EDUCATION/EMPLOYMENT INTERFACES
SKILLS[1] AND STATISTICAL COVERAGE

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The ideas outlined here are based on two research projects in which the authors were involved:

- as part of a TSER (Targeted Socio-Economic Research) project entitled *Education Expansion and Labour Market (EDEX)[3]*;
- as part of the second CEDEFOP report on *Research on vocational training in Europe*, report on *Skill market: dynamics and regulation[4]*.

They are ideas that are still being formulated and are not conclusive findings. They deal with the methods of acquiring and recognising skills that comprise an interface, in a more or less formal manner, between enterprises and the products of the educational system. In this regard, our contribution does not come under either the precise definition of the substance of the skills required in our labour markets or, as a result, their assessment in terms of productive performance, as other works have attempted (OECD, 1996).

These notes deal with the process of institutionalisation of certain features, whose effect has been to go beyond paper qualifications as evidence of the productive skills of those in the labour market. To do this, we start by assuming a more or less general development, in our labour markets, of the structures linking educational systems and productive bodies.

The study of these structures runs up against statistical information systems that are fashioned by the major areas of policy action (education, employment). But the application of scientific criteria shifts the study of the processes of acquiring and recognising skills to a multidimensional approach. The analysis of social change calls for a change in the pattern of available data.

1. From market in qualifications to market in skills

The European countries are experiencing profound changes in the relations affecting individuals' productive skills and how they are described and allotted within the job market.

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1   Skills: *Compétences* in the original French version. This term can be translated as skills or competencies. Is a dichotomy that poses some non-solved conceptual problems, which we do not deal with in this paper but that should be cleared before any statistical analyses of the skills market.

2   Research workers at GRET (Grup de Recerca sobre Educació i Treball - Institut de Ciències de l'Educació, de la Universitat Autònoma de Barcelona) and members of the EDEX network (Education Expansion and Labour Market).

3   http://edex.univ-tlse1.fr/edex/

4   A French version exists (*Marché de la compétence: dynamique et régulation* - see bibliography). An English version will be published by CEDEFOP this year (2000).

A look at the output side of productive skills reveals at once a strong trend towards more education. It has become more generally and more universally available, and at the same time it has become longer, leading to an upgrading of qualifications.

How has increased education affected the description of individuals' productive skills? As it has become more common, the school certificate has become a standard classifier. It distributes school-leavers in successive years in a rigidly organised structure. This results in a more and more prevalent filter effect; in other words, school certificates are no longer enough to ensure job access and promotion.

At the same time, as the filter effect increases, its significance for the labour market is reduced. School certificates reflect a less rigorous selection process than before, and they therefore include a wider range of individuals. School certificates increasingly seldom indicate the relative excellence of those who hold them. By encompassing wider and wider social elements, school certificates reflect more and more varied aspects - cultural and social legacies - that blur the meaning the certificates seek to provide for the labour market.

In conjunction with the variety of *starting points*, there is also an increasing diversity of educational *paths*. Certificates now attest to the completion of increasingly varied syllabuses, in terms of the courses followed, i.e. internal diversification. Lastly, there is an increasing number of access routes to the same qualification, with routes ranked according to prestige. An example of this is the significance of the university for graduates in the United States and, to an increasing extent, in the United Kingdom (Buechtemann, Verdier, 1998; Kivinen, Ahola, 1999). Without additional information - in this instance, the name of the university where the graduate obtained his degree - the degree itself proves to be a vaguer indication than before of relative academic achievement and, as a result, of the features traditionally associated with academic success.

On the other hand, changes in the structure of employment, new ways of organising work and the outsourcing of productive activities in turn call for a new approach with regard to identifying and recognising individuals' productive skills.

First of all, the increased complexity of the skills demanded by the production system brings with it the need to implement more precise methods of identifying and assessing skills. The traditional way of acknowledging productive achievement, which can be conventionally called *qualifications*, has been queried (Marsden, 1994; Lichtenberger, 1999). In its place comes a personalised approach based on actual work situations - *skills* - for the purpose of classification in the job market.

However, it is not "skills" as such that constitute a novelty in our labour markets. An awareness of skills has always co-existed alongside the institutional idea of qualifications. But in recent years, as a result of the steady erosion of internal job markets, the skills recognition based on interpersonal relations has been weakening. Direct, extended knowledge of workers was in a sense the foundation of occupational careers and the key to the effective assignment of individuals to jobs.

