case study, for in this country teacher training has traditionally followed a two-cycle structure (Honours degree, Postgraduate Certificate of Education), and has offered comparatively flexible pathways for individual learners. In the majority of countries, it appears that building strong foundations for the relatively recently established balance between university responsibility and autonomy and the public and political requirement for governmental oversight is one of the major challenges for the coming decade.

In the last 20 years, initial teacher training in England has been thoroughly transformed. Political interest in teacher training has also been much greater than in previous times.

The story of teacher training reform in England is a story of recreating the image and the status of the teaching profession. It has been a process embedded in a large scale educational reform in Britain, on the one hand, and in a significant shift in higher education, on the other. Both are grounded in political and ideological choices in which European developments such as the Bologna process are reflected and intertwined. Few, if any European countries have experienced such rapid, interventionist reform to a system of teacher education. (Moon, 2003b) However, out a period of quite intense conflict, some elements of the system have emerged that all those involved with teacher education would probably agree should be retained.

The following case study presents an overview of this reform with a special focus on curriculum changes.² The study is based on background reports, literature review, data analyses and a number of interviews with persons directly involved in teacher training. In the following pages, we will start with an outline of some of the features of the English higher education system that are important for understanding the changes in the field of initial teacher training. Next, we will present briefly the major steps in the reform of initial teacher

¹ This case study was written by Margarita Jeliakova and Marc Kaulisch

² The regulations for initial teacher training (ITT) concern the “maintained school” sector, which covers about 94 % of all pupils in England.

training (ITT). Third, we will describe in some detail the ITT system as it looks today, with a particular focus on the curriculum. Finally, we will discuss some of the major lessons, positive and negative, to be learnt by European countries. Although the scope and the pace of the reform of teacher training in England is unique, the issues it addresses are faced by most other European countries. In this sense it is worth looking at the example of England and to attempt to draw lessons applicable elsewhere.

2. Key features of the English higher education system

The basic structure of UK degrees already conforms to the Bologna model of three main cycles of Bachelors, Masters and Doctoral degrees. The traditional Honours degree takes 3 to 4 years to complete and most postgraduate Masters courses take between 1 and 2 years, depending on the particular learning outcomes. Foundation degrees, designed to create immediate awards strongly oriented towards specific employment opportunities, were introduced in 2001. Higher education in England is provided by a range of institutions which carry out teaching, research and scholarship. All the universities and many of the higher education colleges are degree-awarding institutions: some colleges do not have degree-awarding powers but offer programs leading to the degrees of an institution which does not have them. Higher education institutions are autonomous bodies established by Royal Charter of legislation and almost all receive significant amounts of public funding. There are 132 publicly funded higher education institutions in England and one privately funded institution which offers British degrees, the University of Buckingham.

England has one of the more detailed and sophisticated systems of Quality Assurance in Europe. Standards and quality in institutions are underpinned by universal use of external examiners, publication of a standard set of indicators and other reports and by the activities of the Quality Assurance Agency. This ensures that institutions meet national expectations described in the Academic Infrastructure for quality comprising the Framework for Higher Education Qualifications (FHEQ), subject benchmark statements and the Code of Practice, which are linked to a system of program specifications. Since 1997, the Quality Assurance Agency is the independent UK-wide body which monitors the standards of higher education provision. The types of qualifications awarded by higher education institutions at sub-degree and undergraduate (first cycle) and postgraduate level (second and third cycles) are described in the Framework for Higher Education Qualifications, including qualification descriptors, developed with the sector by the universities and colleges are at five levels. In ascending order, these are the Certificate, Intermediate, Honours, Masters and Doctoral levels. In England, the credit system is widely, but not universally used (DfES, 2004).

3. Reforms in the area of teacher training

Main issues

The development in teacher education in England cannot be explained without recourse to the "revolution" (Hargreaves, 2000; Jacques, 2002) that happened in the system. Initial Teacher Training for schools³ (ITT) has undergone a radical reform from mid-1980s onwards. These reform steps in the field of teacher training stemmed from a number of concerns, shared to a greater or lesser degree by all stakeholders.

Four major reform steps led to the current system of ITT.

First, it was felt that teacher education had a direct impact on the quality of education (Barton, Barrett, Whitty, Miles, & Furlong, 1994). This argument is still being put forward as a justification of continuous involvement of the state with teacher training: of those variables

³ A reform of initial teacher training for further education, the 'skills and learning sector', takes effect of September 2007 and resembles the reform done for schools.

which are potentially open to policy influence, factors to do with teachers and teaching are the most important influences on student learning. In particular, the broad consensus is that 'teacher quality' is the single most important school variable influencing student achievement.

Second, problems with recruitment and retention of teachers were to be addressed. There was an acute shortage of persons willing to become a teacher. The more knowledge-based forms of occupation and new types of employment appeared to be attracting away those parts of any age cohort that traditionally went into teaching. (Moon, 2003a) The measures to improve the quality and to increase the attractiveness of teacher training were to introduce nationwide standards controlled by (quasi-) governmental organisations, to increase the practical part of teacher education and to organise the intake of teacher trainees and funding of ITT centrally. In relation to the more practise-based ITT schools are encouraged to provide ITT as well. In order to increase the recruitment of teachers and to retain them government created new routes to the teaching profession, increased salaries of teachers, introduced diversified learning paths to entering the teaching profession and offered financial incentives to teacher trainees.

Next, there was an initially conservative driven concern about the content and relevance of teacher training. There was a feeling that too much 'left-wing ideology' was cluttering the programs, and that teacher educators were quite out of touch with what was going on at schools when offering their didactic and pedagogical theories. Too much autonomy of the teacher training programs was seen as the root cause of these problems.

The choice for the name Teacher Training, as opposed to teacher education, was therefore far from arbitrary. It reflected the outcome of long lasting ideological conflicts around the distinction between teacher *education* and teacher *training*. In the 1960s, the move was to raise the status of the colleges by linking them to education rather than to training. The second change was to plan for all teachers to have earned degrees. The Colleges of Education often became linked to local universities, which accredited Bachelor of Education programs for all those undergoing primary school training. Teacher education for secondary school teachers also began to be established from the 1950s onwards.

Finally, but not of the least importance, the general move towards making higher education more cost-effective influenced the direction of reform in teacher training as well. In the 1970s, in a period of university expansion and in a mood of optimism about raising the status and the intellectual credibility of primary and secondary school teachers, it seemed appropriate to move teacher education into higher education. Also, the Colleges of Education were often relatively small and difficult to make cost efficient. The central Ministry seized the opportunity to close and merge many of these, as the process of incorporation into the university sector took place. This move was not always popular among teacher educators.

A brief chronology of reforms

As a first step of ITT reform, the government introduced a quality assessment agency that accredited all ITT courses. The Council for the Accreditation of Teacher Education (CATE) started in 1985 and was seen as a first step to reduce higher education institutions' autonomy in providing ITT (Barton, Barrett, Whitty, Miles, & Furlong, 1994).

