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What do we know? Measuring knowledge, skills and competences in the labour market

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CEDEFOP assists the European Commission in encouraging, at Community level, the promotion and development of vocational education and training, through exchanges of information and the comparison of experience on issues of common interest to the Member States.

CEDEFOP is a link between research, policy and practice by helping policy-makers and practitioners, at all levels in the European Union, to have a clearer understanding of developments in vocational education and training and so help them draw conclusions for future action. It stimulates scientists and researchers to identify trends and future questions.

CEDEFOP's Management Board has agreed a set of medium-term priorities for the period 1997-2000. They outline three themes that provide the focus of CEDEFOP's activities:

- **promoting competences and lifelong learning;**
- **monitoring developments in vocational education and training in the Member States; and**
- **serving European mobility and exchanges.**

The opinions expressed by the authors do not necessarily reflect the position of CEDEFOP. The *European Vocational Training Journal* gives protagonists the opportunity to present analyses and various, at times, contradictory points of view. The Journal wishes to contribute to critical debate on the future of vocational training at a European level.

Interested in writing an article ... see page 106

Information for information's sake ?

If you don't know this is the information age. 24 hours a day information is sought, discovered, gathered, processed, used or misused, shared or hidden.

This issue of the Journal looks at the issue of the information needs principally of employers, but also of individuals. It also looks at how the vocational education and training system provides the signals to meet those information needs in the labour market.

Information has always been valuable. Arguably, the difference is that today the stakes for society at large are higher. The right, or wrong, information today can have repercussions across the globe - and, what is more, in an instant.

Access to information is greater than ever. Barriers to its exchange have broken down. Furthermore, the increased access to information creates the need for new skills. Firstly, 'demand competence', the ability to sift through the mass of information to find what we want to know. Secondly, 'receiver competence', the ability to handle the information that we receive, interpreting it into something understandable, relevant and useful.

Vocational education and training systems are part of the information business. Their role is to impart and share information, to help to transform and translate it into knowledge skills and competences of value to the enterprise and the individual. The qualifications system is about providing information in an easily understandable form about an individual's skills and competences

Firms need information to manage efficiently the skills and competences of their workforce. For individuals a lack of evidence of their abilities, for example a lack of qualifications can mean the difference between having a job or not.

Given the high stakes people, understandably, want more information. However, the information available does not always tell us what we need to know. In this sense the demand for information is rising faster than its supply, arguably making us more ignorant and increasing the potential for making mistakes.

But has what people really *need* to know changed, or is it a case of demanding more information because it is available? Is there a difference between what we need to know and what we *want* to know? Do we simply want more information for information's sake?

Arguably, employers need, and have always needed, to know if someone is the best person for the job. There are always implied conditions to this, such as the reliability, potential, loyalty, and trustworthiness of the individual. In times past, particularly when labour was scarce, a brief interview, or a recommendation from a reliable source was often enough. For some jobs, particularly, skilled, clerical and managerial, qualifications were important, but their lack not necessarily a bar to employment.

But higher levels of educational attainment, changes in work organisation, demands for higher quality, globalisation, and technological advance have changed job content. Employers are more demanding and want to know more about potential employees. As Shackleton points out in his article, employers have changed their recruitment methods because they are seeking different types of skills and competences from those sought in the past. Now they want more information on personal characteristics, which are not easily assessed, to choose the right person for the job. Formal academic qualifications are a guide and essential for labour market entrants, but they are by no means sufficient

The article, by Eliasson and Vikersjö shows how one multinational, *Electrolux*, based in Sweden, has developed the use of its own internal labour market to provide career opportunities for its employ-

ees and for talent sourcing. By making job openings visible throughout the organisation and the definition of more distinct and varied career paths the firm aims to generate the skills and the information about its employees to optimise the internal allocation of competence. This is further evidence that employers are developing sophisticated systems to find the best person for the job.

The role of formal qualifications and certificates in informing employers about the competences and capacities of individuals is examined in this issue. Qualifications are important and better qualified people have better employment prospects. Eliasson and Vikersjö point out that despite the operation of an internal labour market in *Electrolux,* recruitment to their management programme is effectively limited to graduates, as people below that level are not believed to have the required potential. This use by employers of qualification *levels* as a filter in their recruitment practices is pointed to in the article by Mallet. His research provides evidence that that employers are responding to the increasing number of more highly qualified labour market entrants by raising their skill requirements, not necessarily because they need a better skilled workforce but because better qualified manpower is more generally available.

