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ABSTRACT

The economics and sociology of the relationship between training and employment in Europe were examined through a comparative study conducted in six countries: Germany, Spain, France, Italy, the Netherlands, and the United Kingdom. In each country, teams of researchers used a standardized methodology to collect the data needed to estimate (over a period of approximately 10 years) the structure of occupational skills triggered by the following: the rise in the level of education of successive generations (supply model); the variation in the strength of the occupational work force (demand model); and the two effects simultaneously (simultaneous effects model). The three models were used to establish a common "occupations, age, and certification" job market database for the six countries. Analysis of the database established that, even outside regulated occupations, there is a preferential deployment of certain certificates in certain occupations. The internal certification structures within occupations were themselves closely correlated to the age of the work force. In all six countries, the continuing rise in the level of education was spread over all occupations in proportion to initial skill structures. (The report contains 25 references. Appended are information on the study methodology and 10 figures and tables.) (MN)

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CEDEFOP Document

# Certificates, skills and job markets in Europe

## A summary report of a comparative study conducted in Germany, Spain, France, Italy, Netherlands, United Kingdom

European Centre for the Development of Vocational Training

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Certificates, skills and job markets in Europe

A summary report of a comparative study conducted in Germany, Spain, France, Italy, Netherlands, United Kingdom

Financed by CEDEFOP and coordinated by LIRHE (Toulouse, France)

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# SUMMARY

# 1. THE GENERAL QUESTION ...

The rise in the level of education is a phenomenon which can be observed throughout Europe in general. Essentially reflected by prolonged training for young people, it is spread throughout the working population as a whole in terms of a demographic process, each generation having experienced more education than the previous one. This phenomenon is measured on the basis of the average or structural rise in the level of certification of the working population over time.

In the various countries, this rise in the level of education may assume different shapes and forms as a function of the history of the educational/training system and, more generally, the history of the societies in question. The principal disparities are to be found at the level of the respective weight of vocational training, on the one hand, and the organisational arrangements for vocational training, on the other. It is nevertheless striking to note that in all countries certification has hitherto essentially been acquired at the beginning of working life, continuing training playing a relatively insignificant role in this context.

Although prolonged education is a general and continuous trend to be observed in all countries, it is neither completely homogeneous nor linear in time and shows specifically national inflections and accelerations, in particular in the recent period (from 1986 in France, from 1990 in the United Kingdom, from 1975 in Spain), the effects of which shall not really be observed for several years to come.

Finally, the job markets and economies absorbing this surplus of "human capital" also have very evident peculiarities of their own.

All countries have made considerable efforts to upgrade educational/training policy, with the more or less explicit objective of contributing to economic development by adapting their manpower to the rapid advance of technology in order to create more favourable conditions of national or international competition with a view to combating unemployment in general, and youth unemployment in particular.

The poor success rates, at least on the unemployment front, and the profound change in the attributes of the manpower resulting from these policies have made it necessary to compare the long-term consequences of these policies for the functioning of the job market, mechanisms of access to employment and the foundations of social mobility.

More precisely, this study examines the question of competition for access to employment by means of the term "skills" which in this context takes account of both certification level and vocational experience, and not, as is often the case, certification alone. This means that competition for access to employment can be considered within the much more general perspective of competition between generations, on the one hand, and in terms of distribution of skill supply, and not, as is again often the case, in terms of the demand for skills, on the other.

## ... AND INFLECTIONS LINKED TO NATIONAL ISSUES

From the outset, the French study was focused on the question of job renewal and the position of young people within these movements in an attempt to explain the apparent paradox that the younger generations who have experienced more education than the previous generations show a lower level of job integration and are more massively hit by unemployment. This type of question on the access of young people to employment directly implies consideration of this problem in terms of generalised competition between generations with different levels of certification. Discarding the classical approach of vocational insertion in terms of skill requirements, the team used an approach based on trends in training supply. This structural approach to skills, as opposed to the traditional cohort-type approaches, is explicitly based on the relations of complementarity and comparability or substitution between certificates and vocational experience. People starting off in the job market have a career of 40 years ahead of them during which their skills may develop even if their certification level has every likelihood of remaining stable.

In view of the economic context of the period under review, the Spanish team was more cautious about the hypothesis of non-regulation of the educational/training system by needs implied by our results. Important developments on the economic, political and social fronts in Spain highlighted the new and particular position of this country within the European Community. In the opinion of the Spanish team, the process of the growth in supply is dictated by the fact that the Spanish economy has to a certain extent had to "catch up" in terms of skilling and is therefore more dependent on the development of the employment system than other countries.

P. Robinson pointed out that over and above our underlying concern - the high level of unemployment in the European countries - it was also necessary to examine the links between this rise in the level of education and the sharp increase in wage inequalities since the end of the 1970s, an issue clearly specific to the United Kingdom. To what extent can present trends in the evolution of supply explain these two problems?

J. Dronkers, on behalf of the Netherlands, positions the field of investigation of the study in the context of the debate on the surplus of education which he reformulates as an alternative between the micro and macro levels of the relationship between training and employment. The growth in education and its - relative - economic success at micro level are called into question by an evident loss of the effective relationship at macro level. This clearly raises the question of the objective followed by public education policies and, downstream, the collective effort related to their funding. As J. Dronkers emphasised, the Netherlands, as a "small" country, cannot send out signals very different to those of the "big" European countries in the field of educational/training policy, a point which provides further justification for an international comparison of research work on these questions.

For the Italians, the relationship between the training level of supply and the composition of occupational structure according to level of training is one of the job market's mechanisms of adaptation to the conditions of a post-industrial society. The rise in the level of education is therefore one of the paradoxes of a society characterised by the dematerialisation of production, the pre-eminence of information and productivity gains leading to growth without jobs which is still hesitating (resisting?) to move in the direction of a leisure society.

The German contribution is based on the same fundamental question as those underlying the other studies: it starts out from the research of the 1970s on the "penetration" into employment of young people having experienced more education/training. It picks up the debates between approaches in terms of "manpower needs" or the social right to education, interrupted since the 1980s in view of other scientific and political priorities.

## 2. THE THEORETICAL POSITIONING OF THE STUDY

Let us briefly examine the theoretical framework for analysis of the interactions between the educational/training system and the system of production and, more specifically, the elements for a dynamic study of changes related to occupations (their nature, content, skill requirements), on the one hand, and the distribution of the certificate-holders produced by the educational/training system, on the other.

This comparative study basically raises two types of question: firstly, the logic of the distribution of the ever-increasing number of certificate-holders within the job market and, secondly, the interactions between explicit training (generally evidenced by a certificate) and other skill components acquired by means of informal mechanisms, in particular vocational experience.

### 2.1 The logic of the distribution of certificate-holders

A number of theories put forward hypotheses to explain the distribution of certificate-holders in the job market.

Human capital theories tend to establish a positive correlation between level of education and productivity and interpret the demand for education as a function of its economic profitability, either in individual (Becker, 1964) or "macro" terms (Denison, 1962), whereby public spending on education/training is regarded as investment in the promotion of economic development.

According to this theory, the increase in the demand for education and its direct consequence, a rise in the number of certificate-holders, constitute a response to the higher skill requirements of the system of production. Although it recognises other forms of skill acquisition, e.g. work experience, the human capital theory attributes a central role to schools in enhancing the skills and productivity of the workforce. The general tendency of jobs to require increasingly higher levels of skilling and the rising headcounts of the occupations requiring these skills implies a growth in certificate-holders.

Within this theoretical framework (which presupposes pure and perfect information), the education/training system is regulated by the needs of the job market. Any excess of skill supply diminishes the yield of educational/training investment and therefore reduces the demand for education.

Despite considerable criticism developed at length in the literature (e.g. Méhaut, Tanguy, 1986), the human capital theory has provided the basic reference framework for public education policies in recent decades. This theory has justified state intervention and support for the process of mass education as a contribution to increasing the productivity of our respective countries.