The establishment of CATE in 1985 was the first governmental attempt to pull back some of the control of teacher education that had so recently been given over to the universities. At one level, the imposition of CATE and the pressure for inspection seemed a real threat. Some feel that such pressure, applied to law or medicine, might well have been resisted. Teacher education, however, something of a newcomer to the academic world and without the status and tradition of the other professions, was accorded little protection. Although some misgivings were voiced, accreditation by CATE and inspection by HMI was firmly in place by the mid-1980s. (Barton, Barrett, Whitty, Miles, & Furlong, 1994)

In the 1990s, the new minister responsible for education, Kenneth Clarke, and ambitious politician, quickly introduced some serious reforms: CATE was abolished and a national Teacher Training Agency (TTA⁴) was introduced instead. The TTA, an intermediary agency, funds and accredits ITT providers and is also responsible for the distribution of the intake on ITT providers. The use of the word *training* in the title was an explicit attempt to indicate what the central purpose of teacher education should be. A minimum time for teacher trainees to spend at schools was decreed. Consequently a proportion of the money received per trainee by universities had to be given to schools in recognition of their greater role and responsibilities. Alongside with the establishment of the Office for Standards in Education (Ofsted), a statutory statement of teacher competencies was introduced that all courses must develop. In addition, funding of courses was linked to obtaining satisfactory results from inspection. For the first time, it was said that schools and groups of schools should be able to train teachers independently of any university. (Moon, 2003b)

In 1998 the new Labour government declared education as one of its greatest priorities, and within this framework, continued the reform of ITT. In this reform round, a National Curriculum for ITT was introduced that established national standards for qualifications of upcoming teachers (DfEE, 1998). The ITT providers were made accountable for the quality by relating their funding to inspection results of the Office for Standards in Education (Ofsted). For teacher trainees an induction year was established in which they have a reduced teaching commitment. In the follow up of this round of reforms a General Teaching Council for England (GTC) was created that started their work in September 2000. This council is a professional body that awards the QTS and takes care about issues of the teaching profession. Simultaneously, the Labour government introduces a successive salary increase for teachers.

The 2002 round of reforms had further initiatives to improve ITT. The focus was on increasing the attractiveness of ITT for prospective teachers. A training salary and/or a tuition fee waiver were introduced for teacher trainees. New financial incentives for those entering the teaching profession were introduced, including a considerable salary increase for all teachers. Career opportunities were broadened by differentiating roles within schools. The government tried to further stipulate the professional development of teacher by giving bursaries for research into best practices, visiting other countries and other developing activities. Another aim of the government was to reduce the administrative burden for teachers.

Today the administrative basis of English ITT is based on five organisational pillars. The Department for Education and Skills (DfES) is responsible for ensuring “sufficient facilities for training teachers for service in maintained schools” (Holcroft, 2000). The DfES plans the number and type of teachers needed and provides the Training and Development Agency (TDA) with ITT intake targets. TDA's funding and allocation decisions are based on these intake targets. Accredited ITT providers receive funding from TDA. The TDA accredits ITT providers based on criteria showing their ability to provide ITT (TDA, 2006b). Their accreditation can be withdrawn if the provider fails during an inspection done by Ofsted. Ofsted inspects ITT providers and ranks their quality. The General Teacher Council (GTC) operates as a professional body that awards the Qualified Teacher Status (QTS), registers all qualified teachers and provides statistics on the teaching staff. As a fifth organisational pillar, two admission agencies organise the admission. The UCAS organises the applications for undergraduate ITT programmes and the Graduate Teacher Training Registry (GTTR) does this for post-graduate ITT programmes.

⁴ The TTA is renamed into the Training and Development Agency for schools (TDA). The newer name is used further on in this report. The new name marks also an expanding responsibility of the TDA. The agency is from 1st September 2005 responsible for the development and training of the whole staff in schools (TDA, 2006c).

4. Bologna-related developments and discussions

Degree structure and flexible learning paths into the teaching profession

The introduction of a Qualifying Teacher Status, the QTS, as the essential entrance ticket to the teaching profession, is the second most typical feature of the English ITT system. Together with the standardised curriculum the uniform minimum expectations for teachers create opportunities to offer more flexible paths into the teaching profession.

Currently, there are four major paths to acquiring a QTS in England: through undergraduate studies, through postgraduate studies, through employment-based studies and through QTS-assessment only (Hobson et al., 2006; TDA, 2006f). Thus the pattern of teacher education has been either a four year initial degree integrating disciplinary specialisation with pedagogy (usually the Bachelor of Education), or 3+ 1 consecutive programmes in which three or four year initial discipline-based award is followed by a one year Postgraduate Certificate in Education or other consecutive arrangements.

Through these different routes, initial teacher training is open to school graduates, university graduates, mature students and those qualified outside the European Economic Area (EEA). For undergraduates, two options are available: Either completion of the 'traditional' Bachelor of Education (BEd) degree or through obtaining a Bachelor of Arts (BA) or Science (BSc) degree which incorporates QTS. Both ways take two to four years. The two year option is available for mature students with a minimum of one year of relevant higher education. Part-time programmes are available as well.

Box 1 – A traditional teacher training university

The Institute of Education at Manchester Metropolitan University has been formed by combining the expertise and resources of the two Schools of Education at Didsbury and Crewe Campuses, both of which have a national reputation. The Institute is a major provider of initial teacher education and continuing professional development for teachers at undergraduate and postgraduate level in the North West. It is one of the largest teacher training establishments in the country. The Institute is also a major centre of teacher education for serving teachers including inservice short and long courses (individual modules, Postgraduate Diplomas and MEd), and research opportunities at Master's and PhD Levels.

The BA in Primary education is a full time 4 year program with the following components: Teaching Studies, Curriculum Studies, and School Experience. The latter is considered central to the course. The program achieves its coherence through its emphasis on preparation for teaching. In addition, there are activities in the field of teaching and learning styles.

The BA program in Secondary education aims to provide students with a sound academic grounding in the chosen subject, building on the existing academic and/or professional qualifications of students. The work is structured into three main components, namely Subject Studies, Professional Studies and School Experience. In each year there are six units of study. Some lectures in subject Studies are held jointly with students on non-teaching degrees. School experience takes 24 weeks at two different schools.

The PGCE program in primary education admits approximately 200 trainees across two sites. A major feature of the course is the close partnership with schools. Teachers are involved in course planning, course committees, selection of candidates, teaching aspects of the course and joint supervision of students in schools. In the Teaching studies module of the program, there is a strong emphasis on reflection and evaluation of students' own practice. The PGCE program with Modern Foreign languages specialization offer courses in French, German, and Spanish.

The programs offered by the Institute differ in style, scope, and types of students which they attract. The Foundation degree in Early Years Education is directly sponsored by Dfes and serves as a model for formulating requirements in the whole newly emerging field; the Primary education programs are competitive, with about 1500 applications for 200 places. This is due to the raised status of Primary school teaching, particularly at Key Stage 2, combined with competitive salaries. Not so in the secondary school programs which have recruitment difficulties. Secondary school teaching loses popularity in England and this is reflected in student applications.

