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EDUCATIONAL REFORM IN FRANCE, WEST-GERMANY AND THE UNITED KINGDOM: UPDATING THE CASMIN EDUCATIONAL CLASSIFICATION

HILDEGARD BRAUNS UND SUSANNE STEINMANN

In empirical education and labour market research, different approaches for measuring education have been pursued; they reach from ‘number of years of schooling’ and educational scoring as continuous measures to typologies as the ISCED (International Standard Classification of Education) and CASMIN classification (Comparative Analysis of Social Mobility in Industrial Nations) as categorical approaches. The value of the CASMIN educational classification has been demonstrated in many studies in comparative social mobility and labour market research. The original CASMIN coding scheme, however, does not capture the institutional changes that took place in the course of the educational reforms that affected most European societies following World War II. In this paper, the original CASMIN coding scheme is updated according to recent developments in the educational systems of France, West-Germany, and the United Kingdom. In addition, specific refinements and modifications of the CASMIN classification are proposed.

1. Introduction*

In comparative sociological research, different approaches for measuring education are pursued. They reach from ‘number of years of schooling’ and educational scoring as continuous measures to categorical typologies which differentiate various educational credentials or levels of education. The relative merits of the respective measurements of

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education depend on theoretical concerns as well as on the specific structure of the educational system which is found in the country to be investigated (see König/Lüttinger/Müller 1988; Braun/Müller 1997). The CASMIN project (Comparative Analysis of Social Mobility in Industrial Nations) has proposed a certificate-oriented classification schema which has proved to be highly valuable in the analysis of patterns and processes of social stratification in European societies.

Table 1: The CASMIN educational classification

Qualification	Description
1a	Inadequately completed general education
1b	General elementary education
1c	Basic vocational qualification or general elementary education and vocational qualification
2a	Intermediate vocational qualification or intermediate general qualification and vocational qualification
2b	Intermediate general qualification
2c	Full maturity certificates*
3a	Lower tertiary education
3b	Higher tertiary education

* In König/Lüttinger/Müller (1988) and in earlier publications, the level of the maturity certificate is referred to as 'higher education' (3a), lower-level tertiary certificates as (3b) and upper-level tertiary certificates as (3c).

The central objective of the CASMIN project was the comparative analysis of class formation and social mobility in industrial nations. Education is considered as a central factor in the process of class reproduction. The CASMIN educational classification has been developed within this framework in order to capture the effects of different educational systems on processes and patterns of inter- as well as intragenerational mobility. Against this background, the CASMIN schema is supposed to distinguish educational levels according to their selectivity effects. In this respect, the schema claims functional equivalence of its education categories across countries. The criteria of selectivity combines two perspectives: demarcation of typical class-barriers in the educational system on the one hand, and identification of decisive signals for utilisation on the labour market on the other. Following these considerations, the CASMIN schema is constructed as a certificate-oriented classification that distinguishes educational credentials according to hierarchical level (length, quality and value of education) on the one side, and according to whether they imply general or vocationally oriented education on the other. The CASMIN

classification grid corresponds to the qualification levels as described in table 1 (for more detail see König/Lüttinger/Müller 1988; Shavit/Müller 1998).

Due to its credential orientation, the CASMIN schema allows investigation of the effects pertaining to specific educational reforms in single countries. Unfortunately, the CASMIN work did not cover the period of educational reform and expansion following World War II¹. Therefore, the original coding schema does not capture the changes that took place in national education systems over the last three decades. For contemporary comparative research, the many forms and levels of vocational qualification as well as institutional diversification within general education need to be taken into account within the CASMIN classification. For countries where the education system was subject to massive institutional reform and quantitative expansion, the original coding schema even needs substantial reformulation. In this paper, we therefore propose an 'up-date' of the work done by the CASMIN researchers. We concentrate on three countries: Germany, France, and the United Kingdom. The paper proceeds as follows: First, the educational systems of France, West-Germany, and the United Kingdom will be portrayed as well as the most central reforms. A review of the historical background and major characteristics of the educational system in each of these countries is already provided by König/Lüttinger/Müller (1988) and will therefore not be subject of this paper. Given this description, we will then proceed to construct the educational classification schema for the three countries. The data that we rely on for the purpose of this paper are national labour-force surveys for the 1990s, more precisely the French Enquête Emploi, the German Microcensus, and the British Labour Force Survey. A critical evaluation of the CASMIN classification in comparative research and suggestions for modification of the schema are presented in the final discussion.

2. The educational system in France, West-Germany, and the UK

Following World War II, most European countries have experienced an enormous educational growth reinforced by more or less substantial institutional reforms. Educational reform served a two-fold interest: On the one hand, the objective was to increase equality of educational opportunity by removing or reducing existing partitions within the structure of secondary schooling traditionally associated with the social origins of the students. On the other hand, educational politics sought to supply a work-force apt to the challenges of mod-

1 The data used in the framework of the CASMIN project were from the early 1970s.

ern industrial society. In response to the reforms, the education system experienced changes of a fairly similar type in most European countries: Lower secondary education became an almost universal good and upper secondary education was made available to a much larger, and steadily increasing proportion of the population. Tertiary education also expanded substantially, especially over the last two decades and offers a wider range of qualification opportunities than in earlier times. Institutional differentiation through introduction of new forms of higher - general and vocational - education definitely helped to realise the ambitious plans of quantitative expansion. In addition, in many European societies, implementation of higher-level vocational and technical training became a key element of education policies for satisfying the 'manpower demand' of rapid economic growth and modern industrial production, and, in the last two decades, for coping with problems of labour market integration and youth unemployment. Despite fairly similar motives for educational reform and expansion in most post World War II-societies, a closer inspection reveals substantial cross-national differences in the institutional arrangements of educational systems.

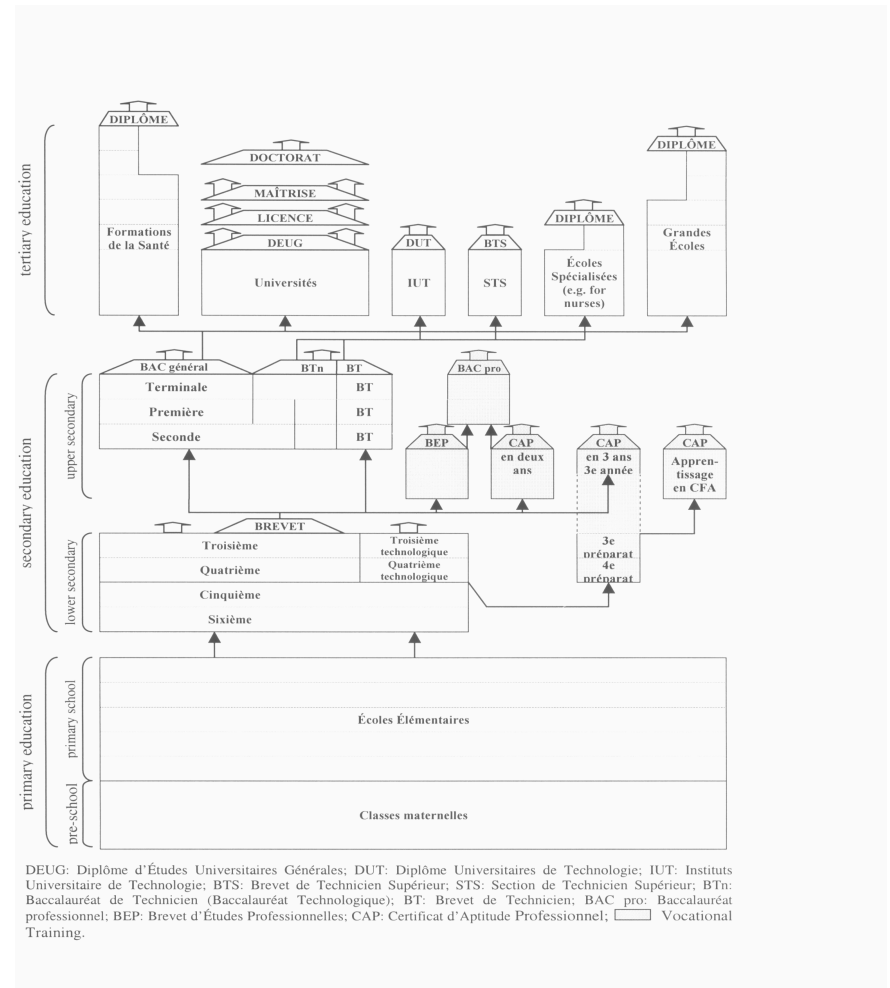
France

The French education system underwent substantial change in the course of the educational reforms. The reforms covered a variety of initiatives - ranging from fundamental institutional reorganisation, changes in procedures for selection and certification, reformulation of curricula to the modernisation of vocational education at the upper secondary and tertiary levels.²

Up to the early 1960s, the French educational system was basically organised as a dual-track system with elementary schools, including so-called higher-elementary institutions (*enseignement primaire supérieur*), and vocational tracks on the one side and secondary schooling and higher education on the other. In a sequence of reforms, the educational system has been completely reshaped. By delaying the points of irreversible tracking towards ultimate career options, the reforms aimed to give students more time in identifying and developing their true talents and vocation. Today, the educational system is organised in three successive levels (see figure 1).

² For an extensive discussion of the French educational system and its reforms see Prost 1992a, 1992b; Lelièvre 1990; Robert 1993; Raynaud/Thibaud 1990; Léon 1972; Meylan 1983; Campinos-Dubernet 1995; Brauns 1996, 1998; OECD 1996b.

Figure 1: The Educational System in France



1. Primary education which includes two to three years of early-childhood education in the *maternelles* and five years of elementary education provided by the *écoles élémentaires*;
2. Secondary education divided into a four-year cycle of lower-secondary education supplied by the *collèges* and a two- or three-year cycle of upper-secondary education provided either by a vocational *lycée* or a general *lycée*;
3. Higher education supplied by the universities, including university-affiliated institutions, the *Grandes Ecoles* or post-*baccalauréat lycée* classes.