The "credentialist" theories, on the other hand, are based on the existence of a market of "credential acts", certificates and qualifications related to formal education, whose value is more dependent on supply and demand than the "knowledge and abilities" acquired in the course of training (Collins R., 1974). According to the credentialists, the screening

process is based on the signal sent out by the certificate in a job market in which information on the quality of supply is imperfect (Arrow, 1973, Spence, 1974).

M. Blaug (1985) distinguishes between two versions of the credentialists' screening hypothesis: according to his strong version, certificates only serve to identify the personal attributes of the individual, but cannot either improve or transform these attributes.[1] According to his weak version, screening by certificate is a response to the employer's uncertainty about the future output of job-seekers. Screening according to certificate and other characteristics, e.g. gender or race, is based on the employer's previous experience that by and large they tend to reduce uncertainties relating to working quality.[2] In this case, credentialism may be close to human capital theories, under the assumption that a university education increases a person's productive capacity.

Just as in the human capital theory and despite the departure from the hypothesis of pure and perfect information, the educational/training system is also considered to be regulated by skill requirements. An over-abundance of signals would make them inoperable and in the long term lead to a decline in the demand for education.

However Rawlis and Ulman (1974) show that the "statistical discrimination" strategy, related to imperfections in the "credentials" market, may lead to educational inflation, notably via an "exogenous" increase in the certification of the population. An abundance of certificate-holders leads to longer queues of applicants and therefore higher recruitment costs. To keep their recruitment costs steady, firms are obliged to raise their certification requirements, which contributes to a process of educational inflation. "If the criteria employed for certification in the educational system match the needs of the firm, educational certification may lower the firm's selection costs. Moreover, given an increase in the proportion of externally certificated applicants, the firm can secure the same average level of employee at lower wage and recruitment expenditures and hence with a shorter queue of applicants. However there is no reason why the certificated proportion itself may not come to exceed the amount demanded at any wage recruitment level, especially as prospective employees come to recognise the need for educational credentials. If the increased incidence of certification is not supported by a corresponding increase in the proportion of workers of desired quality at this level, the outside screening mechanism loses efficiency. The firm's selection costs rise - unless and until a higher level of formal educational attainment makes its appearence. And to the extent that the employer's demand for a screening subsidy is politically influential, both directly and through the popular demand for job-entry credentials, it contributes to a process of educational inflation." (Rawlis and Ulman (1974), p. 233).

Other theoretical studies have proposed elements offering a better understanding of the logic of certificate distribution in the job market, in particular those which could be classified under the "mismatch" between education and employment. These studies highlight new factors inherent to the education/training and production systems which

[1] Blaug, 1985, p. 21 "The screening hypothesis clearly has dramatic implications for educational/training policy. The difficulty of the hypothesis is that it comes in two versions: a strong version and a weak one... The strong version of the screening hypothesis asserts that education merely identifies students with particular attributes, acquired either at birth or by virtue of family background, but does not itself produce or in any way improve those attributes.

[2] According to Spence (1974), the screening of individual candidates may take place according to two criteria: indices which concern the personal, intrinsic characteristics of the candidates and signals which the individual may modify, e.g. certification level or vocational experience. The employer may regard certain indices as inappropriate for the quality of the work in question and imposê very high signals on the individuals concerned; these are generally persons from disadvantaged groups with low levels of education.

may impact on certificate distribution, without however excluding elements already contributed by the human capital and credentialist theories. These studies focus approach on the conflicts resulting from the autonomous dynamics of the education/training system, on the one hand, and the system of production, on the other (Carnoy and Levin, 1985; Franchi, 1984, 1992). The most important elements contributed by these theories for the purposes of our study are as follows:

- The dialectic conflict relationship between education/training and employment, characterised by mismatch and mutual influence.

- The multifunctionality of the educational/training system and the conflictual nature of its different functions. Carnoy and Levin (1985) show how the history of the US education/training system is marked by a succession of periods characterised either by the logics of adaptation to the needs of a capitalist society or equality of opportunity.

- The production of expectations among trained persons as an element of conflict between educational/training systems turning out a large volume and a very wide range of skilled persons and the capacity of societies, and notably job markets, to fulfill these expectations.

This type of approach is not incompatible with "public choice"-types of analysis.

These analyses highlight the links between educational supply and demand from a more political angle. In fact, education/training cannot be reduced to a problem of a merely economic nature, but is also partly political, insofar as it is a public asset. Public education/training policies are influenced by various pressure groups defending their interests, which it is often in the interest of the public authorities to satisfy. In this case, educational policy emerges as the result of a consensus between heads of enterprises, teachers and their trade unions, young people and their parents and educational/training policymakers.

Part of the literature therefore seriously raises serious doubts about these classical - and dominant - theories leading to mechanisms regulating the quantity of human capital and/or credentials as a function of market requirements.

This is the angle taken by our study: our working hypothesis clearly assumes an - at least partial - exogeneity of educational/training demand. This hypothesis is contrary to the dominant (human capital and filter) theories which start out from regulation by the skills supply market. It is also distinguished by its planning work which was inspired by the manpower approach. In these approaches, educational/training demand is "set" by the planner on the basis of an analysis of trends in labour demand.

## 2.2 Substitution of certification and experience

The two principal means of acquiring human capital are general and vocational training obtained within the educational/training system and training acquired in the job market, subdivided in turn into on-the-job-training and continuing training.

The human capital theory shows that persons with different implicit and explicit levels of training may be equivalent for a given job. These two types of training are therefore partial substitutes in terms of skills production. However the degree of substitution may

vary insofar as an employer may consider a minimum level of experience and/or initial training to be indispensable for a given job. In contrast, in terms of credentialist theories, the two components are often complementary insofar as certification is merely a screening filter, and not a guarantee of skills. It is therefore up to the employer to complete the candidate's training for the job in question.

The theory of competition for access to jobs (Thurrow, 1974) is a variable of the filter theory, whereby the employer's attention is focused on the candidate's aptitude for training and therefore certification level is a good signal. However the employer will tend to give preference to vocational experience, especially in-company job experience. This is why some jobs are as a priority offered in the internal market. Young school-leavers with no general and *a fortiori* specific job experience find themselves excluded from internal markets and at a disadvantage as far as their competitive position in the external market is concerned. At the bottom of the queue, they have little opportunity of up-skilling by acquiring experience and/or continuing training. Continuing training in fact rarely appears as a second chance if young people have not had the first chance (within the education/training system) (Planas, 1996).

Unlike the previous approaches, the segmentation theory illustrates different job markets with more or less rigid and more or less institutional barriers to mobility. The employer's choice (between young certificate-holders and also between persons of different age) therefore follows social, administrative or economic rules justified by the general policy of the firm in question.

According to this theory, initially put forward by Doeringer and Piore (1971), jobs are to be found in two types of market - the primary and the secondary markets - which are in turn divided into several components. The structure of the job market follows technological, as opposed to social, requirements stemming from the technical complexity of the process of production. Experience and learning are privileged by employers and are generally better remunerated, especially in the primary market. Level of training serves as a screening mechanism, but wages are determined by the characteristics of the job, not by the attributes of the employee. Human capital not deployed in the workplace is devalued. The substitution of certification and experience is therefore partly regulated by the segmentation of the job market, which in itself is determined by technological development and institutional rules.

These theoretical elements show that, like initial training, experience is an inescapable component of individual skilling, both in the internal and external markets. The inclusion of this dimension in the analysis and consideration of the interactions between these components is the second major hypothesis of our study, the hypothesis being that skills are traded in the labour market and that these skills are co-produced by the educational/training system and the system of production. The specificity of beginners is that they have no work experience.