The relationship between qualifications and the skills required by employers is addressed in the article by Merle. He states that, certainly in France, employers are more pre-occupied with the level of qualification rather than the skills that it is supposed to represent, and that there is a growing disassociation between the process of learning and qualifications. He argues that reforms to qualifications should be directed to towards the validation of work experience, and making them obtainable through different routes.

This is echoed, to some extent, in the article by Muñoz. He argues that despite the considerable efforts made to develop a system to take account of their skill needs, Spanish employers have little confidence in the relationship between certificates and skills, and he points to evidence of the use of pre-selection in the initial training system through training placements for young people. Muñoz also points to the introduction of certificates of proficiency which are designed to act in the continuing vocational training system as the counterpart of initial training qualifications. Interestingly, he points out that an undeclared aim of this reform was to provide several million workers with some evidence of skills.

Consequently, for those without qualifications employment prospects are poor. However, evidence suggests that employers do not regard qualifications as providing information on what people can do, but rather an indication as to what they are *capable* of doing.

Merle's article looks at the need for a closer link between work experience and qualifications. Some of his ideas are reflected in the methods to assess non-formal learning considered in Bjornavold's first article. He gives a number of reasons for the growing interest in validating and accrediting non-formal learning. He looks at the limitations of the different methodologies that currently exist, not least the type of "knowledge" that we wish to assess. In his second article, Bjornavold puts forward a strong case for institutional support for assessments of prior learning in order for them to be widely understood and accepted.

The developments in accreditation of non-formal learning can be seen in part as a response to the growing information demands of employers. Accreditation of non-formal learning can improve job prospects by enabling people to provide some evidence of their skills to employers. In addition, it can also help firms increasingly interested in the potential for more effective and efficient allocation of the competences of their workforce.

If the information demands of employers have increased so too have those of individuals. Schober in her article looks at the vital role of vocational guidance for individuals. Not only has high unemployment made it harder for young people to make the right decision for their careers, but the increasing possibility of having to change careers means that adults too need to be in a position to make informed decisions. Finally, Straka looks at the motivation behind individuals undertaking self-training.

In conclusion, it can be argued that employers essentially *want* more information, but to respond to more demanding and sophisticated questions, to tell them what they *need* to know. Competition is more intense, not just between goods and services but between people. We want to know more about intangible assets and qualities. We want to know more to be able to use more effectively and efficiently our resources. We want to know more about the career paths that will provide stable employment and a good salary.

It now appears incredibly naive that in the early post-war period that many saw manpower planing as providing sufficient information for our needs and had confidence in forecasts for the numbers of workers required for the next five to ten years. Time and experience has shown that this is no longer feasible in an unpredictable world. In this way more information has made the world more complex. The explosion of information has laid waste many of our previously held assumptions. We are more informed, but have also realised that there is much more to learn. We therefore are, or at least feel, relatively more ignorant. More information has made us more sceptical and more insecure. We require more evidence on more complex issues to be convinced. The pressures of competition have left little margin for error. We want to know more to reduce the risk.

However, it is not clear what translates information into intelligence, for example, labour market intelligence. The current vocational education and training information system with its reliance, possibly over reliance, on qualifications obtained through formal education and training courses and pathways is clearly not seen as sophisticated enough to meet the information needs of the labour market. Bjornavold calls this the "information dilemma", stating that despite of the growing importance of learning and knowledge, the quality of information available to those (individuals, enterprises, public bodies) making choices on the use of human capital is questionable.

However, the role of qualifications in meeting employers information needs remains extremely important. This is not least because the resources required, often non-financial, to develop and operating systems to generate and acquire information about the skills and competences of people can be very high.

The evidence is that employers are using qualifications as filters and indicators. Arguably, given the pace of changes in work organisation and technological change, despite the constant criticisms of employers that young people leaving the education and training system are unprepared for the world of work, the *capacities and potential* of an individual are more important for an employer to know, rather their current skills and competences. Perhaps vocational education and training curricular, qualifications and assessments of non-formal learning should increasingly look to test these qualities, as perhaps at the end of the day this is what employers want to know and of what people need to provide evidence.

The nature of the change in the demand for information is, therefore, not so much information for information's sake, but more information to make informed decisions in order to make fewer mistakes. But the more we know, the more we realise we do not know and the more insecure we become, to overcome this we seek more information. Thus the information demand spiral continues. Who knows where it will end?

Steve Bainbridge

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Labour market trends and information needs: their impact on personnel policies

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Employers are seeking different types of skills and competences from those in the past. In particular they are seeking evidence of personal characteristics which are not easily assessed. The selection criteria used by firms has been influenced by changes in the labour market, in response employers have changed recruitment channels and selection techniques.