Since 1975, lower-secondary schooling is organised under the roof of a comprehensive school system (*collège unique*) following upon five years of universal elementary education³: all pupils go from primary education to the *collège*. The idea of the *collège unique* was to provide a common core (*tronc commun*) for the complete first cycle of secondary schooling (*premier cycle*) that all students should go through until achievement of the *Brevet* at about the age of 15.⁴ The first two years of secondary schooling (6th and 5th grade), forming the so-called 'observation cycle' (*cycle d'observation*), are indeed strictly the same for almost everybody. The next and last two years of lower secondary schooling (4th and 3rd grade), however, are conceived as an 'orientation cycle' (*cycle d'orientation*) which differentiates between a general and a more vocationally oriented branch. Allocation is decided within the framework of the *orientation* after fifth grade, at about age 13, as the first selection point in the French educational system.⁵ Selection is based on pupils' educational achievement in the first two years of secondary schooling and, quite recently, also on parents' preferences in the case they refuse a 'bad orientation'. Until the late 80s, pupils not apt to follow general education in the *quatrième générale* and *troisième générale* were offered the low status alternative of pre-vocational education which was provided by a *Classe Préprofessionnelle de Niveau* (CPPN), followed by a preparatory apprenticeship class (*Classe Préparatoire à l'Apprentissage*, CPA). These tracks typically led to early entry on the labour market or to vocational qualification,

³ Until the educational reforms, the *Certificat d'Etudes Primaires* (CEP) was offered as a leaving certificate of primary education. The examination was taken at the age of about 12, at the end of primary school. It was generally not taken by those who enrolled in secondary education, nor was it achieved by all pupils in primary schools. Consequently, before the massive educational growth, the CEP played an important role in differentiating among school-leavers with only primary education.

⁴ The *premier cycle* covers four years of study from the sixth to the third grade.

⁵ From the beginning of the educational reforms in 1959 until the mid 1970s, the first streaming watershed was situated at the beginning of secondary schooling. Pupils were allocated either to the regular general track or to so-called 'transition classes' at sixth and fifth grade (*Sixième et Cinquième de Transition*) and 'practical classes' at fourth and third grade (*Quatrième et Troisième Pratiques*).

primarily in the framework of an apprenticeship. Since the late 80s, the pre-vocational tracks are being gradually closed; its pupils are integrated into so-called technological classes at fourth and third grade (*quatrième technologique* and *troisième technologique*). The technological branch, running parallel to the general branch, has been introduced in order to counteract the problem of early selection into 'one-way tracks of exclusion', as the option of pre-vocational education was called, as well as to raising the status of technical education through positive selection.

In response to the tremendous increase of students having accomplished the first cycle of secondary schooling as well as for concern of expanding facilities in technical and vocational education, the second cycle of secondary schooling (*deuxième cycle*) has been institutionally diversified: It distinguishes between a short-cycle formation, i.e. the short technological track (*enseignement technologique court*), and a long-cycle formation, being the long technological track (*enseignement technologique long*) or the general track (*enseignement général long*).⁶ Allocation to one of these branches, depending on pupils' school performance and parents' preferences, is again decided in the framework of the *orientation* after third grade, the second—and today major—streaming point of the French school system.

The *enseignement technologique court* offers vocational education which - on a full-time schooling basis - is provided by the *lycées professionnels*. Practical aspects are much less developed in the French vocational training system than theoretical aspects: most vocational education is provided within the state-controlled education system.⁷ Moreover, due to a consistently strong emphasis on general education in the French educational system, vocational education, and practical training in particular, confers a relatively low level of prestige. The educational reforms have shifted entry into vocational training towards the third grade, at the end of the first cycle of secondary schooling, thereby opening up new qualification tracks that can be taken on completing compulsory schooling.

The *Brevet d'Enseignement Professionnel* (BEP) which is prepared in two years of study after third grade has largely replaced those *Certificats d'Aptitude Professionnelle* (CAP) which traditionally were prepared within three years after fifth grade. The BEP is formally equal to the CAP but is more theoretically founded and confers a broader qualificational

⁶ The *deuxième cycle long* covers three years of study from the *Seconde* to the *Terminale*.

⁷ For description and discussion of the French vocational education system see for example Tanguy 1986, 1991a, 1991b; Campinos-Dubernet/Grando 1988; Bouyx 1997 and Formation Emploi 1989, no 27-28; Brauns 1999.

profile. The decline in pupils opting for a three-year CAP after fifth grade, i.e. *before* having finished lower-secondary schooling, was consistent with the aims of the comprehensive *collège* to move back the first selection point after two years of secondary school, at fifth grade (*cinquième*), to the end of lower-secondary schooling, at third grade (*troisième*). The CAP is now primarily an apprenticeship qualification which allows to proceed to the *Brevet Professionnel* (BP), the craftsmen masters certificate, following at least two years of work experience in the respective occupation.⁸ Pupils having completed the first cycle of secondary schooling would typically not choose the low-status option of an apprenticeship at the level of the CAP. It is predominantly left to those pupils who have been 'selected out' in the course of the orientation cycle in lower-secondary schooling.⁹ Apprenticeship training alternates work place training with classroom instruction in one of the *Centres de Formation d'Apprentis* (CFA). The majority of apprentices is not enrolled in CFAs attached to local schools, but in private institutions or institutions run by the Chambers of Trade. Until 1987 apprenticeship training was only a pathway to the CAP. The laws of 1987 and of 1992 have made apprenticeship training a pathway to the BEP, the vocational *Baccalauréat* and even higher education diplomas with a specific occupational focus (see below). By the same token, apprenticeships that traditionally were largely confined to certain crafts have been made available in a wider range of occupations.

A revolutionary attempt has been made in 1985 by creating a so-called vocational *Baccalauréat* (*Baccalauréat Professionnel*) enabling pupils holding the BEP to pursue their education, potentially up to higher education. The vocational maturity certificate trains young people as technicians or as skilled technical and clerical staff. On the one hand, the underlying idea of opening up opportunities in higher-level vocational qualification was to overcome the typically bad reputation of dual forms of vocational training in France: Since the late 80s, the *Baccalauréat Professionnel*, the *Brevet de Technicien Supérieur* (BTS) and other tertiary diplomas can also be accomplished in the framework of an apprenticeship. On the other hand, reforming the vocational education system was aiming at coping with irreversible selection into vocational tracks, this time not by delaying ultimate career options

⁸ The BP can also be accomplished by those not holding the CAP under condition of at least five years of work experience.

⁹ Until 1991, one could also pass the *Certificat d'Education Professionnelle* (CEP) following a one year course. The CEP was not sufficient to become a skilled worker and was achieved by only a few pupils. It was primarily aiming at giving those pupils not apt to continue in any other education track a vocationally-oriented leaving-certificate.

but by opening up opportunities for gifted vocationally qualified students. Passing a BEP, for example, implies passing the vocational *Baccalauréat* or - via specific classes - the technological *Baccalauréat* (see below) which, in turn, means access to higher education. The reforms that took place in vocational education have opened up a variety of opportunities to pupils qualifying at the level of skilled manual or non-manual work. This holds only true, however, for the BEP-tracks. Even though the CAP is formally equal to the BEP, the options available to holders of a BEP and their recruitment upon completion of compulsory schooling has considerably reduced the status of the three-year CAPs.

The *enseignement technologique long* and *enseignement général long* are combined in a *lycée général et technologique (LEGT)*¹⁰. The long technological and the general tracks run parallel after a first common year. Within three years, the general track leads to a *Baccalauréat Général*, the technological track to a *Baccalauréat Technologique*, the technical maturity certificate being introduced in late 60s. Whereas the objective associated with the vocational *Baccalauréat* was to take school-leavers directly into the labour market (though a few of them also achieve higher education certificates), the principle aims of introducing a technological *Baccalauréat* was to prepare school-leavers for higher technical diplomas which can be achieved in a *Section de Technicien Supérieur* (STS) or an *Institut Universitaire de Technologie* (IUT) (see below).

All types of *Baccalauréat* are accomplished by means of a centralised, national examination. In 1985, the national ministry decided to educate 80% of each age group to the level of the (general, technological or vocational) *Baccalauréat* by the year 2000. The *Baccalauréat*, originally an elite qualification reserved to a minority of the population, was defined as an almost universal educational good. At the same time, though, the *Baccalauréat* became a highly stratified track. The differentiation was originally meant to accommodate varying interests. In practice, however, not only the type of the *Baccalauréat* (general, technological, vocational) or grade achieved, but also the accomplished section - each of which with a fixed subject focus (literature and language/social and economic sciences/mathematics and physics etc.) - became a major basis for selecting among pupils.¹¹

¹⁰ The underlying idea of renaming technological as well as vocational training institutions '*Lycées*' was to upgrade the standing of practically-oriented education by conferring them the same status that classical *Lycées* have traditionally enjoyed.

¹¹ In the early 1980s and early 1990s a number of reforms took place to counteract the hierarchical distinctions which have arisen between sections, within which the physics- and mathematics-based *Baccalauréat* is situated at the summit. The first component of these reforms was to delay ultimate points of

The enormous increase in holders of a *Baccalauréat* in the last two decades has provoked an unexpected run on higher education institutions, in particular on the university faculties that are bound to guarantee open access. Several new tracks as well as institutions have been implemented, on the one side for coping with the right on tertiary education that the mass of French 'Bacheliers' would claim. On the other side, there was a substantial political interest in adjusting school-leavers qualification profile to the needs of economy. In consequence, tertiary education is highly differentiated in contemporary France.