# 3. STATISTICAL RESULTS AND THEIR ECONOMIC INTERPRETATION

CEDEFOP agreed to co-finance a study comprising teams from six EU Member States[3] centred on the following three objectives:

- to set up of a network of teams specialised in the economics and sociology of the relationship between training and employment,

- to draw up a common field of investigation as a basis for comparative research on the dynamics of interrelationships and interactions between the system of production and the education/training system,

- to carry out an initial comparative exercise of statistical discrimination.

This phase of construction of a field of investigation around comparable databases is coming to an end. Each of the six Member States has compiled the necessary data to which the methodology initiated by the French team from LIRHE has been applied.

Four principal results have been obtained from the statistical discrimination exercise. The first two (1 and 2) concern statistical data observation, cross-referencing "occupations" with certification level and the age of the workforce, highlighting a considerable diversity of the skill structure of the various occupations according to age and level of certification, i.e., by approximation, in the skills structures of the various occupations.

The second two results (3 and 4) concern trends in skill structures in each Member State over a period of approx. 10 years. The results of a modelling process[4], they highlight, with a surprisingly degree of convergence for each of the six Member States, the determining importance of the effect of training supply as an explanation for the internal transformations within occupations. This effect of supply thus plays the role of the "background music", as it were, which, once a known and measured quantity, pinpoints the residual effects which are interpreted as market effects due to the specific behaviour of occupations to ensure their renewal.

## 3.1 In its preliminary phase, nevertheless essential for the quality and viability of the results advanced, the statistical work led to the set-up of a common "occupations, age and certification" job market database for the six Member States.

- The occupation is a category of employment with related characteristics in terms of the content of the work carried out, usually with reference to the level of complexity of tasks, the specialised field involved (in terms of academic specialisation and/or functional deployment in the firm) and more rarely relating to the sector of activity or the

[3] The teams involved are as follows:
GRET (University of Barcelona), Spain
LIRHE (University of Toulouse), France
University of Halle, Germany
University of Amsterdam, Netherlands
ISFOL (Rome), Italy
London School of Economics, United Kingdom.

[4] The methodology used is described in Annex 1.

worker's status. This applies to the six Member States examined, even if significant divergences remain in the logics of classification.

- Training level essentially identifies the length of training, most frequently in initial training and evidenced by a diploma. Training level is an individual characteristic. Classifications according to training level clearly differ from Member State to Member State. The basic criterion of length of training may be combined with the type of training acquired (general, technical, vocational) or the nature of the training providers (public education, firms, etc.).

- Age is used as an approximation of the length of working life which is in itself considered as an approximation of vocational experience, whereby this term covers all types of formal or informal learning acquired in the firm or elsewhere which are not attested by a diploma. Measurement of age does not pose a particular problem.

The information is coded in national employment and training classifications. These classifications are not necessarily comparable; they do not have the same logic of construction or the same level of detail. However this is not a problem for the proposed exercise insofar as the comparison is not between occupations themselves, but the manner of development of their internal structures. Consideration from this dynamic point of view makes the question of the comparability of classifications less crucial and in no way hinders the convergence of national results.

Throughout this study, the term "occupation" is understood in a very broad sense as a category of employment. It is based on the coding of individuals' activity with the help of classifications. For reasons of statistical viability related to the size of the national samples, they were grouped into a number of posts variable from one country to another. The macroeconomic framework of this exercise occasionally attributes the occupation with the role of a player but this is clearly a linguistic simplification - it is of course the firms which recruit staff. In an ex post situation of equilibrium, the impact of this recruitment on the composition of the occupations is analysed according to certification and age.

## 3.2 Observation at a given point in time of the structure of occupations according to certification level and age indicates a relationship between training and employment based on interrelated phenomena:

There is a preferential deployment of certain certificates in certain occupations, even outside regulated occupations, each occupation thus being clustered around one or several certification levels.

These internal certification structures within occupations are themselves closely correlated to the age of the workforce. Generation after generation, the educational/training system develops and produces flows of certificate-holders differing in terms of quantity and level, each person probably bearing the traces of the average level of his/her generation. Each generation thus has a specific certification structure of its own.

If it is accepted that a person in employment has the necessary skills to do the job, this diversity of certification levels within the same occupation and the manner in which it

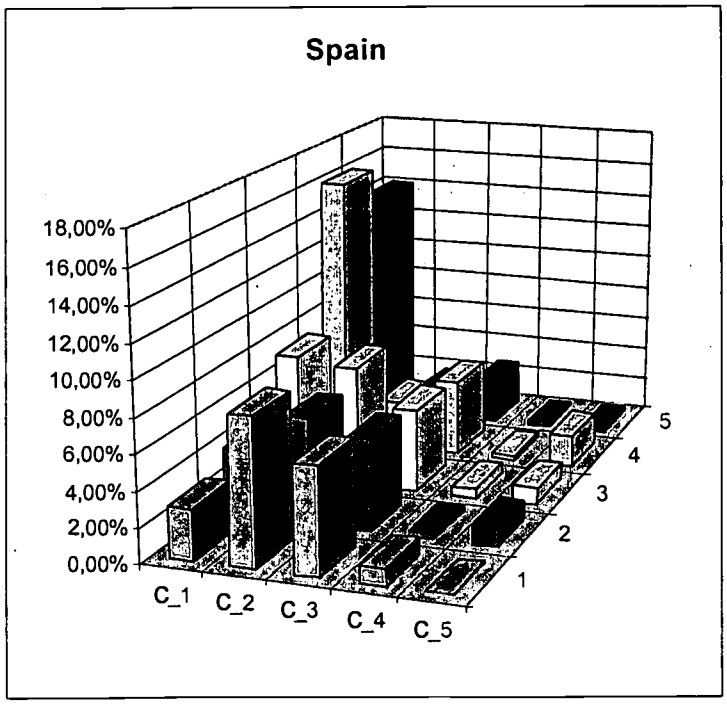
varies according to the age of individuals demonstrates the pluralrity of the routes of access to that occupation: access to an occupation may in principle take place at any time in working life, but on the basis of a minimum of skills, as a function of (at least) certification and experience.

This is based on the theoretical hypothesis of a relationship of equivalence between level of certification and level of experience, i.e. between explicit and implicit training. These two components are individually complementary. Beginners have no experience and those who have no qualifications have no certificate. But, at the level of an occupation and in terms of recruitment, they are globally exchangeable: for the same job, an employer may have the choice between a young person with high qualifications or an adult with a much lower certification level, but much more experience.

These phenomena as a whole serve as a stimulus to reconsider the question of the vocational insertion of young people (and therefore also of unemployment) and, more generally, of access to employment in the framework of inter-generational and inter-training levels, and not only between levels.

The first result is statistical, i.e. based on observation of an occupation at a given point in time. For example, this exercise was carried out for all the six Member States in the category "secretaries, office and administrative employees" (cf. Fig. 1 for Spain; Annex 2 for the other Member States). The occupations in each of these groups are not strictly the same - far from it - but it is not a question of comparison in this context. The graphs show that each occupation has its own "signature", a function of the certification and age of the workforce, unique at a given point in time, and evidence of the relationship of equivalence between implicit and explicit training.

**Fig. 1 - Skill structures in the "secretary" category in Spain[5]**




[5] This category is not homogenous for all the countries and has been chosen for purely illustrative purposes.

## 3.3 The rise in the level of education changes the structure of the working population according to certification and, ultimately, that of the various occupations; in fact the concomitant increase in executive, technician and other skilled category jobs is not sufficient for the uniform absorption of this educational/training surplus.

In parallel with this general rise in educational levels, a growth in the numbers of higher skilled, to the detriment of lesser skilled jobs can be observed within the working population in each of the six Member States. These two developments are not *a prioi* independent, but the "upward" trends in job structures alone can certainly not justify the rise in the level of education to be observed within the working population (cf. e.g. Fig. 2. for Spain; Annex 2 for the other Member States). The occupations have had to absorb more certificate-holders, i.e. modify their internal rates of certificate-holders to fully absorb the rise in the level of education. This convinced us to discard any hypothesis concerning the setting of coefficients, the underlying hypothesis of the manpower approach which provides the basis for many planning studies.