In the framework of 'quite prescriptive' national requirements, the Institute attempts to preserve its trademark of a student-centered teacher training institution, which traditionally values deeper-level student reflection on practical experiences. This is not always easy, as students need to be prepared to meet the standards of QTS, and that means 'ticking boxes, 50 competences means 50 activities which crowd the program and leave little room for holistic judgment'.

The teachers believe that the climate is changing for the better; there is more flexibility allowed. The relationship between the Institute and the schools is improving, although it remains quite complex, with some 1000 schools offering placements.

Sources: interview with Patrick Jones, PGCE Primary Didsbury Coordinator, Manchester Metropolitan University

<http://www.ioe.mmu.ac.uk/>

The undergraduate programmes leading to an education degree and QTS integrate studies of one or more subjects, curriculum, pedagogical and educational studies and practical teaching activities throughout the period of study (INCA 2006). In four-year programmes trainees are supposed to spend at least 32 weeks in schools. The length of time being trained in schools is 24 weeks for trainees in two- and three-year programmes. It is required that trainees spend time in at least two 'contrasting' schools.

For graduates, three options are available to obtain the QTS within one or two years. The first option is to obtain a Postgraduate Certificate of Education (PGCE) with a one year full-time or two year part-time programme at a HEI. Alternatively, School-Centred Initial Teacher Training (SCITT) takes one academic year. Some SCITT programs lead to a PGCE of a nearby higher education institution, some do not and merely bestow QTS without the university awards (Jacques, 2002). A third option is the Teach First programme, providing teacher training and management qualifications and addressing "high-flying graduates" (TDA, 2006d). This programme takes two years and teacher trainees practise in challenging secondary schools.

In all postgraduate programs, students attend courses on curriculum, pedagogical and educational studies, acquire practical teaching skills and apply their degree subject(s) to school teaching. In this year teacher trainees for secondary and key stage 2 or 3 education get at least 24 weeks of school training. Trainees for primary education spend 18 weeks in schools. Again, at least two schools should be involved in the practical training.

Three employment-based paths into teaching are established, mainly for those already working as teachers or willing to enter the system and study part-time. The Graduate Teacher Programme (GTP) is open to graduates of a subject relevant to their teaching specialism and lasts for at least one academic year. The Registered Teacher Programme (RTP) is a two-year programme for those without a university degree but at least two years of higher education. The Overseas Trained Teacher Programme (OTTP) is a route for teachers that were trained outside the European Economic Area (EEA). The programme takes up to a year and leads to obtaining QTS while on the job.

Box 2 – An Example of a GTP program

The West London partnership for Graduate Teacher Programs and Overseas Teacher Training

The West London Partnership enables schools to employ graduate teachers who are not yet qualified and supports them through an individual training programme leading to Qualified Teacher Status (QTS). The programme may suit mature career changers who need to continue earning while they train. It would also suit those who have taught in the Further Education or Independent sectors without gaining QTS. For those people who have trained overseas as teachers and who wish to obtain QTS in the UK, separate arrangements exist and the GTP now offers a "fast track" route to qualification.

The West London Partnership is an ARB (Accredited Recommending Body) and consists of four Higher Education Institutions (Brunel and Kingston Universities, University of Surrey - Roehampton and St. Mary's College) one accredited ITT provider (The Wandsworth Primary School Consortium) and eleven LEAs (Brent, Ealing, Hammersmith and Fulham, Hillingdon, Hounslow, Kingston, Merton, Richmond, Surrey, Sutton and Wandsworth).

The distinctiveness of the programme relates to its flexibility to meet your individual needs. At the beginning of your training, a detailed analysis of your training needs will be carried out by one of the Partnership's ITT tutors, based upon the Standards for the Award of Qualified Teacher Status (QTS), including audits of subject knowledge and information and communications technology (ICT). Your previous experience and qualifications will form an important aspect of this analysis. As a result of this needs analysis a suitable and individualised training programme will be made for you. The length of your programme will depend on your needs analysis, which will determine your individual training programme, although programmes are normally one year in duration. Most of the training is school-based but you will be required to attend some centrally run sessions. You may also attend some sessions run by the partnership's ITT providers. The number and nature of these sessions will vary according to individual need and the age phase you are training to teach.

You will work alongside experienced teachers, and gain experience by observing good practice, working with individual pupils, small groups and whole classes. You will also undertake directed study tasks. Your main source of support will be from school-based mentors but you and your school will also receive support from a Support Tutor from one of the ITT providers in the partnership. This tutor will visit your school periodically during the programme and will be responsible, in collaboration with your mentors to review and monitor your training programme.

The programme will enable you to reach the Standards for QTS and within it you will:

- consider the nature of your subject, its status and potential with the school curriculum;
- learn about classroom management strategies and how to plan and prepare lessons;
- develop the ability to select and make appropriate use of a range of equipment and resources to promote students' learning;
- develop the skills needed to monitor and assess students' work;
- develop as a creative, reflective and innovative professional, able to meet the challenges presented by educational change.

Second School Experience

As the standards for QTS require that you have had experience of teaching in two different settings you will have to undertake a period of training in a second school. The only exception to this will be trainees who have already had prior teaching experience in their subject and age phase, e.g. you have taught in a FE college, have undertaken work as a supply teacher. The length of time in a second school will depend on individual needs but will be a minimum of two weeks. Trainees whose lead school is a special school will have to undertake a substantial period of time in a mainstream school as their second school. This will usually be for a period of six weeks and must be undertaken regardless of whether they have had prior teaching experience.

Assessment

Assessment will be continuous throughout the programme. You will receive targeted support from both your school mentor and an ITT provider support tutor. During your training you will have to maintain a portfolio of evidence to demonstrate that you meet the standards for QTS (Qualified Teacher Status). There are no academic assignments but you will be expected to complete one or more QTS related written tasks. At the end of your programme, an external assessor who previously has not been involved in your training will see you and decide whether you should be recommended for the award of QTS.

Recommendation of qualified teacher status

In order to be recommended to the GTC (General Teaching Council) you must, by the end of your programme, demonstrate all the requirements for the Award of Qualified Teacher Status, including the National Basic Skills Tests in numeracy, literacy and information and communications technology (ICT).

If you teach in a state maintained school you will have to complete a period of induction (equivalent to three school terms), and will need to demonstrate the Standards for Newly Qualified Teachers

Source: <http://www.westlondonpartnership.co.uk>

The employment-based paths require a job as unqualified teacher. The GTP schools assess the training needs of their unqualified but graduated teachers and develop an adequate training plan that is approved by the TDA. The training might include off-site training. Schools and trainees receive grants from TDA to cover salary and training costs. In the RTP, unqualified teachers with two years of higher education complete a degree within two years while teaching. Training and assessment costs are taken over by the TDA.