One dimension to characterise this differentiation relates to the hierarchy of qualification levels, officially named *Bac+2*, *Bac+3* etc. according to the length of study following the *Baccalauréat*. In the course of the educational reforms, university studies have been reorganised into a sequence of three cycles, the first of which qualifies on the level *Bac+2* by achievement of the *Diplôme d'Etudes Universitaires Générales* (DEUG)¹² or the *Diplôme d'Etudes Universitaires en Sciences et Techniques* (DEUST). The second university cycle aims at more specialised studies in a selected major. Following the DEUG or DEUST, it leads within one additional year to the level of *Bac+3* by achievement of the *Licence*, within two additional years to the level of *Bac+4* by achievement of the *Maîtrise*, or prepares for the secondary-level teacher certificate (CAPES). Beyond the level of *Bac+4*, students may also register for the third cycle in order to achieve the *Diplôme d'Etudes Approfondies* (DEA) as a prerequisite for admission to the *Doctorat*, or the *Diplôme d'Etudes Supérieures Spécialisées* (DESS) as a post-graduate diploma in a specialised area.

For most students, higher education is achieved in the university faculties. Yet, the hierarchical qualification levels also embrace degrees from other institutions, some of which are affiliated to the university sector. Besides the DEUG *Bac+2* includes a quite heterogeneous set of qualifications, most of which are diplomas of a more vocational nature. It involves two-year studies at the exclusive *classes préparatoires* that prepare the most outstanding 'Bacheliers' for the national *concours* by which the *Grandes Ecoles* select their students. Expanding facilities in the short-study sector also served the purpose of building up capacity in high-level vocational education. Since the early 1960s, the *Sections de Technicien Supérieur* (STS) and, since the late 1960s, the *Instituts Universitaires*

selection by introduction of a *Seconde de Détermination* (at first year of upper secondary education), upon completion of which pupils are to choose a subject specialization.

¹² The DEUG, however, is not recognised by collective labour agreements.

de Technologie (IUT) offer a short-term, that is two-year formation (*Bac+2*), to train technicians. The former confer the *Brevet de Technicien Supérieur* (BTS) which is more highly specialised than the *Diplôme Universitaire de Technologie* (DUT) which can be achieved in the latter institutions.

Both institutions, however, are selective in admission, especially the IUT which enjoy a very good reputation, presumably *because of* this selective recruitment (see Boudon 1980). In contrast to the universities, these institutions have a fixed course schedule that students need to follow, compulsory work experience (eight weeks) and a close monitoring of the students. In addition to those institutions which aim at qualifying technicians, there are other lower-level tertiary institutions that train nurses, kindergarden- and primary-school teachers. A number of these strongly practice- and application-oriented institutions are not truly new founded, but former secondary-level educational institutions that have been shifted onto the tertiary level. Besides the *License*, *Maîtrise* etc., higher-qualification levels (*Bac+4* and beyond) include the prestigious diplomas of the *Grandes Ecoles* and a variety of new diplomas with a more vocational focus that have been introduced over the last twenty years. The *Magistère*, for example, qualifies at the level *Bac+5*; the engineering master diploma, the *Diplôme d'Ingénieur-Maître*, awarded by the *Instituts Universitaires Professionnalisés* (IUP) founded in 1991 qualifies at the level *Bac+4*. The gradual increase of more vocationally-oriented diplomas on high qualification levels reflects the efforts made to strengthen the occupational orientation of the universities and to reduce the gap in this respect between the universities and the *Grandes Ecoles*.¹³

The second dimension typically referred to for capturing the differentiation within French higher education relates to differences in the degree of 'closure' or exclusivity between higher-education institutions. Some of the institutions, especially the university faculties, provide open entry to everybody holding a maturity certificate. Others, like the *Grandes Ecoles* or a few university affiliated institutions recruit their students following a more or less demanding and time-consuming selection process. While the university faculties are faced with an increasing *massification* due to the educational expansion, the most prestigious *Grandes Ecoles*, as the *Ecole Polytechnique*, *Ecole Nationale d'Administration* etc., have continued their tradition in a selection and formation of a very small elite

¹³ The founding of university institutions that specialise on training of high-quality engineers not only served the purpose to enhance the provision of engineers out of economic reasons. The idea was also to endow the universities for competition with the elitist *Grandes Ecoles* which traditionally have the prestigious monopoly on the formation of French engineers.

(Suleiman 1979, 1995; Bauer/Bertin-Mourot 1995a, 1995b). Originally founded for the supply of higher civil servants, the *Grandes Ecoles*—each of them with a very specific occupational focus—offer today the whole range of scientific disciplines. In the last decade, a variety of smaller *Grandes Ecoles* have been founded especially in business studies that are far less prestigious than the traditional ones.

In 1969, an official grid of qualification levels has been introduced that classifies school-leavers with different educational levels as follows:

Level VI:	First cycle of secondary education (<i>premier cycle secondaire</i>), completion of a <i>Classe Préprofessionnelle de Niveau</i> (CPPN) and a <i>Classe Préparatoire à l'Apprentissage</i> (CPA), vocationally oriented qualifications within a one-year formation as the <i>Certificat d'Education Professionnelle</i> (CEP)
Level V bis:	Completion of a <i>Quatrième technologique</i> , a <i>Classe de troisième</i> and vocational education in the <i>cycle professionnel court</i> without achievement of a vocational diploma
Level V:	Completion of vocational qualification in the <i>cycle professionnel court</i> (CAP, BEP), leaving the long cycle of upper-secondary schooling (<i>enseignement général long</i> or <i>technologique général long</i>) without completion of the <i>Baccalauréat</i>
Level IV:	Baccalauréat, Brevet de Technicien, abandoning higher-education prior to achieving qualification level III
Level III:	Diploma at level <i>Bac+2</i> (<i>DUT, BTS, DEUG, écoles de santé</i> etc.)
Level II, I:	Diploma at the level of the second cycle of higher education and beyond (<i>License, Maîtrise, DEA, Magistère</i> etc.), <i>Grande Ecole</i> diploma

West-Germany

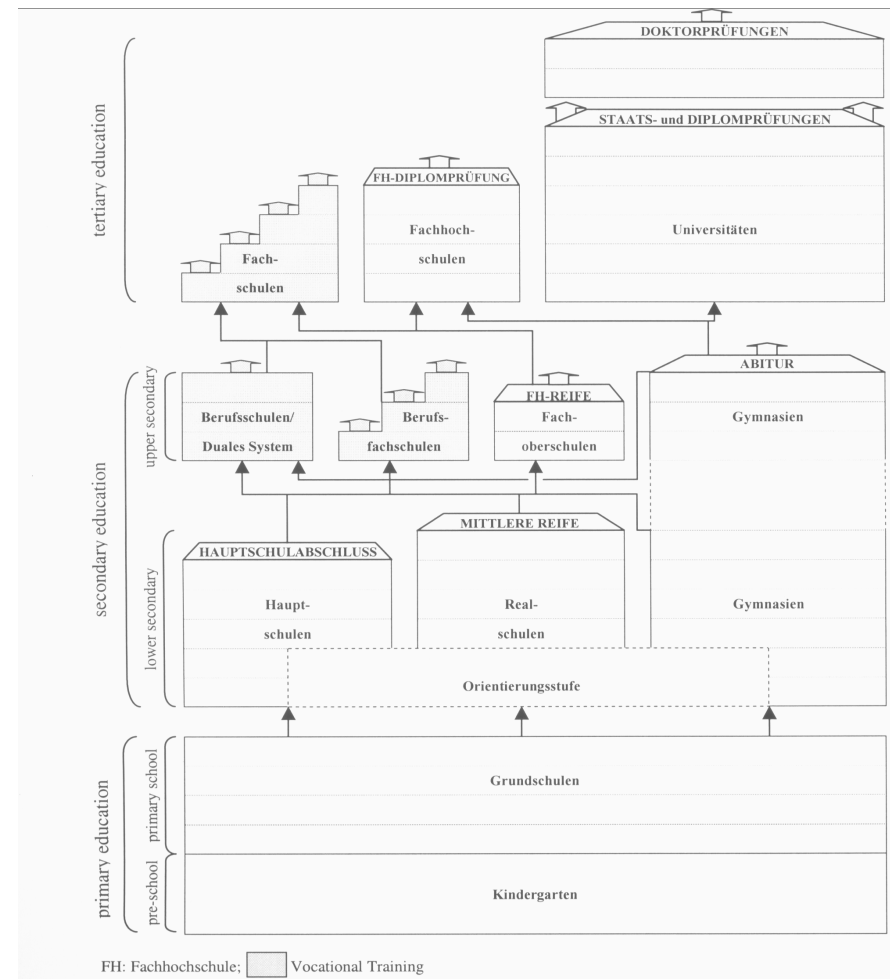
In contrast to many other countries, the basic structural features of the German educational system have remained relatively unchanged by the educational reforms (see figure 2). The attempt of designing a comprehensive system, for example, has only been realised in a few number of Länder, on a limited scale and on trial basis for experimental purposes. Basically, the traditional three-tiered system of secondary education has been kept: Following four years of elementary education, German students are selected into either the five- (or six) year track of the *Hauptschule* for completing compulsory schooling, the six-year track of the *Realschule* for achieving intermediate general qualification (*Mittlere Reife*) or into the nine-year track of the *Gymnasium* for preparing the *Abitur* which allows access to higher education. Even though several reforms for opening and diversifying *Abitur* tracks have been undertaken, curricula differentiation is subtle and not as highly institutionalised as in many

other countries. Pupils' choice of *Abitur*-options does not (yet) have a strong impact on future educational or career opportunities. By introduction of the *Fachhochschulreife* in the late 60s, the German school system has opened up a new channel for achieving maturity certification. The *Fachoberschulen* allow students having accomplished intermediate general qualification in a *Realschule* to qualify for admission to higher education via the *Fachhochschulreife*. These schools have been implemented in 1969 when the *Höhere Fachschulen* (schools of engineering and higher schools of economics) were up-graded to tertiary-level polytechnics (*Fachhochschulen*). The *Fachhochschulreife* only opens access to lower tertiary education institutions, not to the universities (see below). Even though the creation of the *Fachhochschulreife* was primarily by design of separate institutions, it is - under certain subject constraints - also conferred to pupils who leave the *Gymnasium* after only two (instead of three) years of upper secondary education.