**Fig. 2 - Structures of initial (1) and final (2) certification and induced by variation of employment (3) in Spain**

| Certification level | (1) 1982 | (2) 1990 | (3) |
|---|---|---|---|
| No certificate or primary education | 13.6 | 11.2 | 12.2 |
| Elementary | 70.3 | 60.1 | 68.1 |
| Upaccording to secondary leaving certificate | 6.3 | 9.1 | 7.0 |
| Vocational training | 2.1 | 8.2 | 2.4 |
| University | 7.7 | 11.4 | 10.4 |
| **Total** | **100 %** | **100 %** | **100 %** |

*N.B.: Column (3) is obtained by applying to the 1982 structure the variations in the numbers of the occupational workforce between 1982 and 1990, assuming constant coefficients of the rates of certificate-holders according to occupation.*

**The occupations have therefore modified their internal proportions of certificate-holders by absorbing the surplus of supply contributed by each new generation of trained persons.**

The problem therefore is to determine the spread of this abundance of certificate-holders within the employment system. Has it been absorbed by the occupations most affected by significant technological change and are therefore in demand of supplementary skills or has it been distributed throughout the entire employment system?

This second hypothesis can be tested easily: it is simply a matter of simulating what the evolution of internal occupational certificate structures would have been if, starting out from their initial situation, they had only been affected by the level of training supply, generation after generation.

On the basis of this methodology, developed by the French team and reproduced on standardised data (i.e. Occupation*Age*Certification at two points in time) for each of the six Member States, we suggest three methods of estimation: the first only takes account of variations in training supply, the second, in contrast, only takes account of variations in the manpower of the various occupations and the final method takes simultaneous account of both effects.

## 3.4 The main results of these three modelling exercises (Fig. 3) illustrate a surprisingly homogeneous predominance within the six Member States of a pure effect of educational/ training supply. The continuing rise in the level of education is spread over all occupations in proportion to initial skill structures.

A more precise analysis of the results of the three estimations proposed shows that occupational skill structures, according to the distribution of certificate-holders, generation after generation, within the employment system are:

a) **highly dependent on the past** (Fig. 3, line 5).

Occupational skill structures show little variation within this period compared to the total number of entry and exit flows: depending on the Member State in question, the initial structure alone allows a forecast of 63 - 85% of the final structure (with the exception of the Netherlands where the observation period is longer). This means that firms have broadly reproduced previous trends in their recruitment and promotion choices, and in particular have respected the previous balances between recruitment of (more highly qualified) young people and promotion of (less qualified) younger people in the various occupations.

Job renewal takes place by the entry into employment of young people coming up directly from the training system and/or the occupational mobility of human resources with equivalent skill levels. The states observed are momentary points of equilibrium resulting from a multitude of movements of entry into and exits from employment. The (relative) stability of skill structures over approx. 10 years, taking account of these movements, shows that the labour market has continued to function and that there has been no general obstruction of social and/or vocational promotions. Thus, e.g., at the end of the period, relatively young executives with a low level of certification can still be found who were probably promoted in the interval.

This upward mobility has coexisted with phenomena of unemployment and/or declassification of young people.

This demonstrates that the ratio of equivalence between explicit (school-based) and implicit (on-the-job) training, suggested by the statistical observation of the age*certificate of occupations was also maintained over the period under review, despite the significant increase in certificate-holders. This confirms that competition for access to jobs must be analysed as a phenomenon of generalised competition.

b) **largely predicted by the rise in the level of education of successive generations** (supply variation model, Fig. 3, line 6).

Occupations in general have benefited from the rise in the level of education, and not only a restricted number of occupations with a particularly high incidence of technological development, as might initially have been expected. In other words, this rise in the level of education due to the arrival in the labour market of increasingly qualified generations is spread over all the occupations in proportion to their initial skill structure.

This result demonstrates a strong supply effect in the development of occupational skill structures, independent of their differentiated demands.

The general character of this result makes it to a certain extent predictable. Knowledge of the long-term production of educational/training system means that subsequent skill structures can be broadly "predicted".

The correlation between the final occupational skill structure and the initial structure modified only by trends in supply lies between 80 and 91.9%, depending on the Member State in question (with the exception of the Netherlands). These results are shown in line 6 of the table.

These results, in particular their convergence within six Member States with their own training and employment systems, imply that the social demand for education/training is independent of the needs of the economy. Although this is not a new idea, this study suggests a formalisation and a quantification of the predominance of the effect of supply on which it is based.

**c) largely independent of variations in the strength of the workforce in the various occupations**

Taking into account, not only the effect of supply, but also variations in the strength of the workforce in the various occupations, does not significantly improve the estimation of skill structures, as comparison of the supply effect model (line 6) and the simultaneous effects model (line 8) shows.

One could have expected these changes in structures to have been linked to the growth or decline in the occupations, these quantitative trends being indications of both highly different entry and exit flows and probable changes in contents. It appears on the contrary that trends in skill structures are not related, or only slightly related, to variations in the strength of the workforce according to occupation.

If variations in the strength of the workforce in the various occupations are regarded as indicators of skill demand, this result indicates that the development of skill structures is largely independent of this demand. In other words, the effect of demand appears to be negligible compared to the effect of supply.

If we seek to make a very general projection of occupational skill structures, information on the evolution of the production of certificate-holders by the educational/training system is sufficient to gain a relatively precise idea, regardless of the variation in the demand of occupations elsewhere.

This apparent independence of skill structures of trends in workforce strength in each occupation suggests a skills surplus in the Member States observed: in any case, it is very unlikely that the development of the economies considered has been impeded by a

dearth of skills (apart perhaps from ad hoc deficits of extremely specialised skills which are not observed at macro-statistical level).

### 3.5 This effect of supply acts as very loud "background music" (trend) to the explanation of skill variations. Control of this means that the preferential adjustments vis-à-vis the various workforce categories can be studied, occupation by occupation.

Modelling means that one can predict, essentially on the basis of the evolution of supply, the future skill structure of occupations in proportions ranging from 68.8% in the case of the Netherlands to 92.5% for the United Kingdom (line 8). The part which remains unexplained by the model must be interpreted occupation by occupation.

The results of the analysis of these residual effects are immediately operational: for each of the Member States it is possible to list the occupations which are "deviant" compared to foreseeable average behaviour as a function of the evolution of training systems. This provides a three-group typology: occupations which have consumed more certificates than envisaged, those which have consumed fewer and, finally, those whose behaviour corresponds to the projections.

This work regarding the classification of occupations was carried out by the Netherlands and Germany but it is not possible to draw any "economic" conclusions on the means of deployment between the various groups.

The UK contribution focused on the specific question of certificates of higher education. P. Robinson takes the example of secretaries who, in the UK, as moreover in the Netherlands, tend to have a higher certification level than could have been projected; this may be due to two types of phenomenon which might initially seem contradictory: technological evolution or the declassification of university graduates.

It is possible, data permitting, to go a step further by reintroducing into the residual analysis the breakdown according to the two equivalent skill modalities, i.e. certification and experience. This exercise has so far only been carried out for France and Spain.

Occupations therefore show different and thus preferential behavioural patterns to those expected, not only compared to the average certificate level (UK, Netherlands) or structure (Germany), but also in terms of the possible complementarities/substitutions between diplomas and experience; this indicates arbitrations by employers between highly qualified young candidates and/or (older) more experienced employees for a given job.

Occupations can thus be classified according to their forms of arbitration between implicit and explicit training.