Box 3 – flexible teacher training routes

The Open University offers flexible PGCE courses as an individual path to qualified teacher status, designed to meet the needs of people who cannot enter teaching by conventional routes and who need flexible study patterns. Taking account of the knowledge and experience candidates already have, they get a personalized route through a modular program and school experience in regional partner schools, with training, support and assessment by OU tutors and school mentors.

The University of Gloucestershire offers an Assessment Only route for experienced teachers who have been teaching for some time but do not have the Qualified Teacher Status. There is no training associated with this option. Candidates are recommended for QTS on the basis of the submission of a Professional Development Portfolio which successfully demonstrates that they meet the Standards for QTS. There is also an assessment visit to the candidate's school, normally for a day. The assessment route does not carry the award of PGCE.

At the University of Brunel, the PGCE program in science is of a maximum length of two years and contains seven modules. Candidates with substantial and relevant experience in science teaching are eligible for exemption from some modules. The course is typically attractive for mature people over 24 whose job or family circumstances prevent them from following a full-time course. Trainees are recruited from a range of backgrounds – teaching in schools as an unqualified member of staff, or working as a technician or teaching assistant, or a well-qualified overseas trained teacher who lacks Qualified Teacher Status. The length of the programme depends on the trainees needs analysis, which determines the individual training programme.

Sources:

<http://www3.open.ac.uk/courses>

<http://www.glos.ac.uk/subjectsandcourses/teachertraining/qts/entry2006.cfm>

[http://www.brunel.ac.uk/courses/pg/cdata/p/pgce+science+\(secondary,+flexible+modular+route\)/full+details](http://www.brunel.ac.uk/courses/pg/cdata/p/pgce+science+(secondary,+flexible+modular+route)/full+details)

The QTS-assessment only path is for very experienced teachers. After teaching a school for six weeks they are assessed against the QTS standards.

Programme	Time to degree	Target group	Specifics
Undergraduate Studies with QTS courses			
Degrees: Bachelor of Education (BEd), Bachelor of Arts (BA) or Science (BSc)	2 to 4 years	School graduates 2-year-programmes for mature students with professional qualifications	Programmes often concentrates on primary education
Postgraduate Studies			
Programme for Postgraduate Certificate of Education (PGCE) ⁵	1 to 2 years	HE graduates	Mix of programmes for primary and secondary education
School-Centred Initial Teacher Training (SCITT)	1 year	HE graduates	Programmes organised by schools
Teach First	2 years	“high-flying HE graduates”	Programme that adds management experiences and teacher trainees practise in challenging secondary schools
Employment-based routes			
Graduate Teacher Programme (GTP)	1 year	Mature HE graduates with degree in subject relevant to teaching specialism	
Registered Teacher Programme (RTP)	2 years	Practising teachers with two years of higher education	
Overseas Trained Teacher Programme (OTTP)	1 year	Practising teachers trained outside the European Economic Area (EEA)	

The following table shows the number of teacher trainees that passed the skills tests and were awarded the QTS in the academic year 2004-2005. In total 32402 teacher trainees received the QTS. The post-graduate programmes are the most popular ones leading to QTS.

⁵ Several universities offer Master of Education programmes that include a path towards the QTS. Further details see below.

Programme	Passed skills tests and awarded QTS in academic year 2004-2005
Undergraduate teacher trainees	6277
Postgraduate teacher trainees	26070
Graduate Teacher Programme	12262
Registered Teacher Programme or Overseas Trained Teacher Programme	1024
All trainees	32402

Source: (TDA, 2006a)

The admission to ITT courses is steered centrally. Access is restricted and bases on the allocation of places to ITT providers done by the TDA. The selection process bases on an interview to check applicant's suitability for becoming a teacher, in addition to clearance of criminal records. Further admission requirements are the achievement of Grade C in the General Certificate of Secondary Education (GCSE) examination in English language, mathematics and, for primary education, science. Applicants for undergraduate programmes also need to fulfil criteria for university entrance. Applicants for postgraduate programmes are required to hold an university degree or the equivalent.

Central admission services process the applications for entry into ITT programmes in behalf of ITT providers. For postgraduate ITT applications are processed by the Graduate Teacher Training Registry (GTTR). Applications for undergraduate ITT programmes are processed by the Universities and Colleges Admissions Service for the UK (UCAS).

Although the admission criteria and procedures are quite similar, programs vary greatly in competitiveness. Nationally renowned programs are highly competitive, sometimes selecting one of every 8 candidates. PGCE programs tend to attract many more candidates than BEd programs, and primary teaching programs are much more popular than secondary teaching ones, due to the declining popularity of secondary teaching nation-wide. This relative shortage of recruits for secondary teaching programs is related to the fact that, unlike other European countries, England requires the same type of qualification for primary and secondary school teachers.

Besides the requirements for obtaining the QTS teacher trainees have to pass numeracy, literacy and ICT skills tests. These tests are obligatory for all paths and are aimed to secure teachers ability to comply with their wider professional role in schools. In the academic year 2004-2005, the success rate of trainees in these tests was 96,9 % . For trainees with a successful completion of the QTS and skills tests, an induction year follows as a Newly Qualified Teacher (NQT). In this year, NQTs work further on their professional development, on the basis of a detailed entry profile. In this way, the induction year is effectively an additional year of training. Some teacher educators feel that the NQT year might be incorporated into the PGCE programs, by this allowing some more 'breathing space' for dealing with a very demanding curriculum.

Competence-based learning

Undoubtedly, of all these innovations, the national standards for the curriculum had the greatest impact and are the most typical feature of today's ITT in England.

The framework of national standards and professional qualifications for serving teachers currently covers:

- national standards for the awards of QTS
- national standards for subject leaders
- national standards for special educational needs coordinators
- national standards for head teachers

- national special educational needs specialist standards.

The national standards for each area of the framework are in five parts and include:

- Core purpose
- Key outcomes
- Professional knowledge and understanding
- Skills and attributes
- Key areas

Although these standards are officially defined as a 'common framework of expectations' they are commonly seen as a national curriculum, because due to time constraints the room for variation next to compliance with the national framework is very limited indeed.

The latest revision of the standards and requirements for ITT programs took place in 2002. (TDA, 2002). The standards for the award of QTS are outcome statements that set out what a trainee teacher must know, understand and be able to do to be awarded QTS. They are organized in three interrelated sections which describe the criteria for the award:

- Professional values and practice: these standards outline the attitudes and commitment to be expected of anyone qualifying to be a teacher, and are derived from the Professional Code of the General Teaching Council for England (GTCE).
- Knowledge and understanding: these standards require newly qualified teachers to be confident and authoritative in the subjects they teach and to have a clear understanding of how all children should progress and what teacher would expect them to achieve.
- Teaching: these standards relate to skills and planning, monitoring and assessment, and teaching and class management. They are underpinned by the values and knowledge covered in the first two sections. (TDA, 2002: 5)

In most European countries, teacher education courses do contain these four components:

- education studies/studies in the education sciences
- academic/subject studies
- studies in subject matter methodologies/subject didactics
- teaching practice

5. Main impacts

Generally, Bologna developments do not form a significant factor in the dynamics of teacher training reform. Nonetheless, the English model had had quite a strong influence at the European level, as the learning outcomes model of ITT has been a serious input into the European Tuning project (see Tuning website: www.tuning.unideusto.org/tuningeu/). Many, if not most countries follow national guidelines for their curricular components and standards set by Ministries of Education or professional Bodies such as Teaching Councils, thus lending a degree of homogeneity to programs. The more developed the partnership approach and the practical component of programs, the more likely the assessment formally incorporates a model of competencies, outcomes, and standards.