On all levels of general education, a high percentage of pupils still opt for vocational training which mainly takes place within the dual, that is the apprenticeship training system. The dual system of vocational training is not confined to the crafts industry. It covers almost 400 federally recognised occupations in trade and administration, industry, services, agriculture, health etc. (OECD 1996). Even though pupils today attain much higher general education levels than in former times, an apprenticeship is still highly appreciated. The majority of the pupils having completed the *Hauptschule* or *Realschule* successfully continue their educational career in the vocational training system. The vocational training system also provides an attractive option to holders of the *Abitur*, prior to entering the labour market or to continuing in higher education. Even though pupils' choices of occupations to be trained in is not regulated by educational policy, one's level of general education attained highly determine the chances and choices made. Holders of the *Hauptschul*-leaving certificate and the *Mittlere Reife* mainly qualify for crafts, manufacturing or office and sales related occupational fields. Holders of the *Abitur* would typically qualify for commercial enterprises like banks and insurance companies.

The special system of co-operation between firms and vocational schools is traditionally one of the main characteristics of the German vocational training system. A pupil undergoing vocational training in the dual system holds a training contract with a private firm as an apprentice. At the same time, he attends a public-run *Berufsschule* for one or two days a week in order to supplement practical work experience by theoretical instructions. According to the German *Grundgesetz*, responsibility for school-based training, both general and vocational, rests with the *Länder* while responsibility for the regulation of company training is taken over by the Federal Government. The in-house part of the training builds on uniform regulations issued by the Federal Government in accordance with the Vocational Training Act (*Berufsbildungsgesetz*).

Figure 2: The Educational System in Germany



The German dual system has been shaped in a corporatist manner, with the state and the two sides of industry co-operating. This legal-administrative structure of the German dual system is supposed to ensure employers' influence and recognition of the educational outcomes and, at the same time, to guarantee a uniform standard of quality as well as universal acceptance of apprenticeship certificates across firms and Länder. In recent years, however, the dual system of vocational training has been subjected to much criticism, in particular for not being oriented towards modern occupations as well as for a slow adaptability towards changing technological environments (Geißler 1991, 1995; Kutscha 1992). Dual forms of vocational training have not been declared obsolete in reaction to these critiques yet. Instead, training has been diversified, adapted to modern production technologies and oriented towards 'key qualifications' in order to produce qualifications that the economy and modern work organisation demands (Greiner 1992; Schaumann 1991; Tessaring 1993).

Full-time school vocational education occupies a less important position in Germany. The full-time vocational school system is highly differentiated. Very crudely, two types of vocational schools are distinguished. The first type represented by the *Berufsfachschulen* in first place provides vocational qualifications. The *Berufsfachschulen* do not require any vocational training or experience as a prerequisite. They prepare students to achieve a qualifying certificate in a recognised skilled occupation, generally in occupations that are not covered by the dual training system. Therefore, they are considered as a supplement rather than as an alternative to the dual system. The second type of vocational schools¹⁴ is represented by the *Fachoberschulen*. Rather than providing vocational qualifications, they primarily confer entrance certificates (CEDEFOP 1991) to general education paths. Since German pupils are still submitted to very early selection, the objective pursued by implementation of these schools was to create an educational path which provides students not having entered the *Realschule* or the *Gymnasium* after elementary education the opportunity to revise and redesign early decisions on prospective school careers. The *Fachoberschulen* allow pupils having accomplished intermediate general qualification in a *Realschule* (complemented by vocational qualification or not) to qualify for admission to higher education via the *Fachhochschulreife* (see above). The *Fachschulen* are classi-

¹⁴ The *Berufsgymnasien* and *Berufsoberschulen* also belong to this type of schools. They do not exist in all 'Länder'. The *Berufsgymnasien* are *Gymnasien* with a special vocational emphasis that lead to general or faculty-restricted university entrance certificates. The *Berufsaufbauschulen* aim at students who follow or have completed vocational training. The curriculum leads to the *Fachschulreife* which is equivalent to the intermediate certificate provided by the *Realschulen* (*Mittlere Reife*).

fied as further education institutions, since quite a number of them are part-time or evening schools. They demand completion of vocational training or corresponding work-experience and provide an opportunity to skilled workers to qualify as technicians, for example.

The landscape of higher education is relatively unstratified compared to other countries. Academic training is traditionally provided by the universities, including the technical universities (*Technische Hochschulen*). In the late 60s, the *Fachhochschulen* and, in some Länder, a small number of other short-cycle institutions were founded as less academic institutions than the universities. The universities demand the *Abitur* as a prerequisite for admission. They require at least four years of study. In practice, the average time of study is much longer than four years. The *Fachhochschulen* require the *Fachhochschulreife* for admission. The courses cover four years of study; students' graduation time is reliably predictable. In contrast to other countries, the German system of higher education does neither provide an exclusive elite formation nor the opportunity to qualify in short-cycle, very strongly practice-oriented institutions. Provision of vocational qualifications is still largely charged to the dual system of vocational training. Although Germany has not established separate higher education institutions reserved to the training of civil servants, explicit links between educational certification (state examination following university studies for example) and careers in the civil service traditionally do exist. Thus, at every level of the West German educational system, preparation for specific occupations is offered, or put differently, a high number of occupational activities and positions require specific educational certification.

The United Kingdom

The educational and training system in the United Kingdom is not a uniform or standardised system across all four territories. Compared to other European educational systems the similarities within the UK are more salient than the differences. In the following we concentrate on the education system in England and Wales, the educational systems in Scotland and Northern Ireland are described in short.

The educational system in England and Wales

Comparable to most European (modern) societies the post World War II period in England and Wales was one of remarkable expansion and development in secondary and tertiary as well as technical and further education. The educational system is primarily funded by the central government, but is run by the local government through Local Educational Authorities (LEA). The *Education Act 1944* ('The Butler Act') defined the

basic principles of the modern educational system until the law of 1988. Its main implications concerned the introduction of the secondary modern school aiming at increasing equality in educational opportunity and the setting-up of a unified system of free compulsory schooling from the age of five to about fifteen (Gordon/Aldrich/Dean 1991).

The introduction of the secondary modern school reshaped the former dual to a tripartite structure of the educational system: the *grammar schools*, a relatively small number of *technical schools* which were often seen as second best for those not able to obtain a place in a grammar school, and the new founded *modern schools* (Gordon/Aldrich/Dean 1991).

In successive legislation comprehensive education was introduced largely replacing the tripartite system. Today, the structure of the educational system¹⁵ comprises three successive levels (see figure 3).

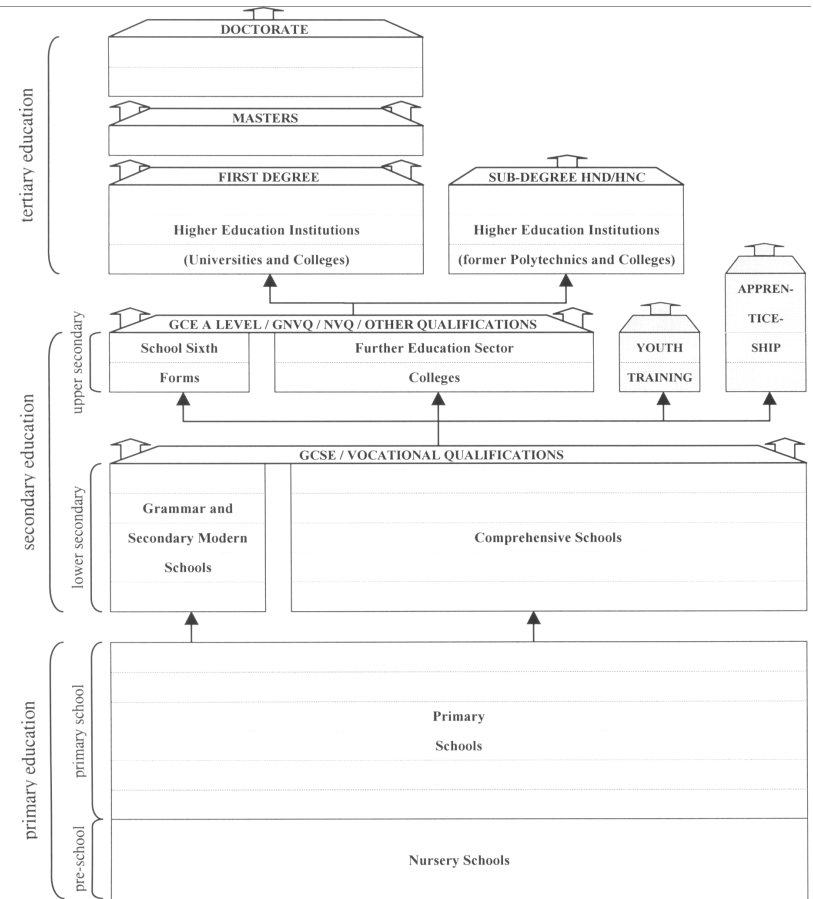
1. Primary education which normally lasts 6 years including two stages: an „infant” stage (5 to 7 years of age) and a „junior stage” (8 to 11/12).
2. Lower-secondary education consists of a 5-year course generally in comprehensive and coeducational secondary schools. Education is compulsory from age 5 to 16. Upper-secondary education or post 16-education takes place in secondary schools (known as „sixth forms”) as well as in special institutions („sixth form colleges”) and colleges of further education.
3. Higher education comprises universities and polytechnics. In 1992 most of the institutions of higher education were upgraded to full university status by introducing a unified funding system.