In the case of France, this typology leads to the conclusion that skilled occupations (in terms of job qualification, executives, intermediary occupations, skilled workers and employees) have generally preferred to draw on experience and/or the experience + certificate tandem. In contrast, lesser skilled occupations seem to have had more frequent recourse to certification than could have been projected. The least that can be said is that utilisation of certification does not seem to be very closely related to the development of skills, i.e. technological trends.

The Spanish results are very close to the French ones. It can be observed that most of the occupations have consumed more diplomas with or without experience than the initial situation would have suggested. The general trend is towards substitution in favour of younger and more certified persons - although this does not mean that this group is not particularly hard hit by unemployment. Finally, it appears that as in France, but in a more discreet form, employers tend to call more on experience than certification in certain occupations involving skilled or semi-skilled manual work.

**Fig. 3 - Determination (R2) of coefficients between different estimates of the occupations*age*certification tables**

| Model | France | Italy | Germany | Netherlands | Spain | United Kingdom |
|---|---|---|---|---|---|---|
| Period of observation | 1982-1990 | 1981-1991 | 1979-1991 | 1973-1992 | 1982-1990 | 1984-1994 |
| **Results: workforce** | | | | | | |
| (1) Variation observed | 74.2 | 48.1 | 72.9 | 21.5 | 85.9 | 60.8 |
| (2) Variation in skill supply | 83.3 | 56.6 | 91.4 | 71.5 | 91.7 | 86.2 |
| (3) Variation in skill demand | 80.0 | 70.4 | 79.9 | 33.7 | 87.9 | 71.1 |
| (4) Simultaneous variation in supply & demand | 93.7 | 91.3 | 93.2 | 82.5 | 93.8 | 93.7 |
| **Results: structures** | | | | | | |
| (5) Variation observed | 79.4 | 63.3 | 69.6 | 14.2 | 84.7 | 71.9 |
| (6) Variation in skill supply | 91.2 | 80.0 | 87.2 | 66.3 | 89.2 | 91.9 |
| (7) Variation in skill demand | 79.4 | 63.3 | 69.6 | 14.2 | 84.7 | 71.9 |
| (8) Simultaneous variation in supply & demand | 91.8 | 83.2 | 87.1 | 68.8 | 88.5 | 92.5 |
| (9) Correlation between the effect of supply model and the simultaneous effects model | 99.6 | 95.3 | 99.9 | 98.1 | 99.5 | 99.7 |

# 4. CONCLUSION

❑ In very general terms, the results of this European study have demonstrated a predominance of an "effect of supply" in trends relating to internal occupational skill structures in all the Member States included in this study.

Two hypotheses, apparently contradictory, but in fact undoubtedly complementary, are generally advanced to answer this question (P. Robinson).

The first, the credentialist hypothesis, maintains that in view of the increasingly skilled workforce, employers merely raise their skill requirements for each occupation in a manner which is very predictable in terms of trends in actual supply. These higher-level requirements may in themselves be dictated by a disinterest in certification (recruitment of those who apply ... and those who apply have a certain composition reflected in recruitment) or due to knowledge of trends in supply which acts as a filter (one recruits upwards because the supply is there and there is no reason to deprive oneself ...).

The second hypothesis, more commonly evoked in analyses on skilling, maintains that this general increase in skill requirements by occupations stems from significant changes in the field of technology and/or the need to improve competitiveness. These trends mean that each occupation requires a more highly skilled workforce for its production needs.

It is difficult to make a choice between these two interpretations of the same phenomenon, in particular given the lack of empirical and relatively general studies on the subject, and partly in view of the fact that these interpretations are eminently political in their significance (J. Dronkers). The results of the study have nevertheless clarified certain processes under way and more clearly distinguished what is related to which one.

The initial interpretations suggested by the CEDEFOP study largely seem to validate the former hypothesis in the light of the effect of the degree of the effect of supply and its identification in the six Member States examined. Indeed, the explanation by supplementary skill needs is hardly compatible with the result of the distribution of the effect of supply throughout all the occupations.

Employers thus respond to the increase in skill supply by raising their skill requirements, not (necessarily) because they need a better skilled workforce to do the work, but because they recruit the manpower available in the market.

This effect of supply necessarily (automatically) leads to problems of declassification at the beginning of working life.

It would also seem that over the periods observed, the system of occupational and social mobility has continued to redistribute social positions, thus reducing and offsetting declassifications at the beginning of working activity according to the already-mentioned principle of equivalence between implicit and explicit training (Béduwé, Espinasse). The internal and characteristic diversity of each occupation is globally maintained.

However the hypothesis of a strong "credentialism" is *a priori* contradictory to certain elements of the functioning of job markets observed elsewhere: Why then is there not a faster saturation of the levels of certificate-holders by occupations? What is the explanation for the fact that occupational mobilities, in particular upward mobilities, have

been maintained during this period? How, at least in the case of France, should the durability of the relationship of equivalence between certification and experience be interpreted? Finally, how are the ever-higher unemployment rates among the most highly certified youngsters to be understood?

The answer to these questions undoubtedly lies in the part of the adjustments which does not explain the effect of global supply, i.e. in the heterogeneity of occupations, translated, despite or over and above the effect of supply, by preferential modes of recruitment.

There are numerous occupations to be found in all the Member States for which upskilling is higher - or possibly lower - than the average predicted by the effect of supply. These residual gaps have been interpreted as market effects corresponding to the adjustments effected by the occupations to relative rarities of supply (Béduwé, Espinasse). This means that within certain occupations, which can be identified, technological change has been sufficiently significant or more significant than elsewhere for an increase in demand in terms of recruitment to have really taken place. This interpretation however cannot be applied to occupations as a whole.

❑ A second important result, common to all the Member States examined and which stems directly from the predominance of this effect of supply, concerns the insignificance of the effect of demand in explaining the variations in occupational skill structures.

An initial model to explain this phenomenon was put forward (J. Vincens and J.M. Espinasse). It is based on the idea that recruitment for each occupation takes place within a sub-assembly of skilled persons (eligible from a given skill threshold), these skills corresponding to various particular combinations of certification and experience. A simple model of access to employment illustrates that the two principal results of our statistical work (proportionality to skill supply and independence from occupational workforce variation) imply an adequate availability "of eligible persons" in all categories in order to prevent bottlenecks. Indeed, the extreme deficits of one or several workforce categories would imply dissymetric use of categories incompatible with the results. **Subject to the precautions of utilisation concerning this type of exercise, the modelling exercise seems to validate the hypothesis of the absence of skills rationing in the economies of the six Member States within the periods considered.**

This explanation is generally accepted by all the teams in our network, even if certain nuances are necessary for specific Member States. In Spain, the growth in the occupational workforce has had a stronger impact in explaining the trends of structures according to certificate than elsewhere (Majuan et al.). Similarly, Italy is the only country for which the "demand" model is better than the "supply" model in terms of numbers. This is an avenue of research which should be followed up.

❑ If this diagnosis is accepted, it clearly places the relationship between training and employment in a rather unorthodox light. In particular, an analysis still widespread in the social debate views the intensification of educational/training effort as a remedy to unemployment and, more generally, to all the difficulties of our economies. This analysis - if our interpretation is correct - is based on the existence of a dearth of skills to which a training effort should constitute a remedy.

However, our results and our interpretation of these results raise the question as to how the development of the educational/training system leading to an (over)abundance of skills has been possible without any knock-on effect on demand for education/training. The

political repercussions of this rise in the level of education and of the acceleration it has shown for a number of years are fundamental questions for the development of training systems.