Access

The access to ITT programmes is nationally regulated and is due to a strict process. The DfES provides funding for a specific number of ITT places. The TDA allocates the funding and places to the ITT providers. The ITT providers delegated the admission process to two agencies: UCAS for under-graduate and GTTR for post-graduate ITT programmes. The places allocated and the actual intake numbers increased in the last couple of years but in the future prospect of decreasing number of school pupils the allocated places decrease in the next years (DfES, 2006b, , 2006c). The actual intake number show that more students were taken for primary education than places allocated but less students for secondary education.

This centralised system is supplemented by the employment-based routes (EBR⁶) to the QTS. The TDA calculates with about 7.000 trainees on EBR routes for the academic year 2006/07 (TDA, 2006e). These are more than one fifth of the whole ITT starters. Another impressive number for the success of new routes into the teaching profession is the number of GTP trainees that finished the skills tests and were awarded QTS: 12262 in the academic year 2004/05 (TDA, 2006a).

On the post-graduate level the number of applicants for 2005 is twice as much as the number of acceptances. About 60.000 applications were sent to GTTR and only about 29.000 applications were accepted (GTTR, 2006). On under-graduate level the competition for places is even stiffer. UCAS reports that it received 53.000 applications in 2005 and accepted 8.000 applications (UCAS, 2006). The success rate is rather low and thus entrance to post-graduate ITT places rather competitive.

The QTS as a standard qualification for teaching allows policy makers to create different routes to this qualification and it seems that the opening of different routes broadened the range of trainees heading towards the teaching profession.

Recognition and mobility

As far as degree recognition is concerned, the PGCE is clearly not a Masters level degree according to the European criteria. The recognition of European qualifications is assured by the QTS rather than by a degree structure that complies with other European standards. Given the still considerable shortage of teachers in England, there has been more attention paid to recognition of teaching qualifications of those willing to enter the English school system rather than the other way around.

This is why international mobility is not really a priority for ITT programs, other than a means to enrich the program and to provide international experience to students, particularly through Erasmus programs. According to our respondents, one exception is the Modern Foreign Languages program, which traditionally attracts foreign students, and which is benefiting from the Bologna developments: "Traditionally, our program in Modern Foreign languages [at Bristol] attracts 1/3 to 1/2 of non-native speakers (mainly EU nationals); this group, if not growing, tends to consolidate; in addition, a few more people from Ireland and other countries are entering science and math programs."

Through the Global Student Teaching program, students enrolled in Initial teacher training programs can fulfil a portion of their school based experience requirement abroad. In addition, universities organize their own networks of schools abroad (see for example Bristol University). Global Student Teaching placements are for ten weeks and are available in over forty countries in all continents. An alternative programme with placements of five to six weeks is also available. Expectations for these placements focus on expanding understanding of the teaching profession and development of teaching abilities. Placements in this alternative program are initially limited to Europe and the U.S.A. to assure adequate support by GTS faculty.

Through the Comenius program, training grants are available to encouraged to undertake a period of supervised study, and, where possible, practical training in another European country for one to ten weeks.

In one-year PGCE programs, mobility between different programs within England is virtually impossible, mainly due to financial issues such as non-refundable tuition payments, municipally diverse incentives for young teachers, and the relatively high percentage mature students enrolled in the programs.

⁶ EBR includes the GTP, RTP, OTT and Teach First programmes.

Quality

An area of positive impact of the reforms is the quality of teacher training programs, and thereby the quality of teachers, which eventually leads to better school results. Two major sources – the annual inspection reports by Ofsted and TDA's annual survey of newly qualified teachers – sketch a positive picture on the quality of newly qualified teachers, the quality of initial teacher training, and the newly qualified teachers' view on how well their training prepared them for their first post.

According to the Ministry of education, basic standards achievement at schools has improved. In 1997, a third of children left primary school without the skills to make proper progress in the secondary curriculum. In 2006, 79% achieve three basic standards in English and 75% do so in mathematics. The number of failing schools has fallen by half. (DfES, 2006a: 29); However, certainly not everyone agrees that better exam scores are an indicators for success.

The number of students in training is now rising significantly for the first time since 1992/93: there are now 2 250 more people training to be teachers than in January 2000. And there are almost 7000 Teachers more in service than in 1998. (DfES, 2006a)

The TDA reports the following achievements for the period of 2005-2006:

- Almost 42 000 trainees began ITT in England, the seventh successive annual increase and the highest number since the 1970s
- Recruitment to mathematics, science, design and technology (D&T), information and communication technology (ICT), modern languages, music and religious education (RE) improved by five per cent
- 10 per cent of trainees were recruited from minority ethnic backgrounds – an increase from 9,4 per cent
- 95 per cent of mainstream places allocated for the academic year 2006/2007 were for provision that is categorizes as good or very good

In inspections of the academic year 2004/2005, only two per cent of the accredited providers inspected were rates as unsatisfactory – the lowest percentage ever. The view that training is of high quality is shared by the NQTs, 84 per cent of whom believe that their ITT was good or very good. (DfEE, 2001)

Another area of visible impact is the stronger link of teacher training programs and school through the established school partnerships and school centred teacher training programs (SCITT). Providers of initial teacher training are required to work in partnership with schools and to involve them actively in planning and delivering initial teacher training, selection of teacher trainees, and assessment for Qualified Teacher Status. The partnerships begin to resemble more those of medical education programs and residence hospitals. ITT providers are obliged to make clear to everyone involved each partner's roles and responsibilities, to set out arrangements for preparing and supporting all staff involved in training, and to make clear how resources are divided and allocated between the partners. (Brumfitt, 2003)

Initially, the idealized model was of schools taking full responsibility for training and receiving only some support from university. The SCITTs were supposed to provide the opportunities expected by the collaborative and complementary model of learning. This does not seem to have happened till now. (Jacques, 2002) In addition, the evaluations of the SCTT demonstrate a clearly lower quality of these programs compared to the university based ones. All in all, up to now, the best programs are the ones that are university based AND have established strong school partnership. Universities continue to be the dominant provider of ITT.