The erosion of internal markets has led to a loss of information about available labour. In turn, this has led to a desire to institutionalise the way in which occupational skills are recognised. The interfaces linking the education system and enterprises have been affected by recognition mechanisms that are in fact organised in a more or less formal or institutional manner, but which set out to indicate the productive skills of individuals.

2. Interfaces: between institutional and informal

The acknowledgement that skills are to an increasing extent the basis for trading in the job market means that there is a need for new systems of standardised indicators, which can take the place of qualification-based systems. These indicator systems are deeply linked to the set of rules that govern our job markets and which are themselves undergoing change. How are these rules devised? What part do the State and the social partners play in their construction? Who benefits?

The history of labour markets in Europe is marked by various segments, that are associated with unfair working conditions, and socially created industrial standards that have emerged. These processes have resulted in social and institutional responses, which vary from country to country, concerning the connection between training systems (those with qualifications) and categories of vocational opportunities (jobs).

The formulation of new indicator systems is bound to follow social conventions. Their standardisation in each country depends on specific social contexts where the very notion of skill reflects a wide variety of circumstances (Merle, 1997). Devising an operational system of standardised indicators at the European level must be accompanied by gradual and concerted negotiation based on harmonising the rules in the Member States. This is difficult to foresee in the short term.

The study of the interfaces between the educational system and enterprises prompts two fundamental questions: how are non-qualification skills obtained, and what are the practices that allow them to be identified or recognised by employers?

As part of the discussion prompted by the EDEX project (TSER programme), J.F. Germe has distinguished two models for the relations between the educational system and productive organisations. We shall call them A and B.

In model A there is an immediate link between the output of the educational system - i.e. produced by the system - classified by level and branch and study and the jobs offered by enterprises. In accordance with the model, raising the level of education results in at least a time lag between speedier production of qualifications, especially at the middle and higher levels, and the much slower development of jobs requiring - at least according to the conventions of our labour markets - these particular levels of study. Model A can be found in countries where initial training is essentially based on a school system that incorporates or even absorbs vocational studies. This is typical of the school systems in France, Spain and Italy.

Model B, on the other hand, provides an explicit interface between the products of the educational system and access to employment. This non-academic interface apparently has a threefold function:
- provide a better understanding of job applicants' skills in relation to the indicators produced by the educational system by explaining them in more suitable terms or, at least, in terms that are more readily understandable to employers;
- attenuate or redirect the expectations of those seeking vocational placements among those with the same level of qualification;
- reduce the tendency to continue in higher education; Germany and the United Kingdom in fact have far fewer university students than the Latin countries.

Model B is typical of Germany and the United Kingdom. In the case of the latter the interface comprises a multitude of institutions and training methods, while in the case of Germany it basically comprises the dual system, with an expanding range of internal differences.

It is our theory that interfaces similar to model B are gradually developing in all our countries, even though - as in the countries typical of model B - with very different methods and degrees of institutionalisation. In other words, all the European countries are tending towards model B as a result of the need to devise mechanisms that allow the three functions to be performed.

These interfaces consist of every:
a) "new" (?) method of acquiring skills outside school;
b) "new" (?) method of identifying and recognising skills.

An initial attempt to chart these interfaces can be made by completing the cells of the table which relates their component parts (methods of acquiring and identifying skills) to their formal or informal nature. The formal or informal quality of training methods is related to the explicit and organised intention to provide training; in addition, with regard to methods of recognising skills, formalisation consists of certifying them in some way or other that is externally verifiable.

This is undoubtedly a simplified approach, but the priority here is to define the matter as a whole (the basic features of the interfaces) while ignoring for the time being the tremendous diversity it comprises.

Table 1 - Components of interfaces between educational system and enterprises

	Formal	Informal
Methods of acquiring skills	*A*	*B*
Methods of identifying skills	*C*	*D*

A) Formal (non-academic) methods of acquiring skills:

This heading has to include:

- The tremendous differentiation, among pupils belonging to the same class group in the explicit initial training, that is introduced by parallel explicit training - which is increasing - with training goals or timetable adaptation between pupils and their parents. This type of explicit but extracurricular training, while it is often advertised by education centres as a service, can result in - what with supplementary lessons after school hours, courses in school holidays, etc - some 50% extra hours of training for some pupils in relation to others in the same class.
- The amazing development of explicit ongoing training that has occurred in various guises in our countries. The institutional basis for the development of these "courses" varies tremendously (State, regions, enterprises, training bodies, etc), which means that recording and certification vary as well. The policies financed by the European Social Fund are not unconnected with this development.
- Measures for the vocational placement of young people, which have also expanded greatly in recent decades.
- Internally accepted standardised courses, organised by recognised public bodies (for example, the British Institute's English courses).
- Courses organised through the Internet, and for which certificates are awarded, such as Microsoft courses.
- Institutionalised alternating training programmes.