The fact that our societies continue to intensify the initial training effort, despite its relative ineffectiveness in combating unemployment, in particular youth unemployment, indicates a consensus on to this question. Three players are directly involved in the rise in the level of education/training: the state, firms and young people. Each player has two possible strategies: to prolong training or not to prolong training. The problem is the same for each of our six Member States, even if the forms assumed by prolonged education/training differ according to the specific contexts and national characteristics of the training systems in question. It is clear that the three players have an interest in applying the strategy of prolonging education. The firms see the threefold interest of pressure on wages, the constitution of a skilled manpower reserve to respond to production fluctuations and an increased opportunities of manpower management. The task of the state is to do its best to guarantee availability of skills. On the other hand, over and above this long-term task, holding back young people within the training system has the short-term advantage of keeping them off the dole queue. As for the young people and their families, in view of current levels of unemployment and the low marginal cost of training, it is in their interests to obtain the highest possible level of diploma to acquire the maximum level of skilling. The three players see training as a means of safeguarding themselves against the uncertainties of skill trends and the long-term development of technicalities.

This policy has thus been advantageous for the three players in question and has constituted a consistent and consensual response to the context created in the six Member States by the simultaneous emergence of the globalisation of the economy, the accelerated advancement of technical progress and the sharp rise in unemployment. The disadvantages (declassification of young people, probable decline in the social and individual profitability of educational investment, the exclusion of the lesser qualified, etc.) have generally been insignificant, despite the disparities in the wake of national provisions prolonging education/training (e.g. the level of youth unemployment).

The problem therefore is whether policies of this type can continue and whether the cost/benefit ratio of a policy geared towards prolonging education shall remain positive. A further question is how the observations of our work and its underlying hypotheses can elucidate trends in the relationship between training and employment over and above merely observing facts.

❑ To return to our results, the sharp rise in the level of initial training programmes has not prevented the labour market from continuing to produce implicit knowledge enriching individual qualifications. The mechanism of co-production of skills by the educational/training system and the system of production still exists. This is demonstrated by the continued diversity of modes of occupational access. This is demonstrated by the predictability of this diversity which constitutes the principal result of this statistical work.

In contrast, the conditions of cooperation of these two systems have profoundly changed. The labour market, needing to renew all or part of those leaving it, tends to recruit youngsters with a higher degree of training who in the long term shall on average be more skilled with a given level of experience than their predecessors.

Although our empirical work is silent on this matter, it could even be supposed that the acquisition of skills by the combination of implicit and explicit training is increasingly rapid

if it is accepted that a higher level of initial training means that one can better acquire and better exploit knowledge acquired in occupational life.

Confronted with increasing competition upon entry into the labour market, young people in the course of training have no other option to increase their competitiveness but to upgrade their level of training. They therefore participate in the phenomenon of the acceleration of the distribution of skills described above and shall in turn become the formidable competitors of their juniors tomorrow. The process of the skills distribution has self-accelerated.

The effects of the change in the entry level of young people into the market are reproduced downstream at the level of the working population. A measure of educational/training policy may have implications via this mechanism for the conditions of employment (or even the employment) of those who left the educational/training system a long time ago. They are also reproduced upstream of entry into working life via the anticipations they trigger among young people currently in education and their parents.

It therefore seems that an approach in terms of generalised - skill-based - competition between the workforces of different generations with different levels of training constitutes a fertile field of research of which the results of this study are only the first fruits.

❑ The elements of analysis which we have identified offer several advantages in approaching the question of occupational mobilities, and more precisely the question of variations in the practices of mobility under the influence of the distribution of certificates. These rules shall be modified in at least two ways. Firstly, directly: the greater availability of skills reduces, all things being equal, each individual's chances of promotion. And secondly, indirectly: if firms use this greater availability of skills to raise their requirement levels beyond what is technically necessary. The chances of being competitive for a job therefore diminish for everyone, all things being equal.

However a fourth player must be brought unto the stage. Although not directly involved in the initial training system, this is a player who in the long term may have no interest at all in this rise in the level of education persisting, i.e. the wage-earners already on the spot, the "insiders" (and their trade unions). They have always benefited from either social occupational or second-chance promotions throughout their careers. Our results show that over the periods under review, these mobility systems have persisted, but the continuation of the acceleration of the production of certificate-holders will bring young people into the job market who, as demonstrated, become skilled more and more quickly. This continued surplus over various generations and in increasing quantity therefore risks seriously blocking the previous occupational mobilities or at least pushing wage-earners currently on the spot further down the queue. Offering higher numbers of skilled persons, the younger generation will compete more keenly than their elders.

The resulting decline in mobilities and career obstructions could become a major reason to call the present consensus on training into question. This is the question which we intend to pursue within our work.

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# ANNEX 1

## METHODOLOGY

The problem to be resolved was to find an estimation of the structure of occupational skills triggered by successively:

- the rise in the level of education of successive generations (supply model)
- the variation in the strength of the occupational workforce (demand model)
- the two effects simultaneously (simultaneous effects model)

Once this estimation is found, the variation in structure observed over the period of these effects of supply and/or demand can be "deflated".

The equation to be solved is as follows:

$$\Delta S = \Delta Se + \Delta Sr$$

**whereby:**

$\Delta S = S^f - S^i$ variation in the structure according to age and diploma within an occupation over the observation period

$\Delta S^e = S^i$ variation between the estimated and the initial structure

$\Delta Sr = \Delta S - \Delta Se$ variation in the residual structure

* **ΔSe** is the variation "imposed" by:

- the modification of the relative rarity of certificate-holders (certification structure according to generation)
- variation in the demand for each occupation (variations in workforce strength between 1982 and 1990)
- modification in supply ***and*** variation in demand

* **ΔSr** is the residual variation:

It is accounted to a modification of preferences for a given workforce category (qualified young people or experienced adults).

We propose three successive estimations.

### 1. Basic Model: estimation of educational supply

The variable: can be associated to each box of the occupation*age*certificate table,

$$a_{pda} = \frac{X_{pda}}{X_{da}}$$

whereby $x_{da}$ is the working population of age *a* with certificate *d*

The $\alpha pda$ represent the coefficients of supply of the occupation *p* in the manpower category *da*.

By variation, the formula becomes:

$$\Delta X_{dp} = \Sigma_a \alpha_{dpa} \Delta X_{da} + X_{da} \Delta\alpha_{dpa} + \Delta\alpha_{dpa} \Delta X_{da} \quad (1)$$

To isolate the effect of generational supply, one simply sets $\Delta\alpha = 0$, which implies that the occupations have retained their initial arbitrations between the various manpower categories.

For each occupation p, the estimated skill structure is expressed in the form of a vector $\mathbf{S}^e_{p,da}$ with a *da* dimension such as:

$$S^e_{p,da} = \frac{X^e_{pda}}{\Sigma_{da} X^e_{pda}} \qquad \text{for each occupation } p.$$

This must be compared to the structure actually observed at the final date, expressed in the same way in the form of a vector $\mathbf{S}^f_{p,da}$ with a da dimension and a p resulting in:

$$S^f_{p,da} = \frac{X^f_{pda}}{\Sigma_{da} X^f_{pda}} \qquad \text{for each occupation } p$$

The coefficients determining the model are indicated for each Member State in the table of results on line 2 for numbers and 6 for structure.

## 2. Set coefficients model

The following method consists of testing the final certificate structure which would be the result if only the variation of the occupational workforce had played a role within the period in question, i.e.

$$\beta_{pda} = \frac{X_{pda}}{X_p} \Rightarrow \Delta X_{dp} = \Sigma_a \beta_{dpa} \Delta X_p + X_p \Delta\beta_{dpa} + \Delta\beta_{dpa} \Delta X_p$$

$\Delta\beta=0$, which implies that the structure of occupational certification is set.

The results of this method are indicated in structural form for each Member State in the text (Fig. 2) and in the form of a determination coefficient (using the same scores as above) in the general table at lines (3) for the variation in numbers and line (7) for the structural variation.

N.B.: *Given the hypothesis of the set internal occupational coefficients, this is of course the same as that of line (5) corresponding to the variation in structure actually observed.*

## 3. Simultaneous supply and demand effects model

To estimate the corresponding Se, we used a matrix simulation method used in economic planning: knowledge of the final margins of the observed matrix (margin of supply of manpower category da and margin of members of occupations p) and the composition box by box of the initial matrix, the RAS method, by successive iterations, provides an estimated matrix whose boxes correspond to the minimal deformations compared to the initial situations and the margins of which are effectively the margins observed at the final date.