Nonetheless, recently most new providers are SCITTs and this reflects schools' increasing involvement in initial training. This greater involvement can be attributed to a number of motives:

- the benefits for teachers of becoming involved in training

- the opportunity to recruit new staff once trainee teachers qualify
- in some areas lack of a local higher education provider of training.
- In recent years the number of SCITTs has continued to increase:

The Bachelor of Education Programme, the traditional route to the teaching profession, still occupies a strong place in the landscape of ITT in England. However, some universities concerned about its status, have changed its name to BA (education). The dominant learning path to teaching has become the PGCE program. There is no full consensus about the exact status of this program. It is mostly considered a professional degree. Recently, in compliance with the National Qualifications Network, a number of universities, certainly the ones offering competitive programs, offer 60 credits towards a Master' degree. Other institutions that choose to preserve the professional character of their programs and fear that Master level course work might be too high for their students, still use the degree PGCE, but as an abbreviation of *Professional Graduate Certificate in Education*, as opposed to *PostGraduate Certificate in Education*.

Box 4 - Bristol University: striving at excellence

Interview with Malcolm Lewis, Director of Teaching Education Partnerships, Graduate School of Education, Bristol University

The Graduate School of Education at the University of Bristol has an age-old tradition in teacher training. Bristol runs a relatively small program only at secondary school level, in ten subjects. The bachelor programs were abandoned years ago, and now PGCE programs are core business. Bristol is not interested in diversified routes. There is no need to expand and diversify more than necessary. More importantly, Bristol's strong focus on research requires a PGCE program that is strongly linked to the research activities of the Department of Education. Trainees attend lectures on major research topics, for example education of ethnic minorities and migrant students; neuroscience and education.

Due to this strong research profile and the high reputation of the University, admission is competitive and students are accomplished and very motivated. Good quality first degrees are particularly important, because the ML feels that there is a positive correlation between previous academic strength and the professional quality of graduates.

The PGCE program stresses the absolute necessity of exposure to academic knowledge. The program offers general education that should do more than just preparing teachers; it also educates young people at higher academic level. This is the reason why, starting from 2007, the PGCE program will include 60 credits towards a Master's degree.

ML feel that league tables published by Ofsted have been beneficial for good programs such as Bristol. In his opinion, the difference in quality between an A and a C program is substantial, mainly in terms of input to subject knowledge work and individual supervision of students.

The downside of the rigorous control is that some important element of teaching professionalism are no longer offered – philosophy and history of education, psychology. Students spend too much time at schools and focus on the QTS, so everything that is not congruent with the QTS tends to get pushed out of the program. Teacher education has become too uniform. Ultimately, this is a loss, because a bit of individuality, passion, and inspiration are all elements of the professional profile of a teacher. At a place such as Bristol there should be room for asking philosophical questions. Persons who have not learned to critically questioning the underlying values and principles of education may not be the best teacher we would like to have. Ultimately, education is a political matter, and students should be able to discuss assumptions taken for granted. The current system of QTS does not encourage that sort of attitude. There should be more emphasis on learning to learn, on building learning power, on moving away from subject knowledge. This shift is substantiated

by research and needs to be pursued in cooperation with innovative practitioners. These issues are not yet addressed in the existing ITT arrangements.

Currently, Bristol is one of 5 or 6 places in the country offering teacher training in citizenship as a specialized subject. About 10 others offer it alongside training to teach another subject. This new program attracts students that have not traditionally applied to secondary school teaching programs, with degrees in philosophy, political science etc. These are innovative people, prepared to lead and to shape a subject that is pretty 'patchy' at the moment, and to take a critical stance on it. At the same time, they need to comply with QTS.

Following this line, a growing number of PGCE programs seek to integrate their curriculum into Masters course, thereby offering students to obtain a masters degree with a QTS. Durham University, Homerton College in Cambridge, Oxford University, and London University, among other, require trainees to carry out research during their courses. (Holcroft, 2001)

Loughborough University, for instance, offers a Masters in teaching program. The Institute of Education at the University of London also offers a similar program.

Box 5 – Master Programs in Teaching

Master of Teaching (MTeach) at the Institute of Education, University of London

1. The Master of Teaching is a Master's level qualification designed to support and acknowledge high-level professional practice.

The program is open to candidates with QTS who are working as a part-time or full-time teacher in the UK for the duration of the course. The course comprises online-discussion and some face-to-face courses.

The broad goal of the course is to enable students to shape and evaluate their knowledge and practice in the field of teaching. Students are expected to:

- engage critically with new developments in teaching
- Deepen their subject knowledge
- Gain a critical understanding of research into teaching and learning

Describe, analyze, and reflect on their role in the process of education:

- develop and refine their communications skills through discussions, different forms of writing and a report of dissertation
- advance their professional skills in relation to their teaching, and receive credit for their successful practice
- reflect on personal and professional learning and respond positively to change
- acquire the knowledge, understanding and aptitude for successful subject leadership
- discover intellectual challenge. Stimulation and enjoyment in the context of their professional learning;

Msc in Education with QTS at Loughborough University

Loughborough University offers a new masters degree, Msc in Education with Qualified Teacher Status. It is an innovative Masters degree linked to training to be a teacher. This course allows newly qualified teachers to acquire a Masters degree at the end of their third year of teaching and therefore provides an excellent springboard for a successful career.

The first year of the programme is a full time PGCE course which prepares towards meeting the QTS standards, as well as constituting the first years of the Msc in Education with QTS. The second year links with the induction year for newly qualified teachers in school and the remainder of the course can be completed during the second and third year of teaching.

During the first year, next to the mandatory school experience, students take three masters degree modules: Professional Studies 1 and 2, in one of 3 specialist subjects – Design and Technology, Physical Education or Science and General Professional Studies. The second year is organized as a distance-learning module and is linked to the newly qualified induction year. In year 3 and 4 there are three modules in year three and a school-based distance-learning research project in year four.

sources: <http://www.ioe.ac.uk/mteach>
(www.lboro.ac.uk/departments/teu).

Cost-effectiveness

Regarding cost-effectiveness of the reforms the results seem to be mixed, as it is usually the case with reforms of this scope. Financial instruments have been a significant part of the reform, applied both to training programs as to prospective students and graduates.

Significant investments have been made to make particularly PGCE programs attractive to students.

In the undergraduate programmes, students pay the usual tuition fees at their ITT providers. That is up to 3.000 Pounds a year. Undergraduates are eligible to receive a Student Loan for Fees that is independent from income, a Maintenance Grant depending on household income and a Student Loan Maintenance.

Students of postgraduate ITT programmes pay the ITT providers tuition fee of up to 3.000 Pounds. New students can apply for a Student Loan for Fees independent from income and a Maintenance Grant of minimum 1.200 Pounds up to 2.700 Pounds depending on household income. The TDA also offers training bursaries for PGCE trainees. This bursary is 9.000 Pounds for most secondary subjects⁷ and 6.000 Pounds for other secondary subjects or primary education. None of these financial incentives are offered for four-year programs. Newly Qualified Teachers receive a one-off taxable bonus, the 'Golden hello', if they are trained in English (including drama), information and communications technology, design and technology, modern foreign languages, religious education, music mathematics or science. Those trained in mathematics and science attract 5.000 Pounds and all other priority subjects 2.500 Pounds.