Since the mid 1970s, the comprehensive schools were more or less fully implemented. After six years of primary education the majority of secondary pupils (over 90 %) attend comprehensive schools that are open for all pupils regardless of their ability. A few areas also have *grammar schools* that provide a mainly academic education for pupils selected by examination from the age of 11 to 18 or 19 and *modern secondary schools* that provide a

¹⁵ The private or independent school sector with its long-standing tradition reflects an institutional peculiarity of the school system in England and Wales that, largely untouched by the various reform acts, did not change its importance over time. In 1970, about 6% of all pupils attended private schools, in 1991/2 the private school sector provided education for 6.6% of the total school population in UK (7.4% in England, 4.2% in Scotland, 2.5% Wales, and 0.3% in Northern Ireland (Educational Statistics for the UK 1993).

general education. Both types of secondary schools have been largely reduced in numbers, *technical schools* effectively disappeared at the secondary level (e.g. Heath/Cheung 1998).

Figure 3: The Educational System in England and Wales



GCSE: General Certificate of Secondary Education; GCE A Level General Certificate of Education Advanced Level
 GNVQ: General National Vocational Qualification; NVQ: National Vocational Qualification; HND: Higher National Diploma; HNC: Higher National Certificate;  Vocational Training

With the *Education Reform Act 1988*,¹⁶ for the first time, a *National Curriculum* for all pupils of compulsory-school age was introduced in England and Wales. Generally, at the end of each school year in secondary schools, pupils progress to the next class „unless, in exceptional circumstances, the parents and the school decide that a child would educationally benefit from an extra year in a particular class” (EURYDICE/CEDEFOP 1995: 14). The final two years of secondary education lead to the national examination that is taken at about the age of 16: the *General Certificate of Secondary Education (GCSE)* which was introduced in 1988 and replaced the *Certificate of Secondary Education (CSE)*, introduced in 1965, and the *General Certificate of Education (GCE) O level*, introduced in 1951. Both former degrees were achieved after five-year secondary school attendance at the age of 15 or 16. The CSE, however, had a lower standard than the O-level. The introduction of the GCSE aimed at the creation of a single examination system in England, Wales and Northern Ireland for the pupils aged 16 and over.¹⁷

At the end of lower-secondary school pupils have the option 1.) to continue in upper-secondary school to follow academic courses, 2.) to attend vocational courses in a further education or tertiary college, 3.) to enter the main initial vocational-training programme (Youth Training YT) or 4.) to enter the labour market.

Access to post-compulsory education in upper-secondary schools does not officially require successful GCSE examinations. Instead, the individual school decides admission policy that is usually based on the pupils' past educational and personal record. The same holds true for admission to a further education institution that has no formal entry requirements with the exception of a few courses. After two years of (academic) schooling at the upper-secondary level pupils take the *General Certificate of Education (GCE) A level* examination, a national examination. The A Level certificate was introduced in 1951 and has remained unchanged over the last 40 years. It is the standard entry qualification for higher education (aiming at the academically most able pupils) that is taken in two to four subjects (usually three). Since September 1987, with the first examinations in Sum-

¹⁶ The *Education Reform Act 1988* (e.g. Gordon/Aldrich/Dean 1991; Ranson 1990) marks a turn in central aspects of the educational policy: the power of the Local Educational Authorities (LEA) was significantly reduced and shifted towards the central government on the one hand and towards the individual schools and colleges on the other. As a major and definitely new feature, schools - with the consent of a majority of the parents - have now the opportunity 'to opt' out of LEAs' finance and control. In this way, the schools attain the newly created status of 'grant-maintained' schools (Mackinnon/Statham 1995).

¹⁷ The *General Certificate of Secondary Education (GCSE)* includes the subjects taken (there are no regulations governing the number of subjects) and the grades achieved. The grading is on a seven-point scale (Grades A-G) of which Grade G is the minimum standard.

mer 1989, a new degree - the *AS level (Advanced Supplementary)* has been available which can be achieved alongside A levels. Involving about half the work of an A level, the AS level intends to cover a wider range of individually chosen subjects and to broaden the curriculum (Mackinnon/Statham 1995).

Traditionally, vocational education is provided in further education institutions, but following the Education Acts, vocational courses are increasingly made available in schools. In the mid 70s, a Great Educational Debate was launched pointing out the failure of the vocational education and training (VET) system. It was criticised for not producing an adequate number of highly skilled individuals compared to international competitors and compared to the requirements of economic performance. At that time, about 50% of the 16-year-olds entered employment without any significant vocational training. The training which was offered was lacking an organised structure or even regulation, it was predominantly training-on-the-job. The apprenticeship system which grew out of the Guild system of the middle ages had its peak in the mid 1960s and then steadily declined. In fact, the apprenticeship system - a traditional craft apprenticeship system - was mostly "seen as a condition of employment rather than as a system of effective training in skills" (Aldcroft 1992: 55). Only about 200 firms provided high quality training, whereas the majority of individuals achieved the skilled status automatically upon the completion of the five years of tenure, often characterised as time-serving.¹⁸

After the Conservatives won power in 1979, the Thatcher Government introduced several vocational education programmes, e.g. the *Technical and Vocational Education Initiative (TVEI)* (British Vocational Qualifications 1995). The most important programme was the *YTS (Youth Training Scheme)* in 1981 which was extended to a two-year programme in 1986 (and renamed in 1990 as Youth Training YT).

By the late 80s, there existed about 6000 different pre-vocational and vocational qualifications, awarded by different qualifying bodies competing in overlapping occupational areas. The standards achieved by young people often were to be questioned.¹⁹ In order to rationalise and to "sort out the qualifications jungle" (British Vocational Qualifications

¹⁸ The situation of an unorganised apprenticeship system is best described by the phrase 'sitting next to Nellie'.

¹⁹ The government introduced a *Certificate of PreVocational Education (CPVE)* in 1985 aiming at uncommitted school leavers after compulsory schooling in offering a vocationally oriented course. This course allowed not only to sample different occupational areas but also to build up basic skills in numeracy, literacy etc.

1995: 19) the *National Council of Vocational Qualifications* (NCVQ) was established in 1986. The main tasks were the development of a unified framework of national qualifications based on national standards, the development of quality assurance mechanisms and the development of National Vocational Qualifications (NVQ) in co-operation with the most important awarding bodies such as The Business and Technician Education Council (BTEC) and The City and Guilds of London Institute (CGLI).²⁰

The established framework of National Vocational Qualifications includes five levels of qualifications²¹ reflecting the level of competence and achieved skills. For example the BTEC National Certificate and Diploma (ONC/OND) are equivalent to level 3, BTEC Higher National Certificate and Diploma (HNC/HND) to level 4 and City and Guilds and other craft levels would equate to level 2. The NVQ are usually directed at specific occupations, and assessment of actual performance takes place in a realistic work environment, normally the workplace itself. The concept is based on modules of qualifications, the so-called units of competence. Elements of competence are packaged into units which are then packaged into NVQ. In a modular system a candidate collects the units over time that are necessary for the achievement of the award which is then recognised by the award of a certificate (British Vocational Qualifications 1995).

By 1991 the Government introduced the *General National Vocational Qualifications* (GNVQ) as a kind of 'bridge' between the traditional 'academic' qualifications like GCSE and A level on the one hand and the NVQ framework on the other establishing a triple track of educational provision. In contrast to the NVQ, the GNVQs are more broadly based education awards than specific in competence of a particular occupation. The similarities between NVQs and GNVQs concern the modular concept of units which are credited separately and which can be accumulated to gain the full qualification (see further British Vocational Qualifications 1995). An overview about equivalent academic and vocational qualifications at three stages is given in table 2.

²⁰ BTEC provides vocational courses for jobs in industry, administration and commerce in a wide range of subjects such as business studies, management and engineering and design at three different levels: First, National (the Ordinary National Certificate or Diploma ONC/OND), and Higher National (HNC/HND). CGLI – rich in tradition – offers training in most of the craft industries. There are over 1100 examinations at various levels (mostly at three different levels) in technical and vocational subjects ranging from agriculture to retail distribution as well as from construction to hotel and catering studies. RSA (The Royal Society of Arts) is awarding qualifications in all aspects of business studies for office and commercial work, information technology and languages at three stages.

Table 2: Comparison of academic and vocational qualifications

<i>Foundation Level:</i>		
4 GCSEs at grades D to G	1 GNVQ at Foundation level	1 NVQ at Level 1
<i>Intermediate Level:</i>		
5 GCSEs at grades A to C	1 GNVQ at Intermediate level	1 NVQ at Level 2
<i>Advanced Level:</i>		
2 GCE A levels or 4 AS levels or 1 A level plus 2 AS levels	1 GNVQ at Advanced level	1 NVQ at Level 3

Even though there are serious concerns about quality control and the assessment and certification methods used in NVQ and GNVQ, it is the first time that there is a VET system based on national standards and local delivery. As official national training targets, the Government has formulated that—by 1997—at least 80% of each age group should attain NVQ Level 2, or its academic equivalent, and by the year 2000, at least half of the age group should attain NVQ Level 3 or its academic equivalent, as a basis for further progression (British Vocational Qualifications 1995).

In the 1970s and 1980s the setting-up of new universities, polytechnics and additional colleges of education for the training of teachers (many of which were later diversified into colleges of higher education) was accompanied by a massive expansion in higher education. The main providers of higher education are the universities and other higher education institutions including for example agricultural, art and theological colleges. Following the Further and Higher Education Act 1992, the former 'binary structure' of higher education with universities divided from polytechnics and other colleges of higher education was dissolved by introducing a unified funding system in which all institutions have to compete. The polytechnics and colleges of higher education became degree-awarding bodies in their own right with the opportunity to take the title of university and to obtain the status of 'free-standing statutory corporations' under the direction of boards of governors, independent of LEAs (Mackinnon/Statham 1995; Maclure 1992; Williams 1990; Singh 1995; Russell 1990). Nevertheless, structural differences between the «old» (in particular the prestigious colleges in Oxford and Cambridge) and the «new» universities remained. In general, access to universities requires at least three passes in *General Certificate of Secondary Education (GCSE)* examinations at Grade C or above and two passes at *General Certificate of Education (GCE) A level* (or the equivalent AS passes) as

21 The levels are: *Level 1* Foundation; *Level 2* Basic craft, *Level 3* Technician/Advanced craft/Supervisor; *Level 4* Higher Technician/Junior Management, and *Level 5* Professional Management.

the minimum; practically (in competition for places), the level is above this minimum. In the course of the implementation of the NVQ framework, vocational qualifications are becoming more generally acceptable as entry certificates for specific courses and institutions. First degree courses in higher education that usually lasts for three years lead to the title of Bachelor, mostly the Bachelor of Arts (BA) and Bachelor of Science (BSc). Regarding postgraduate degrees, there exist three basic levels, the master's degrees, the doctorates and the 'higher doctorates'. The 'landscape' of higher education is to be completed by the Open University that provides courses through distance learning.