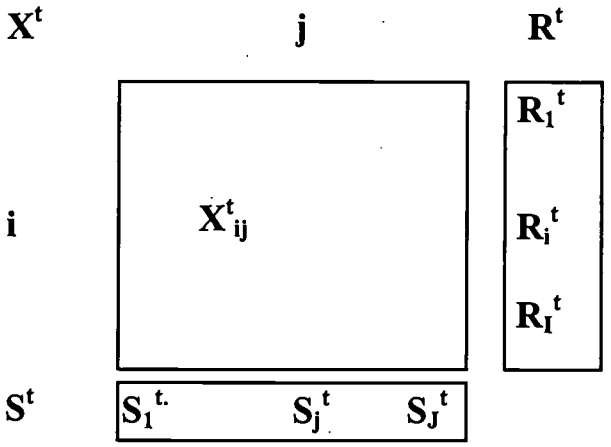
**RAS Method**

Whereby $X^0$, the initial value of a matrix, $X^0 = [X^0_{ij}]$ i=1...I, j=1... J

whereby $X^t$ its final value at point of time t, $X^t = [X^t_{ij}]$ i=1...I, j=1... J

Whereby $S^t$ and $S^t$, the line and matrix column margins $X^t$

$X^t$ is estimated on the basis of only $X^0$, $R^t$ and $S^t$.




Whereby $Y^{ras}$ is the result of this calculation, $Y^{ras}$ = estimation by RAS of $(X^t) = f(X^0, R^t, S^t)$. Calculation of $Y^{ras}$ gives the resolution of a non-lineary system of equations whose solution is obtained iteratively.

The first line of the initial matrix $X^0$ is multiplied by a constant $r_1$ such as:

$$r_1 \sum_{j=1-J} X^0_{1j} = R_1^t$$

to find an initial estimation of $Y^{ras}_{1j}$ such as $Y^{ras}_{1j} = r_1 X^0_{1j}$.
The calculation is recommenced for each line i. This gives an initial series of constants $r_i$.

The same operation can be applied to the columns of the matrix $Y^{ras}$ obtained in this way. Each $Y^{ras}_{ij}$ element on the first column is multiplied by a constant $s_1$ such as

$$s_1 \cdot \sum_{i=1-I} Y^{ras}_{i1} = s_1 \cdot \sum_{i=1-I} r_i X^0_{i1} = S_1^t$$

and similarly for each column j which gives an initial series of $s_j$.

One then recommences by line, then by column and so on.

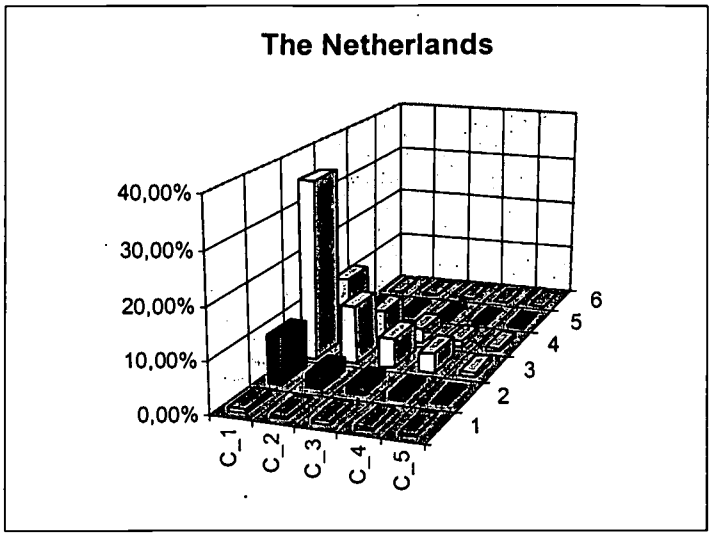
It is shown that if the algorithm converges, the $Y^t$ matrix obtained is such that the $Y_{ij}^t$ are closest possible to $X_{ij}^0$ in view of the constraints imposed on $Y^t$ since $R^t$ and $S^t$ are margins.

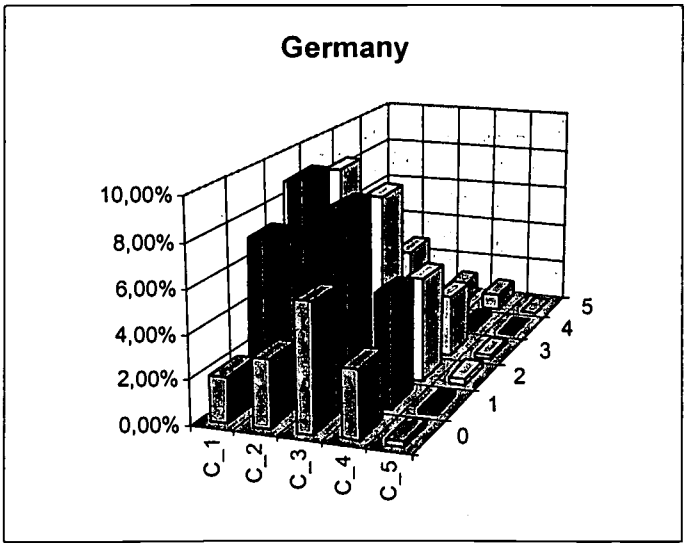
In this case $X^0$ is the matrix [occupations / age*certificate] observed at the beginning of the period in each of the Member States and $X^t$ is the same matrix observed at the end of the period.

The results are indicated in lines 4 and 8 of the table of results.

# GRAPHS AND TABLES

**Fig. 1 - Skill structures in the "secretary" category in the various Member States[6]**

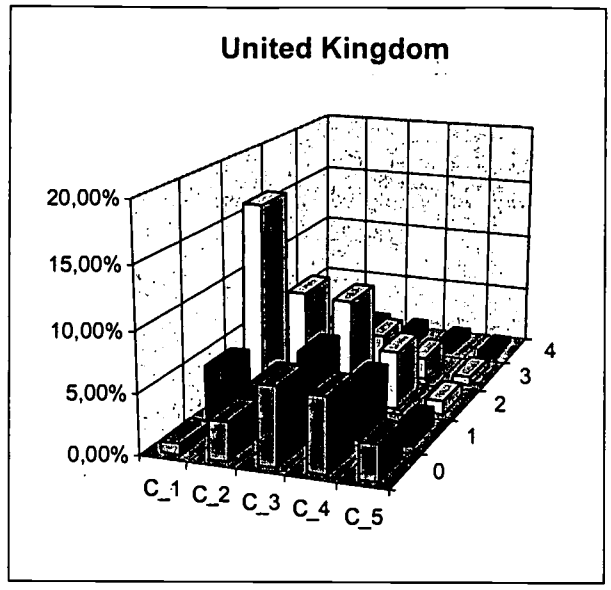



[6] This category is not homogenous for all the countries and has been chosen for purely illustrative purposes

The graphs show the numbers in the "secretaries" category by level of certificate and age bracket in the six Member States.

The age brackets range from the youngest to the oldest. The certification levels are also hierarchised and correspond to the headings presented in the following tables (Fig. 2).