Two major changes in the financing model of ITT have become commonly accepted. First, ITT providers receive funding from TDA according to the quality of their programmes and number of places allocated to them. Second, training schools receive a reasonable amount of money from ITT providers. Eventually, ITT providers are punished for unsatisfactory performance of partner schools.

According to Ofsted, training schools programme presents good value for money, leading to increased number of trainees, increased staff involvement and improved quality of school-based training (Ofsted, 2003). Overall, ITT costs are significantly higher than the core funding in 80% (12 of 15) institutions. Per funded subject, nearly two thirds of the case study institutors show costs as significantly higher than funding. Institutions are only recently aware of the gaps they are facing between costs and external funding of their activities. In response, they are gradually becoming more business-like. Academics are often providing a 'hidden subsidy' from working hours longer than a 'standard' working week. The costs of PG courses are higher than those of UG courses, because of the longer academic year (36 weeks in PGCE), the inclusion of QTS above the credit course work; the need to cover a large number of subjects in a short time, and extra placement visit, the demand to communicate well with students who are at training schools so much; higher payments to schools (J M Consulting, 2004)

⁷ These subjects are secondary maths, science, English, drama, information and communications technology, design and technology, modern languages, religious education or music.

6. Conclusion: lessons and pitfalls

The English education reform as a whole, and the teacher training reform as part of it, is unprecedented in its scope in post-war Europe. A reform of this breadth and depth invariably induces a lot of controversy. Since lessons drawing from good practice is the purpose of this study, it is useful to outline the areas of major achievement and the major problematic issues. The lessons could be sought in two main directions. The first direction is to concentrate on elements of the overall policy that have emerged in the last 20 years, which are largely considered an improvement and a success. It is also important to take into account the less attractive sides of these elements and the potential problems associated with them. The second direction is to look at the way the reform has been conceived, initiated, and implemented. This is probably more useful in a negative sense, to demonstrate how the English context colours the line of events and makes attempts to implant it to other countries with different political and educational traditions quite problematic.

Most prominent elements and downsides of the reform

Three aspects of the reform now appear to have become accepted by the field. First, the existence of the Qualifying Teaching Status, the QTS, based on a competency approach; second, the notion of 'partnership' between teacher educators and schools and the teacher as a 'mentor' to a trainee, and third, the existence of diversified learning paths towards teaching, with PGCE taking the most prominent place, instead of the traditional first-degree programs. We discuss these three features in some more detail below.

Undoubtedly the most prominent feature of the English ITT reform is the introduction the competency approach to assessing teachers at the initial stage, organized around the award of QTS. Initially introduced to ensure that graduates of teacher training programs satisfy minimum requirements, QTS has become the main ticket to the teaching profession in England. Probably the most positive impact of the QTS system is the improved status of the profession, due to the increased accountability and transparency of the field, associated with this independent 'quality seal' for each person engaged in teaching. Consequently, this infers approval and increased status for the teacher training programs as well, as long as they are successful in preparing their students to acquire the QTS. In addition, students and teachers alike are pleased to work towards clear goals.

However, the system of inspection and control established around the QTS provision is seen by many as the most serious downside of the English ITT reform. The Ofsted inspection system has been highly contested ever since it has been introduced. There is a large degree of dissatisfaction with the rigid, time consuming and otherwise burdensome inspection rounds. Three major groups of complains concern the inspection overload, the intrusion on academic freedom, and the lack of useful feedback. We must note here that these concerns have been voiced in relation to the QAA by the higher education sector as a whole. Given the fact that staff at universities is familiar with both, however, we must conclude that they consider Ofsted significantly more intrusive.

What is probably a more fundamental problem is that little room is left for curriculum innovation. As one respondent puts it 'we innovate only in the corners of the curriculum, the ones that are not quite visible for Ofsted.' The standards of the national curriculum are generally seen as too rigid, too detailed and poorly prioritized. As a result, students are caught up in fulfilling technical requirements and hardly have the opportunity to step back and reflect on their work. The fundamental choice for teacher *training* as opposed to *education* means that skills acquisition takes priority over general education and growth and a reflective and creative attitude towards the teaching profession. The focus on training stresses the importance of class management over deeper inquiry into such fields as educational sciences and educational philosophy, psychology and neurosciences, which have a lot of new insights to offer on children's learning processes and on the way the educational system should

function to meet their demands. According to one interviewee: “We are becoming more critical of this regime: we are producing bureaucratic teachers – professional processors who do not know how to be creative and innovative.”

For these reasons, teacher educators fear that they may be leaving out the most creative and caring future teachers, because they do not comply with the technical, production-oriented style of reaching the QTS. The downside of a system that guarantees minimum quality, is that it does not allow for taking risks and thus may be rejecting some of the more original and innovative young people. As one respondent summed it up ‘we definitely have cut out the worst part [of graduates], but we may have cut the best one, too.’

As a response to these concerns, it is generally felt that, since 2002, the movement is towards less rigidity and less detailed regulation. The system now does not cover in such great detail what should be taught and how it should be taught. This is a new situation for England, since prior to the publication of ‘Qualifying to teach’ in 2002, the regulatory arrangements covered the content of teacher training. The new approach is seen by many as more ‘streamlined.’ (Brumfitt, 2003) Indeed, respondents agree that ‘things have been loosening up lately’, but they still stress the fact that there is little incentive to improve from within, since the inspection reports are so important for the very existence of the program. In the words of a teacher trainer, ‘as a precaution, we do not even take the freedom we might have.’

Concluding, and given the evolution of the national curriculum or ‘standards’ in response to criticism, we can say that the most positive side of QTS is its very existence, no matter what kind of legitimate demands could be placed about the precise level of detail or priority.

Another key aspect of the ITT reform is the much greater emphasis on practical experience that could be gained at schools. School partnerships have become firmly established in the English teacher training landscape. In England, it is clear that, despite the opposition of many teacher educators, the prescribed insistence on extensive school experience in training has led to the formation of partnership models which are now supported by all interest groups. The partnerships were established as an important part of the shift towards emphasizing the central role of practice and the importance of making didactic and pedagogical studies relevant to that practice. Compared to most European countries, England’s partnership system is much more formalized and standardized.

Research studies have charted the more positive evaluations that trainees give to their courses following the introduction of the school-based approach. The quality of the experience that can be provided in schools have thus become a key aspect of the curriculum. For students, the teaching practice is highly valued, because it gives them the certainty that they would be adequately prepared for the reality at school after graduation. For schools, apart from tapping into a pool of graduates to fulfil vacancies, the value of the partnership is in the opportunities it offers to teachers. Teachers acting as a ‘mentor’ have discovered another path for further professional development, which they consider mostly enriching. The exchange with students brings mentors closer to the latest academic insights in the field of teaching. In addition, universities invest a lot in improving the qualifications of the mentors, thus offering them direct and challenging access to university resources.