The educational system in Scotland

In Scotland, education is compulsory from the age of 5 to the age of 16. Pupils enter primary school at the age of 5 and follow a 7 year course. Transition to secondary education normally takes place at age 12 (in England and Wales normally at 11). Compared to England the structure of secondary schools in Scotland (and also in Wales) is much more unified.²² Practically all state schools are comprehensive schools offering all types of courses to pupils of all abilities and aptitudes. The majority of these schools (about 90%) provide education covering four years of compulsory (until the age of 16) and two years of optional secondary education. At the age of 16 pupils who continue in education have the possibility to choose between full-time education in schools or in Colleges of Further Education. The latter provide more exclusively vocational courses. The division of functions between schools and colleges is much clearer in Scotland than in England. Furthermore, concerning higher education, colleges of Further Education play a larger role than in England and courses leading to Honours degrees take four years of studying, one year longer than in England (Howieson et al. 1997; EURYDICE/CEDEFOP 1995; Raffe et al. 1997; Mackinnon/Statham 1995).

At the age of 16 (at the end of compulsory schooling) all pupils take the exam leading to *Scottish Certificate of Education (SCE) at Standard Grade*. The Standard grade was introduced in 1984 with the first examinations in 1986. It replaced the *SCE O grade* which was the Scottish equivalent of the GCE O level in England and Wales. After compulsory education, pupils following a more academic route take one-year courses leading

²² The administration and responsibilities for education and training are divided between the Department for Education and Employment (DfEE) of the UK government and the education Department of the Scottish Office (SOED). Although the DfEE is the 'lead-department', the SOED is responsible for functions such as determining national aims and standards, formulating national policy and guidelines in the area of curriculum and assessment (EURYDICE/CEDEFOP 1995; Raffe et al. 1997).

to the *Scottish Certificate of Education at Higher Grade* that gives entry to higher education. The SCE Higher grade is the Scottish equivalent to the British A level, but the examinations are usually taken one year rather than two years after O grade and they are based on four, normally five subjects rather than two or three as in England. An increasing number of pupils now spend an additional year at school following SCE Higher Grades to take the *Certificate of Sixth Year Studies* (CSYS) and further Higher Grade subjects.²³

Vocational training and the changes during the last two decades are rather similar in Scotland and England and Wales due to the common UK labour market and the organisation of the key institutions of the economy at the UK level. The key features of the *Scottish Vocational Qualifications* (SVQ) are despite their Scottish title rather the same in content and structure as the National Vocational Qualifications (NVQ), that is also true for the *General Scottish Vocational Qualifications* (GSVQ) and the General National Vocational Qualifications (GNVQ) (CEDEFOP 1993). The differences between GSVQ and GNVQ concern mainly the role of the awarding and accrediting bodies and the flexibility in the Scottish system.²⁴

As an alternative to Higher Grade or in addition to Higher Grades, pupils have the possibility to combine academic and vocational courses in taking one or more modules from the Scottish National Certificate (NC). Modules can sometimes build a bridge to Higher Grades in the same subject. In Scotland there has been much greater use of the flexibility provided by a modular system and it is much more common for individual National Certificate modules to be taken in conjunction with other courses (for example, academic qualifications) or by adults updating or extending their skills (CEDEFOP 1993).

²³ Currently, the Scottish secondary education is undergoing a reform (as a response to the Report of the Howie Committee) with modifications for the Higher Grade examinations. Courses will be modular in structure with increased teaching hours for each subject. The CSYS will be replaced by Advanced Higher courses taking over two years of study. SCE Higher Grade and Advanced Higher will be developed as units and courses at the top levels. The new system (for further information see e.g. Howieson et al. 1997) is to be introduced in 1998.

²⁴ In Scotland, the content of GSVQs is defined by *Scottish Vocational Education Council* (SCOTVEC) and is based on modules from the existing *National Certificate Catalogue* (NC) Within the National Certificate, any number of modules from the 2.700 available may be taken in any combination, although certain groupings of modules are recognised for specific purposes (CEDEFOP 1993). In Scotland, the same body (SCOTVEC) combines the function of an awarding body and an accrediting body in contrast to England with a variety of awarding bodies and private organisations.

As Raffé and colleagues (1997) and Howieson and colleagues (1997) have argued, in Scotland the main characteristic of the system is the link between academic and vocational education whereas the system in England seems to be a tracked one. The reforms still in progress may lead to the assumption that the differences may remain even though both systems are moving: „England, especially under the Labour government, is likely to move from a tracked to a linked system, while Scotland is planning to move from a linked to a unified system” (Raffé et al 1997: 12).

The educational system in Northern Ireland

The educational system in Northern Ireland has more in common with the British system than the Scottish. The responsibility for the administration of the education service in Northern Ireland rests with the Department of Education for Northern Ireland (DENI). The main concerns of the DENI are the formulation of national policies for education and the maintenance of consistency in national standards.

The major differences between Northern Ireland and England lie in the religious and political division on the one hand and the larger selectivity in the secondary school sector on the other. There are two main types of secondary schooling, which pupils enter at the age of 11 (as in England and Wales): the grammar schools and the secondary schools. Grammar schools provide a range of courses for pupils between the age of 11 and 18 whereas secondary schools cover only the age group of 11-16 in a similar range of courses. Some secondary schools offer opportunities at the upper-secondary level (so called ‘post-16’ education).

Referring to post-compulsory education similar types of academic and vocational courses are offered in Northern Ireland as in England and Wales. The same is true for higher education provision, but there is only a small number of institutes and universities for higher education. So, Northern Ireland is „a net exporter of students“ (Raffé et al. 1997: 6).

As far as vocational training is concerned Northern Ireland does not differ from England in general and the development regarding NVQ and GNVQ are identical. There are only two exceptions: First, the Youth Training Programme (YTP) in Northern Ireland is not to the same extent employer-led as in England and Wales. Instead, YTP is organised by Training Centres, Community Workshops and further education colleges in co-operation with employers who provide work-training or work-experience places. In addition, training providers must have Recognised Training Organisation (RTO) status. Second, there exists a specific Jobskill-Programme that will replace the YTP and aims at training opportunities for all entrants to the labour market. Within this single training programme

trainees should obtain qualification at National Qualification Level (NVQ) Level 3 or equivalent in a flexible way (EURYDICE/CEDEFOP 1995).

3. Concluding remarks

The CASMIN project has developed a sophisticated educational classification whose value has been demonstrated in many studies in comparative social-mobility and labour-market research. The original CASMIN coding schema as presented by König/Lüttinger/Müller (1988), however, does not capture the changes in education systems following the educational reforms of the post-World War II period. In this paper, we have updated the CASMIN classification according to recent developments. So far, we have concentrated on three countries where the educational reforms were accompanied by partly substantial institutional changes: France, West-Germany, the United Kingdom.

Despite all commonality in the underlying motives of educational reform and expansion in post-war societies, distinctive national strategies were pursued by which secondary and higher education was opened to a much broader public and 'modernisation' of the vocational-qualification system was realised. As a consequence, we witness today a high degree of institutional diversity within as well as between national education and training systems. This institutional diversity makes it a difficult task to construct education categories that are indeed „comparable” and can be claimed functional equivalents across countries and, at the same time, grasp nationally relevant differentiations in educational achievement. The latter is only partly accomplished by the CASMIN classification which—at specific levels of education—implies a lack of precision for certain but not all countries. In other words, from the national perspective, the CASMIN schema in many respects embraces quite heterogeneous categories. In countries, as France for example, with a far-reaching expansion of higher education it makes sense to differentiate even stronger than the CASMIN classification does between different levels or institutions of higher education, or—in countries where expansion of upper-secondary education has been realised through a process of institutional differentiation—to distinguish between different maturity certificates. In some countries, the institutional embeddedness of vocational training is an important signal of one's educational performance. It is then fruitful to distinguish between vocational qualification achieved in full-time schooling as compared to qualifications achieved in an apprenticeship framework. It is not the task of a comparative measurement instrument to fully account for within-country diversity in educational achievement. Given the choice of countries included in the analyses and the specific theoretical concerns, the idea of a comparative measurement is to apply the most precise educational classification that can still be considered as a 'common denominator'

to the respective countries involved. However, for understanding the effects pertaining to single CASMIN education categories and specificities of cross-national variation that the classification reveals, it is often useful to additionally apply a more refined classification to single countries that better accounts for the institutional diversity within the respective educational system. This will also give important empirical clues on the validity of grouping together different educational credentials within one category.

Finally, updating the CASMIN schema also implies refinement of the classification and, for countries as France, more substantial modification of the original coding scheme. Refinement of the CASMIN schema profits from the fact that at each successive level it is open to more detailed classification without breaking up the underlying logic of the schema (see table 3 for the refined CASMIN-schema). The CASMIN schema distinguishes between vocational and general certification at the compulsory (1a,b,c) and intermediate level of education (2a,2b). In most European countries, modern educational systems also confer general and vocational certification at the *maturity level*. Since general and vocational maturity certificates often substantially differ in labour market value, we propose to split the 2c-category of the original CASMIN classification into a 2c-general and a 2c-vocational category. It should be noted, however, that the 2c-vocational category highly differs between countries. In Germany, for example, it includes the general maturity certificate (*Abitur*) plus two years of vocational education. In France, by contrast, it refers to a vocational or technological maturity certificate (*Baccalauréat Professionnel*, *Baccalauréat Technologique*) which is not an additional qualification to the general maturity qualification, but a vocationally-oriented maturity certificate, in many circumstances less valued than the *Baccalauréat général*.