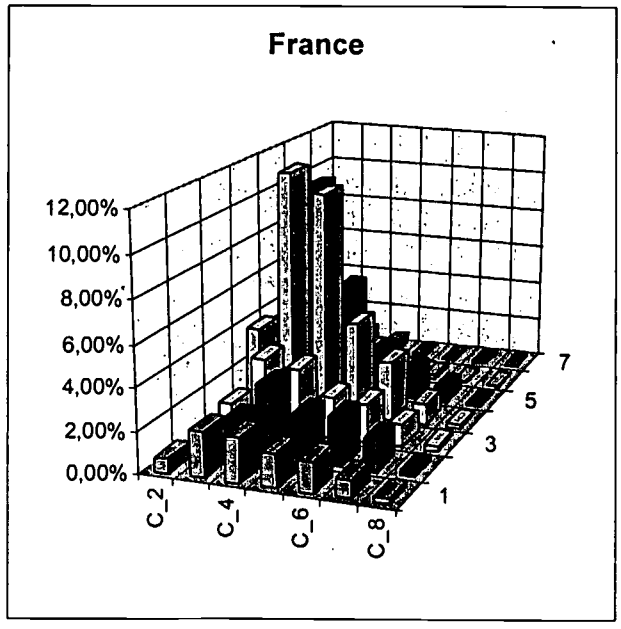



**Fig. 2 (continued) - Structures of initial (1) and final (2) certification and induced by variation of employment (3)**

**ITALY**

| Certification level | | (1) 1981 | (2) 1991 | (3) |
|---|---|---|---|---|
| 1 | Laurea | 5.8 | 7.7 | 5.6 |
| 2 | Diploma | 17.4 | 28.8 | 17.8 |
| 3 | Licenza media inferiore | 30.4 | 37.8 | 32.4 |
| 4 | Licenza elementare | 39.5 | 23.1 | 38.3 |
| 5 | Senza titolo | 5.9 | 2.2 | 5.2 |
| 6 | Analfabeta | 1.0 | 0.5 | 0.7 |
| **Total** | | **100 %** | **100 %** | **100 %** |

**GERMANY**

| Certification level | | (1) 1979 | (2) 1991 | (3) |
|---|---|---|---|---|
| 0 | No apprenticeship, no intermed. secondary school certificate | 26.9 | 13.1 | 23.4 |
| 1 | Apprenticeship, no intermed. secondary school certificate | 36.5 | 36.2 | 36.6 |
| 2 | Apprenticeship, lower and higher secondary school certificate | 17.2 | 23.8 | 18.2 |
| 3 | Technical school, etc | 11.4 | 14.8 | 12.0 |
| 4 | Technical college (Fachhochschule) | 2.5 | 3.6 | 3.1 |
| 5 | University | 5.5 | 8.5 | 6.7 |
| **Total** | | **100 %** | **100 %** | **100 %** |

**FRANCE**

| Certification level | | (1) 1982 | (2) 1990 | (3) |
|---|---|---|---|---|
| 1 | No certificate or no answer | 29.9 | 20.9 | 27.9 |
| 2 | Certificate of primary education | 19.2 | 14.6 | 18.1 |
| 3 | Secondary school certificate | 7.0 | 8.1 | 7.3 |
| 4 | Level V vocational education | 22.1 | 28.0 | 21.9 |
| 5 | Baccalauréat and similar | 11.0 | 13.1 | 11.9 |
| 6 | Baccalauréat + 2 years | 5.5 | 7.8 | 6.2 |
| 7 | Higher education (Bac + 3 and more) | 5.4 | 7.4 | 6.6 |
| **Total** | | **100 %** | **100 %** | **100 %** |

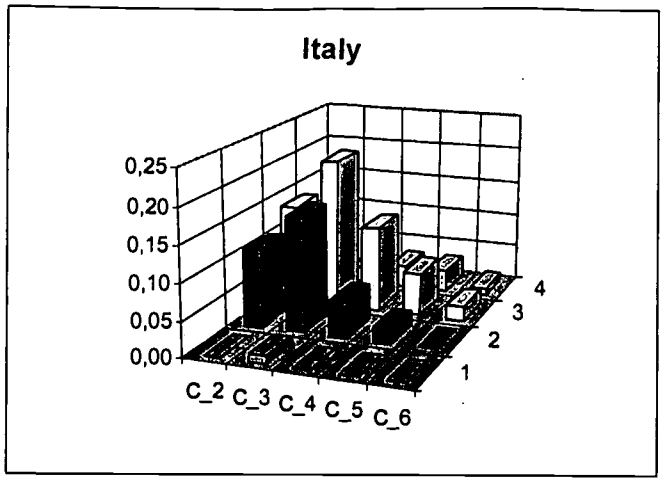



**Fig. 2 - Structures of initial (1) and final (2) certification and induced by variation of employment (3)**

## NETHERLANDS

| Certification level | (1) 1973 | (2) 1992 | (3) |
|---|---|---|---|
| 1 Less than primary education or unknown | 23.1 | 0.1 | 18.6 |
| 2 Primary education | 12.4 | 9.2 | 10.9 |
| 3 Lower level secondary education | 40.3 | 23.7 | 37.1 |
| 4 Lower level secondary education | 14.0 | 43.1 | 18.2 |
| 5 Vocational college | 6.9 | 16.4 | 10.2 |
| 6 University | 3.2 | 7.5 | 5.0 |
| **Total** | **100 %** | **100 %** | **100 %** |

## UNITED KINGDOM

| Certification level | (1) 1984 | (2) 1994 | (3) |
|---|---|---|---|
| 0 No qualifications | 35.8 | 17.4 | 32.9 |
| 1 Other qualifications | 8.8 | 15.4 | 8.4 |
| 2 O-Level or equivalent | 15.0 | 16.9 | 15.4 |
| 3 A-Level or equivalent | 25.3 | 26.6 | 25.0 |
| 4 Higher education | 15.2 | 23.6 | 18.2 |
| **Total** | **100 %** | **100 %** | **100 %** |

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# Certificates, skills and job markets in Europe

## A summary report of a comparative study conducted in Germany, Spain, France, Italy, Netherlands, United Kingdom

*Coordinated by LIRHE*

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CEDEFOP

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In the last 30 years the level of education has increased generally in all European countries. This mainly involves the prolongation of the duration of training for young people, each generation being 'better trained' (trained for longer) than the preceding one.

All countries have made considerable efforts to improve their educational policy. The declared goal was, more or less implicitly, to contribute to economic development and to enable the workforce to keep pace with rapid technological progress in order to be better positioned to tackle the new conditions of national and international competition. Against the backdrop of improving competitive positions, the struggle against unemployment, particularly amongst young people, is often presented as the ultimate justification for these policies.

This study was co-produced by CEDEFOP and a European research network. Its central subject is the macroeconomic or macro-social analysis of the consequences of investments in education on the job market and on the distribution of the workforce in the production system. It gives some answers to a very large question: how is the increasing number of people with qualifications being distributed over the production infrastructure? The question could also be asked the other way round: how does a labour system undergoing constant change absorb higher and higher numbers of increasingly trained people?

Two main reflections can already be identified from the results:

- the distribution of people with diplomas in occupations cannot be initially explained by the different needs of these occupations but by the presence on the job market of a growing number of people with diplomas;
- will the continuation of training activities, most of the effects of which are still to be felt on the job market, have the same consequences? If our results are reliable and stable, this question defines a new framework for the need for forecasts.

The idea which is most widespread amongst research staff, politicians and the social partners is that the training system must develop in line with the predictable needs of companies (demand — manpower approach). The number of jobs in the different occupations and sectors in the economy and the content of these jobs change rapidly and the training system must anticipate or prepare for these developments both in quantitative and qualitative terms.

The main result is somewhat disconcerting given the general ideas on which educational policies are based: the widespread idea according to which the development of initial training reflects developments in demands by companies or at least that this development is used by occupations in line with their own dynamics, is not very compatible with the homogeneity observed in the distribution of diploma holders in all occupations.

This is the interim evaluation of two years of research work, undertaken in coordination with six national teams, which is integrated in a very succinct manner into this document. This study was conducted in line with a common methodology developed by LIRHE (CNRS Toulouse-France) in six countries (Germany, Spain, France, Italy, Netherlands, United Kingdom) and at different times between 1975 and 1995.

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