And yet, school partnerships are also surrounded by controversy, mainly about two issues – financial arrangements and the role of academic subjects in the curriculum. Schools do receive financial compensation for their involvement in teacher training. University programs, however, are held accountable for the quality of performance of schools in partnerships. At the same time, universities have no financial or administrative instruments to intervene when schools fail to perform up to standard. Add to this the complexity of these arrangement, generated by the sheer number of partner schools needed

to provide practice places for all students, and it becomes clear that occasionally teacher training programs become very critical about the school partnership arrangement.

As far as curriculum is concerned, the limited amount of teaching time, particularly in the PGCE programs, leads to a constant tension between academic and practical demands, and sometimes it becomes difficult for programs to maintain the standard of the academic disciplines in the face of too much bias towards practical application.

Directly related to this issue are the debates as to whether GTP produce better teachers than PGCE. School employers tend to prefer the more consistent classroom experience of GTP trainees over the more 'academic' product of a PGCE program.

The debate about the relative strength of GTP and PGCE programs leads us to the issue of diversified learning paths coexisting in the English ITT landscape today.

The one year PGCE programs have become the most popular route to teaching. This attracts different types of students and consequently shapes the teaching career in a new way – not necessarily as a lifelong occupation, but as an episode in one's career path, at a certain stage of development. Apart from the obvious attractiveness of the financial incentives, PGCE programs have become attractive for students because they allow them to postpone definite career choices. Also, PGCE programs are better embedded in Master Degree paths, thus for a number of students they are a stepping stone only to a higher degree. It remains to be seen what the effect will be of the mandatory inclusion of 60 credits at master level in PGCE programs.

Curiously, the dominance of the PGCE programs may have been established as a quite unforeseen side-effect of the teacher training reform. Interviews indicate that universities give preference to PGCE programs, among other reasons, in order to 'get Ofsted off their back'. Running a four-year program implies inspection over the full curriculum, running a professional program on top of regular bachelor programs limits the inspection interference to one year.

Thus, another serious problem stems from the very success of the teacher training reform: the increasing demand to embed programs in practice and to organize a competence driven curriculum contradicts the short term of the study – one year proves not to be enough for a process of skill acquisition and attitude change needed for a good teacher training. Partly this issue has been addressed by stipulating the supervision of Newly Qualified Teachers. Every new teacher is intensively supervised in the first year, based on his or her Career Entry Profile which indicates the areas for improvement. However, the level of support seems to differ significantly per school. Some seem to be left to sink or swim, according to participants in the Times Education supplement online forum. This is why the idea of incorporating the NQT induction year into the PGCE program itself enjoys some support.

England as a reference point for Europe

England appears to be a good national case study since teacher training has traditionally followed a two-cycle structure (Honours, Postgraduate Certificate). However, teacher training does not necessarily follow the general model of Bachelor and Masters degrees. According to the Education working group of the Tuning pilot project there is an anomalous situation within the context of the implementation of first and second cycles of degree awards. The second cycle does not lead to a Masters degree, but to a Postgraduate Certificate. While formally located at Masters level, there is still some debate in the sector about whether this is adequate given the professional nature of the training. Since the UK is actively represented within the Tuning Group it will seek to harmonise such anomalies should they occur within the English system (see website Tuning.eu).

Apart from this, the English developments have had quite a strong influence at the European level. Many, if not most countries follow national guidelines for their curricular components and standards set by Ministries of Education or professional Bodies such as Teaching

Councils, thus lending a degree of homogeneity to programs. The more developed the partnership approach and the practical component of programs, the more likely the assessment formally incorporates a model of competencies, outcomes, and standards. The learning outcomes model of ITT has been a serious input into the European Tuning project.

The Tuning Project for Education has identified a number of trends that have been signalled in this case study and which can function as a reference point:

- an increasing requirement that initial education for teaching is a contractual obligation for teaching in universities
- teaching in HE becoming a distinct field of educational research
- a growth in evidence based practice as the informing philosophy of teacher education
- a research component increasingly as an element of initial teacher education programs, at least at second cycle level
- a growing trend in Education for part-time study at all levels, especially at second and third cycles, along with a parallel trend of self-funding at post-first cycle level
- a widening range of candidates entering teacher education, including 'second career' mature professionals
- an increasing proliferation of flexible learning paths also on higher degree levels perhaps heralding the beginning of lifelong learning perspectives and opportunities for educational professionals
- the increasing use of online learning approaches within teacher education programs

The international mobility remains still a weak point in teacher education. However, a two-cycle structure with PGT and an outcome approach to quality assurance (QTS) facilitates potentially the access of candidates from other countries. The Global Student Teaching program confirms that this international mobility is actually happening.

Since teacher education and training in England is used here as exemplary for European developments we conclude with some final evaluative remarks on the reform process of this case study.

For those involved in everyday teaching, living through the stream of reform in the last 20 years felt more like a never-ending process of adaptation and change. Looking back, most do agree that teacher education now has better overall quality, attracts more students, and prepares them more adequately for everyday school practice. And still, the price may be too high – a shared feeling of infringed autonomy and limited decision-making space combined with workload that at times have become intolerable. The root cause of this undercurrent dissatisfaction is the way the reform was pushed – top-down, centralized, hierarchical and control-oriented. 'Pre-service teacher education in England reflects trends and developments in other parts of Europe. The move to providing parity of training for primary and secondary teachers, the increased importance of the university in teacher education, and the growing interest of government in teacher quality, are all reflected in experience elsewhere. But England is unique in the highly centralist and interventionist approach adopted by Government in the 1980s. The hostility of teacher educators to that process can sometimes obscure specific gain and advantages that have become generally accepted throughout the system. (Moon, 1998)

Indeed, the problems tackled by the English reform are much too familiar to many European countries; this explains their interest in the English solution and their mixed feelings about the results. For example, a Dutch study group visiting a number of teacher education programs in England, while impressed by the day-to-day practice and organization, still felt that the reform in England has left 'little space for individual freedom and experimenting at the work floor level. (LPEP, 2003)

Finally, the initial ideological impetus of the teacher training reform has been a certain image of the teaching profession that can be labelled – 'back to business' – teacher should teach and

their achievements should show up in children's math and language tests. Increasingly, a shift towards a broader definition of the role of education is taking place. It includes care for the overall wellbeing of the child. In the recent green paper "Every Child Matters"[2003 add ref] the term *educare* is used for the first time. Some twenty years ago it would have been dismissed as a leftist soft expression of the disproportionately strong influence of academics in the field of education. Now, it is acknowledged that school is more than a place to learn how to read and write; that it is a place where a child should feel safe and secure to explore and develop his or her natural potential. This emerging broader view on the role of education implies a shift in the perceived role of teachers and in the demands that could be placed on their professional expertise. Whether the current system of teacher training would be flexible enough to respond to the challenge, remains to be seen.

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