B) Informal methods of acquiring skills:

- Experience of "spontaneous" work by young people receiving initial school training,

widespread in some countries, that can provide an asset when differentiating young people with the same academic qualifications.

- Work experience and its qualitative aspects, as a result of which seniority can be an advantage as well as a disadvantage (when earlier acquired skills are forgotten without anything taking their place).
- Social accomplishments, such acquisition as personal or family experiences, which comprise the background and the ability to acquire other skills on a simpler cognitive or practical level.
- "Cultural consumption", i.e. interest in what happens in certain cognitive or social areas. This refers to spontaneous ongoing learning or intellectual gymnastics, which keep the brain cells fit to access new knowledge that is required.

C) Formal methods of identifying skills:
- "Quasi diplomas"[5], connected with explicit ongoing training schemes.
- Certificates issued by "government bodies" at the end of informal apprenticeship.
- Awarding of "virtual diplomas" by multinationals, which accredits universally recognised acquisition of skills. This ranges from the British Council to Microsoft diplomas, through a variety of certificates that sometimes have a decisive sectoral value.
- The "formal" role that certificates awarded by certain enterprises develop concerning recognition of skills. Such certificates are connected with traineeships or competence in certain technologies, "machines" or "emergencies".
- The gradually formal role - externally "recognised" - of experience in enterprises that are at the forefront of their sector.
- English examinations certified on the spot by Cambridge University (First Certificate, Proficiency).

D) Informal methods of recognising skills:
- The *curriculum vitae*, which has existed for a long time but which is changing, as it increasingly contains information about hobbies and socially acquired values. It has become an indicator of skills background.
- Staff recruitment agencies, with the range of assessment tools they have developed.
- Interviews attempting to identify the individual skills required for jobs or to distinguish between applicants.
- Trial contracts, that allow the occupational skills of applicants to be identified in an informal context by means of direct personal relations.

3. *Institutionalisation of interfaces*

As education expands and the work force becomes more mobile, is it likely that there will be a gradual institutionalisation of these interfaces (as in the United Kingdom) and that this process of institutionalisation will go beyond the occupational placement of young people to assume a "lifelong" aspect?

It is unlikely that it is simply by chance that is precisely in the United Kingdom where the need to devise and institutionalise - by means of centralised and standardised recognition - this interface has proved most "urgent". This vanguard role stems from the weakness of "qualifications" in relation to the universal classification of employees and potential employees and the polymorphic explosion of types of training in between the education system and employment which cannot be categorised using a standardised code. In this regard - see Bjørnåvold (1998) - the problem has some

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[5] Formal and explicit certification relating to formal and explicit non-academic training activities that are not part of the qualifications system of the education system.

similarities with the monetary system and its need for legitimacy and transparency: how can you produce simple, standardised and legitimate information about the value of what you are trading in a context of new skill requirements?

The problem is not so pressing, nor does it appear in quite the same way, in countries where the system is primarily based on "qualifications" (France and Spain), where they nevertheless retain a fundamental role in allocating jobs, responsibilities and salaries (F. Dauty, 2000). In highly organised education systems, the level of qualifications plays a central role in the ranking of jobs and salaries; it underlies the merit-based approach which is its justification. Nor is it an urgent matter in countries that have institutionalised an interface between the education system and enterprises.

But the problem persists - and will probably intensify in future - in the countries where the former model, based on qualifications, is becoming weaker. There is therefore a pressing need for reform. But should schemes *à l'anglaise* be envisaged (with centralised recognition capable of identifying skills regardless of how they are acquired) in order to forestall these needs?

In other words, the French and Spanish systems are beset by a kind of "qualifications inertia" as a solid and valid indicator allowing basic labour market decisions to be made. On the other hand, Germany has a dual system which, with a greater or lesser degree of success, covers this function. However, the British model has more urgent need for the development of institutions fulfilling this role, this occurring on the basis of skills (QCA/NVQ)[6].

The "Latin" systems do not have the same urgency but raise a *de facto* question of the recognition of skills that are increasingly in institutional terms. What is the future for the former and the latter? Could the British model to some extent become the point of reference for the potential development of other national circumstances? In the strict sense, as an exported "model", the answer is probably not; but it undoubtedly represents a fundamental point of reference for future developments in countries sharing the same economic and social features.