In addition, for some European societies following the educational reforms and expansion, it might be senseful to split up the CASMIN 3a level in order to distinguish between vocationally or technically-oriented degrees on the one side (3a-vocational) and general, academically-oriented degrees as conferred by the universities for example on the other (3a-general). Such a differentiation makes sense for the UK and to some degree also for France. In France, for example, one would separate on the level of Bac+2 (two-year formation following the *Bac*) the DEUG (diploma of general curriculum at the universities) from the DUT and BTS. The latter refer to so-called 'technological' qualifications to be

achieved in the framework of full-time schooling (upper-secondary schools or technical colleges) or—since the mid 80s—of apprenticeship training.²⁵

For France, a more substantial modification of the CASMIN coding scheme seems appropriate. This modification to some extent breaks up the underlying logic of the schema, namely its purely credential orientation. In the modern secondary school, pupils are not required to take the intermediate general examination (the *Brevet de Collège*) for continuing in upper-secondary or vocational education. In older cohorts, the same holds true for the CEP (*Certificat d'Etudes Primaires*) which was not a precondition for continuing in lower-secondary or vocational education. At the same time, France has a traditionally high rate of failure at the national *Baccalauréat* exam and a relatively high proportion of pupils who follow vocational training up to three years without completion of the final CAP or BEP examination. Consequently, a number of French pupils who tried to pass but failed the highly selective *Baccalauréat* or quit vocational tracks before the final examination have not achieved any credential at the end. Within the CASMIN schema, due to its credential focus, they are classified in the lowest achievement category ('1a'). On the labour market, though, these groups of school-leavers are not treated the same as those who left school at much earlier stages. In summary, among school-leavers with the same length and type of education, it makes indeed a difference whether one has achieved the final qualifying credential or not, but among school-leavers who have not achieved a diploma, the educational biography, i.e. the level of education reached, also matters in France. The latter aspect has not been taken into account by the CASMIN researchers. Given French national particularities in educational streaming and in the use made of education in employment decisions it would be more appropriate to differentiate school-leavers according to their level of education and—at the same level—according to achievement versus non-achievement of the final diploma. For construction of the CASMIN schema, we are facing a dilemma. Since the purpose of cross-national comparison does not allow the French educational classification to be more detailed than the others, one has to decide upon which criteria, diploma achieved or educational grade/level reached, to give priority. Selecting one criteria to the detriment of the other, however,

²⁵ Separating vocationally-oriented qualifications on the level of Bac+2 from general certificates also allows to 'control' for a cross-national bias that is implicit in the conventional classification grid of the CASMIN schema due to cross-national variations in the organization of education systems and official education classifications: The 2c-vocational category in Germany, grasping the maturity certificate plus two years of vocational training, reveals much similarity to the two-year technological formations following the Bac (to be completed in the framework of full-time schooling or apprenticeship training) that the French education ministry classifies as lower-tertiary level qualifications.

means neglecting important facets of the French educational system. The question, then, is which facet is thought to be the more important for differentiating among school-leavers in light of the two selectivity aspects that the CASMIN schema claims to identify. In contrast to the original CASMIN coding, we propose to refer to the grade/level of secondary education reached rather than to the diploma, as far as achievement in general education below the 'Baccalauréat' is concerned. As far as demarcation of vocationally-qualified and vocationally-unqualified school-leavers is concerned, we suggest in principle to follow the logic of the original CASMIN coding, namely to take achievement versus non-achievement of the vocational diploma as the major criterion. Drop-outs of vocational qualification are then classified according to their level of general education. There is one exception to this: in contrast to the CASMIN coding, we propose a more „moderate” treatment of the early drop-outs of general education and vocational training, i.e. those having left the general school-system before completion of 5th grade or the CEP followed by a quite long period of vocational training which is not formally certified in the end. Since they do have „some” training and work-related human capital, they are not associated with the CASMIN „underachievers” (1a) (see Appendix A2 for the „new” French classification).²⁶

Decreasing numbers of individuals in the lowest CASMIN category, in most analyses used as the reference category, hint to another problem which opens the floor for a more general discussion. One problem of the „old” CASMIN coding schema, if one investigates younger birth-cohorts, is that the number of individuals with no more than *Hauptschule* in Germany or drop-outs of lower-secondary schooling in France for example steadily decreases. This development suggests construction of a „relational” scheme across history and countries. Construction of a „relational” schema takes account of the idea of „functional equivalence” of education categories and thereby of historical and cross-national variation in the distri-

²⁶ The question that is left open is how to assign levels of general education in France precisely to the CASMIN categories. We suggest to equate the elementary and lower-secondary diplomas, CEP and BEPC/BC, making up „1b” and „2b” in the „old” schema, with the level at which they are/were to be achieved in secondary school, 5th and 3rd grade, which mark central selection points in modern secondary education. Compared to the „old” CASMIN coding, a number of school-leavers formerly classified as „1a” are then transferred to „1b” or „2b”, some of those in „1b” to „2b”. Since vocationally-qualified school-leavers assigned to „1c” in the „old” schema are also reclassified according to their underlying level of general education, some of them are moved to „2a”. An additional number of the mentioned drop-outs earlier found in „1a” will then, if one follows the above described „moderate” classification strategy, be assigned to „1b”. As a consequence of these changes in assignment, the qualification profile of French school-leavers is up-graded; a smaller percentage than in the „old” classification is found in the so-called „social minimum” categories.

bution of education. It starts from what the CASMIN schema *conceptually* claims. Its lowest categories, 1a and 1b, are conceived of as the "social minimum" of education in a given society' (König/Lüttinger/Müller 1988: 55), category „2b" as „intermediate" educational achievement etc. Educational expansion not only changed substantially what is institutionalised or socially perceived as the 'social minimum' of education in various European societies. In addition, educational expansion has taken quite different paths in different societies leading to a high degree of diversity among European societies in what actually corresponds to the 'social minimum' of education. Given that the CASMIN schema claims 'functionally equivalent' categories across countries as well as time (König/Lüttinger/Müller 1988: 54), it might be appropriate to reconsider for each country and different historical periods/cohorts which education level to define as the minimal educational goal expected, which one to define as 'intermediate' etc.²⁷

However, construction of a 'relational' education schema has a substantial disadvantage: Since there is no standardized/fixed level of comparison across time, it does not allow to identify historical changes in the returns to achievement in concrete educational tracks, the *Mittlere Reife* in Germany or completion of the first cycle of secondary schooling in France, for example, which is in fact the benefit of the CASMIN schema compared to other educational scales as „years of schooling". In other words, if the effects of educational expansion on school-leavers qualification profile are built in the schema, it is no longer possible to empirically investigate the effects of educational expansion, i.e. changing distributions of education among cohorts of school-leavers, on the returns to specific educational credentials. A relational schema would only allow to describe changes in returns to education in terms of the more abstract conceptual background of the CASMIN categories, namely in terms of the returns to the „social minimum" of education for example, whatever educational credential/level this exactly is in different cohorts. Therefore we propose not to implement a relational education schema but to decide depending on the choice of countries and cohorts involved in the specific analysis at hand how to collapse education categories.

²⁷ In the case of younger cohorts in France, one would then equate completion of the first cycle of secondary schooling, 3rd grade, not any more with CASMIN category „2b" as proposed above, but with „1b" as the „social minimum", and, accordingly, 2nd grade to *Terminale* in upper-secondary schooling without completion of the *Baccalauréat* as CASMIN 2b. As the historical cut, by which one would change the definition, cohorts born after 1965 might be suggested because they have fully benefited from the introduction of the *Collège Unique* by minister Haby.

Table 3: The new CASMIN educational classification

Qualification	Description
1a	Inadequately completed general education
1b	General elementary education
1c	Basic vocational qualification or general elementary education and vocational qualification
2a	Intermediate vocational qualification or intermediate general qualification and vocational qualification
2b	Intermediate general qualification
2c_gen	General maturity certificate
2c_voc	Vocational maturity certificate/General maturity certificate and vocational qualification
3a*	Lower tertiary education
3a_gen	Lower tertiary education – general diplomas
3b_voc	Lower tertiary education – diplomas with vocational emphasis
3b*	Higher tertiary education
3b_low	Higher tertiary education – lower level
3b_high	Higher tertiary education – higher level

* For some countries (e.g. France), categories 3a and 3b may be split up.