Another topic of discussion that emerges concerns the accreditation of certificates for skills acquired outside the education system. There is a tendency to use the procedure of "ratifying" skills acquired outside the education system in the form of school certificates or "quasi-academic" certificates by means of certification and/or methods of ratification and/or certification.

Are there other methods of universal accreditation, apart from those approved by the education system, that can serve as a reference? Is it that new independent academic coordinates based on skills are emerging? Are there methods of assessment and accreditation than can provide an alternative to academic certification?

These are fundamental queries for understanding the possible processes of institutionalising the interfaces between education systems and enterprises.

4. *How to cover interfaces in statistical terms*

Tackling interfaces as a subject of study means dealing with two central questions that have already been mentioned: how are the skills not sanctioned by qualifications acquired, and what are the methods that allow employers to identify or recognise them?

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[6]   The most recent proposals concerning graduates are evidence of this.

A suitable methodology for this topic of study cannot ignore the fundamental features of skills.

a) Features of skills as a topic of study

- Skills are vectoral. An individual's level of skill is the conjunction of sets of basic skills. The components of the individual vector are acquired in different ways. Some are acquired through explicit training, others by systems of implicit training (on-the-job training, learning by doing, etc), others through social interaction outside work, and some are innate (or acquired very early in the form of primary social skills). Lastly, some skills can be acquired in an alternative manner through a combination of these means. Studying the acquisition of skills involves looking at a wide variety of locations and routes. It involves the collecting of information from a very wide range of sources.
- Skills are hard to measure on an *ex-ante* basis. Assessments are peculiar to each firm and, at the extreme, to each job. As a rule, a worker does not use the whole range of his individual skills in a job. Depending on the circumstances, he calls on some or other of his skills. There are no intrinsic (absolute) skills: useful skills depend on the functional circumstances of an occupation. There has to be separation of the "content" of skills and their *a priori* "indicator", which can provide only an approximate probability.

b) Limitation of available data

Vinokur (1995: 153) states that the theory of human capital conceals the function of certification inasmuch as it depends on perfect and unadulterated information about individuals with regard to labour supply and demand, and where the quality of the work is directly dependent on the cost of studying and, for a specific education technology, its duration. Viewed in this light, the prime indicator of an individuals' productive capacity has traditionally been the level of his qualifications.

However, there have been attempts to go beyond this indicator (as part of a research project funded by CEDEFOP - Mallet et al, 1997[7]). But skills could be identified only by rudimentary proxy elements that were very weak in the face of the complex situation they were trying to describe: level of qualifications *d* for explicit training, age *a* for occupational experience. The limitations of these indicators are clear in the light of the considerations presented here. As the study of these phenomena progressed, the research in question also brought to light the current shortcomings of information systems concerning skills.

The acquisition of skills - and this is in line with its vectoral character - calls for the incorporation of methods that the quantitative approach tends to set aside. Simple variables need to be combined in order to construct multidimensional variables.

In quantitative studies of interfaces between the education system and productive bodies, the difficulty arises from gaps in information as well as from the lack of connection between the information that is already available. When data are presented, the various methods are governed exclusively by their own "internal" rules. This means that employment statistics are based on employment policies, education statistics by education policies, and so on. If the use of the data for distinct purposes is not borne in mind, it is difficult to use them in conjunction with each other.

Conclusion: tautological effect of statistical information systems

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[7]   These studies are the direct antecedent of the EDEX project (TSER programme).

Only observed phenomena can be handled in a transparent manner. The fact is that you can study only what it is possible to study; topics of study are determined by available data. Statistical information systems thus delimit the scope of observable phenomena. Outside this, the collection of data does not always comply with criteria that meet the needs of scientific analysis.

Indeed, in most cases, statistical information systems are devised in relation to major policy fields (education, employment, etc) and are separate from each other. This results in a tendency to tautology in analysing the implementation of policies by collecting only information about what is "expected" and what tends to confirm "what was expected". There is therefore a risk of being misinformed about the real impact of policies in their actual implementation.

There is a clear need for investment in research services in a dual sense: on the one hand, to promote synergies among existing information, since this would make it possible to devise indicators that were more consistent with the complex task of identifying skills; and on the other hand, to find new systems and tools for collecting information.

Social change precedes its quantitative assessment. Its study therefore requires changes in statistical information systems. Management of the changes we have covered will be more and more difficult if there are statistical gaps. Phenomena such as the development of interfaces between training and employment could thus fall into a "black box", where too much information obscures the overall picture.

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