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Appendix

Documentation of the coding for the CASMIN educational classification

Table A1: France: logic of the „old” classification - Enquête Emploi 1990s

1a	<i>Inadequately completed general education</i> sans diplôme; CEP (Certificat d'Education Professionnelle).
1b	<i>General elementary education</i> CEP (Certificat d'Etudes Primaires); DFEO (Diplôme de Fin d'Etudes Obligatoires).
1c	<i>Basic vocational qualification/general elementary education and vocational qualification</i> CAP(A) (Certificat d'Aptitude Professionnelle (Agricole)) without completion of intermediate general qualification, with or without prior achievement of CEP/DFEO, within full-time schooling or apprenticeship; EFFA (Examen de Fin d'Apprentissage Artisanal); agricultural diplomas (BAA, BPA); other diplomas at level CAP as social and health-professions diplomas without prior achievement of intermediate general or upper-secondary qualification as specified in 2b and 2c.
2a	<i>Intermediate vocational qualification/Intermediate general qualification and vocational qualification</i> BP (Brevet Professionnel); Diplôme de Moniteur-Educateur; Brevet des ENP (Ecole Nationale Professionnelle) or Lycées Techniques d'Etat; BSEC (Brevet Supérieur d'Enseignement Commercial); Capacité en Droit; Brevet de Maîtrise; Diplôme de l'AFPA du 2ème degré; BEA/C/S... (Brevet d'Enseignement Agricole/Commercial/Social...); Brevet d'Agent Technique Agricole; BEP(A) (Brevet d'Etudes Professionnelle (Agricole)), CAP, social or agricultural diplomas (as specified in 1c) following intermediate general qualification (see 2b).
2b	<i>Intermediate general qualification</i> BEPC (Brevet d'Etudes du Premier Cycle); Brevet des collèges; CFES (Certificat de Fin d'Etudes Secondaires); BE (Brevet Élémentaire); BEPS (Brevet d'Enseignement Primaire Supérieur).
2c_gen	<i>General maturity certificate</i> Baccalauréat général series A to E/L, S, ES; BS (Brevet Supérieur).
2c_voc	<i>Vocational maturity certificate/General maturity certificate and vocational qualification</i> Baccalauréat de Technicien series F to H; Baccalauréat Technologique; Baccalauréat Professionnel; BT(A) (Brevet de Technicien (Agricole)).
3a	<i>Lower tertiary education</i> Diplômes universitaires du premier cycle (propédeutique, DUEL, DUES, DEUG, PCEM); DUT (Diplôme Universitaire de Technologie); BTS (Brevet de Technicien Supérieur); Diplôme d'école juridique, commerciale, arts appliqués (also including premier cycle des écoles de notariat, secrétariat de direction, écoles ou instituts de technicien supérieur); various social and health-professions diplomas (nursing, social work etc.); Certificat d'Aptitude Pédagogique; CFEN (Certificat de Fin d'Etudes Normales) including Diplôme de Maître d'Education Physique, other diplomas at French level „bac+2”, i.e. level III according to the official education classification grid (see section 3.1).
3b	<i>Higher tertiary education</i> Diplômes universitaires de deuxième cycle (e.g. Licence, Maîtrise), Diplômes universitaires de troisième cycle (e.g. DES, DEA (Diplôme d'Etudes Approfondies), Doctorat (including Doctorat en médecine); Diplôme de chirurgien-dentiste; CAPES; CAPET; Agrégation; Diplôme Grande Ecole, Ecole d'ingénieur/de commerce etc.

A2: France: logic of the „new” classification - Enquête Emploi 1990s

1a	<i>Inadequately completed general education</i> sans diplôme and drop-out of secondary school before completion of 5 ^{ème} with or without vocational training (but less than two years of vocational training).
1b	<i>General elementary education</i> Completion of 5 ^{ème} secondaire; CEP (Certificat d'Etudes Primaires); DFEO (Diplôme de Fin d'Etudes Obligatoires); CEP (Certificat d'Education Professionnelle); last year CAP (two to three years of vocational training) without completion of vocational diploma and without prior achievement of intermediate general qualification as specified in 2b.
1c	<i>Basic vocational qualification/general elementary education and vocational qualification</i> CAP(A) (Certificat d'Aptitude Professionnelle (Agricole)) without completion of intermediate general qualification, with or without prior achievement of CEP/DFEO, within full-time schooling or apprenticeship; EFFA (Examen de Fin d'Apprentissage Artisanal); agricultural diplomas (BAA, BPA); other diplomas at level CAP as social and health-professions diplomas without prior achievement of intermediate general or upper secondary qualification as specified in 2b and 2c.
2a	<i>Intermediate vocational qualification/Intermediate general qualification and vocational qualification</i> BP (Brevet Professionnel); Diplôme de Moniteur-Educateur; Brevet des ENP (Ecole Nationale Professionnelle) or Lycées Techniques d'Etat; BSEC (Brevet Supérieur d'Enseignement Commercial); Capacité en Droit; Brevet de Maîtrise; Diplôme de l'AFPA du 2ème degré; BEA/C/S... (Brevet d'Enseignement Agricole/Commercial/Social...); Brevet d'Agent Technique Agricole; BEP(A) (Brevet d'Etudes Professionnelle (Agricole)), CAP, social or agricultural diplomas (as specified in 1c) following intermediate general qualification (see 2b).
2b	<i>Intermediate general qualification</i> Completion of 3 ^{ème} secondaire générale; BEPC (Brevet d'Etudes du Premier Cycle); Brevet des collèges; CFES (Certificat de Fin d'Etudes Secondaires); BE (Brevet Elémentaire); BEPS (Brevet d'Enseignement Primaire Supérieur); completion of 2 ^{ème} et 1 ^{ère} without achievement of the maturity certificate as specified in 2c.
2c_gen	<i>General maturity certificate</i> Baccalauréat général series A to E/L, S, ES; BS (Brevet Supérieur)
2c_voc	<i>Vocational maturity certificate/General maturity certificate and vocational qualification</i> Baccalauréat de Technicien series F to H; Baccalauréat Technologique; Baccalauréat Professionnel; BT(A) (Brevet de Technicien (Agricole)).
3a_gen	<i>Lower tertiary education- general diplomas</i> Diplômes universitaires du premier cycle (e.g. propédeutique, DUEL, DUES, DEUG, PCEM (Premier Cycle des Etudes Médicales)).
3a_voc	<i>Lower tertiary education – diplomas with vocational emphasis</i> DUT (Diplôme Universitaire de Technologie); BTS (Brevet de Technicien Supérieur); Diplôme d'école juridique, commerciale, arts appliqués (also including premier cycle des écoles de notariat, secrétariat de direction, écoles or instituts de technicien supérieur); social and health-professions diplomas (nursing, social work etc.); Certificat d'Aptitude Pédagogique; CFEN (Certificat de Fin d'Etudes Normales) including Diplôme de Maître d'Education Physique, other diplomas at French level „bac+2”, i.e. level III according to the official education classification grid with a vocational focus (see section 3.1).
3b_low	<i>Higher tertiary education (lower level)</i> Diplômes universitaires de deuxième cycle (e.g. Licence, Maîtrise).
3b_high	<i>Higher tertiary education (higher level)</i>

Diplômes universitaires de troisième cycle (e.g. DES, DEA (Diplôme d'Etudes Approfondies)), Doctorat (including Doctorat en médecine); Diplôme de chirurgien-dentiste; CAPES; CAPET; Agrégation; Diplôme Grande Ecole, Ecole d'ingénieur/de commerce etc.

Table A3: West-Germany, Mikrozensus 1990s

1a	<i>Inadequately completed general education</i> ohne Abschluß, berufliches Praktikum
1b	<i>General elementary education</i> Haupt-/Volksschulabschluß
1c	<i>Basic vocational qualification/general elementary education and vocational qualification</i> Haupt-/Volksschulabschluß mit Abschluß einer Lehr-/Anlernausbildung oder Meister-/Technikerausbildung
2a	<i>Intermediate vocational qualification/Intermediate general qualification and vocational qualification</i> Realschulabschluß (Mittlere Reife) mit Abschluß einer Lehr-/Anlernausbildung oder Meister-/Technikerausbildung
2b	<i>Intermediate general qualification</i> Realschulabschluß (Mittlere Reife)
2c_gen	<i>General maturity certificate</i> Fachhochschulreife, Hochschulreife (Abitur)
2c_voc	<i>Vocational maturity certificate/General maturity certificate and vocational qualification</i> Fachhochschulreife, Hochschulreife (Abitur) mit Abschluß einer Lehr-/Anlernausbildung oder Meister-/Technikerausbildung
3a	<i>Lower tertiary education</i> Fachhochschule, Ingenieurschule
3b	<i>Higher tertiary education</i> Hochschule

Table A4: United Kingdom, Qualification LFS 1990s

1a	<i>Inadequately completed general elementary education</i> None of these
1b	<i>General elementary education</i> CSE,GCSE,SCE not yet mentioned
1c	<i>Basic vocational qualification/general elementary education and vocational qualification</i> BTEC,BEC,SCOTBEC,TEC or SCOTEC-SCOTVEC, First certificate or General certificate, YT Certificate (YTP in Northern Ireland), SCOTVEC National Certificate modules, RSA other qualification, City & Guilds other qualification , Any other professional-vocational qualification, GNVQ/GSVQ foundation; NVQ/SVQ Level 1
2a	<i>Intermediate vocational qualification/Intermediate general qualification and vocational qualification</i> City and Guilds advanced craft, RSA diploma, City & Guilds craft; BTEC, BEC, SCOTBEC TEC or SCOTEC-SCOTVEC; First diploma or General diploma; GNVQ/GSVQ intermediate; NVQ/SVQ Level 2 (basic etc.)
2b	<i>Intermediate general qualifications</i> O-level; GCSE grades A,B,C; SCE Standard; grades 1,2,3; SCE Ordinary grades A,B,C; CSE; grade 1 or equivalent CSE,GCSE,SCE
2c_gen	<i>General maturity certificate</i> A-level or equivalent; Scottish Certificate of 6 th year Studies (Scottish CSYS) or equivalent; SCE (Higher) or equivalent; A-S level; Certificate of 6th Year Studies (CSYS) or equivalent
2c_voc	<i>Vocational maturity certificate/General maturity certificate and vocational qualification</i> RSA Advanced diploma/certificate; BTEC,BEC,SCOTBEC,TEC or SCOTEC-SCOTVEC National-ONC-OND; GNVQ/GSVQ advanced; NVQ/SVQ Level 3 (Advanced etc.)
3a	<i>Lower tertiary education</i> HNC-HND, Higher level of BTEC,BEC,SCOTBEC, TEC or SCOTEC-SCOTVEC; Teaching qualification for primary education; Nursing or other medical qualific. not yet mentioned; Other Higher Educ. Qualific. below degree level; RSA higher diploma; NVQ/SVQ level 4 (Higher technician)
3b	<i>Higher tertiary education</i> Higher degree; First degree; Other degree level qualification such as graduate membership of professional institute; Diplomas in higher education; Teaching qualification for secondary and further Education; NVQ/SVQ level 5 (prof. degree)