Recruitment and selection

Three elements of employer selection systems can be distinguished: selection criteria, recruitment channels and selection techniques. Changes in the labour market have influenced the selection criteria identified by firms. Employers have coped with the changing requirements by altering the recruitment channels used to attract individuals with the right skills. Selection techniques have also undergone important changes, as new ways to identify required competences have emerged.

One common feature across the European Union is the rising level of educational attainment and qualifications of young labour market entrants. In the United Kingdom this has been especially dramatic in relation to higher education, where the proportion of the age group graduating from universities has doubled in less than ten years. This has perhaps inevitably led some employers to assume that there has been some slippage in standards. It has certainly increased the number of potential job applicants in many fields and has thus led to the use of more sophisticated screening of graduate entrants: interviews, extra testing and attendance at presentations and selection centres are becoming more common (Industry in Education, 1997). Employers are using multi-tiering, embarking on "second-tier recruiting by snapping up graduates who, until the expansion of higher education, would probably have been recruited directly from school" (Merrick, 1996, p.9). There are also major concerns across Europe about educational provision being too academic to match employers' requirements, and neglecting managerial and supervisory skills (European Commission Study Group on Education and Training, 1997, p. 70). As a result, selection criteria have undergone modification. The importance attached to requirements other than academic qualifications, such as work experience, illustrates this trend.

On the other hand, demographic changes are also affecting recruitment practices, particularly in the service sector. Historically, most interest has concentrated on initial entry to the labour market. However, the proportion of young people in the population is falling across Europe (ibid. pp. 38-9). Rising educational participation means economic activity rates for the younger age groups are also falling (Ellison et al, 1996). To offset the effects of the demographic downturn, more firms are implementing practices aimed at recruiting from other groups, such as mature workers, women returners, and perhaps ethnic minorities which have previously been discriminated against. Such targeted recruitment has been stimulated by equal opportunities policies in a number of countries. These policies typically allow employers positively to encourage applications from groups under-represented in their workforces (Paddison, 1990).

Other developments have influenced employers' requirements. Recent technological advances have created a need for conceptual knowledge, systematic thinking, 'intellective skills' (eg. abstraction) and teamwork rather than repetitive manual manipulation (Frenkel et al, 1995). In addition, the share of the ' knowledge occupations' - managerial, professional and technical occupations - has increased considerably. In the UK, for example, such jobs are expected to represent almost 40%

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of employment by 2006. Furthermore, skill demands within occupations, in response to new technological and organisational structures, are also said to have increased. The 1996 Skill Needs in Britain survey revealed that 74% of employers thought the need for skills in the average employee was increasing (Department for Education and Employment, 1997).

The numbers of sales and clerical workers have also increased, and this in turn has created a premium on some specific skills in the labour market. The current emphasis on quality as a competitive advantage has led to the greater importance of customer service. As a result, interpersonal skills have become one of the major requirements when selecting to all types of jobs, but particularly those in the growing services industries. Globalisation, however, has not caused as many changes in skills requirements as some might have thought - with the partial exception of language skills (Keenan, 1991).

Skills and competences requirements

Variations in the skill requirements of employers are to be expected across industries, occupations and organisations. However, it is generally agreed that employers are placing more importance on candidates' personal qualities and attitudes than in narrower skills and qualifications (Grootings, 1994). This is creating increasing information difficulties for firms, as the key characteristics they seek are the most difficult to measure objectively. Meanwhile the 'hardest' data - academic certificates awarded and qualifications achieved - are available for those achievements rated as being of less immediate relevance. Work has been conducted across the European Union in trying to measure and certificate vocational competence directly, but the results have not been very impressive (Wolf, 1994). One problem is the conflict of interest between employees who want the transferable competences they achieve at work recorded and certificated, and employers who fear this will make workers more mobile and lead to loss of expensively trained staff.

Employers are increasingly selecting candidates who show initiative, motivation, persistence, social skills and willingness to learn. Changes in the selection criteria have contributed to changing employer perceptions of the education system. Even in those occupations where academic qualifications are regarded as very important, they have become more of an screening device. They are viewed as signalling personal qualities rather than acquired knowledge. Although employers doubt that personal qualities such as initiative, motivation or communication skills are fully developed through formal education, qualifications have become a more important indicator of *learning capability* and *motivation to learn*. This is illustrated by the importance attached to degree class or grade-point average by many recruiters, and the rather lesser importance given to degree subject. In a recent survey of UK graduate recruiters (Performance Indicator Project, 1996), degree class was found to be the most relevant selection criterion, being chosen by 84% of employers. In contrast, course content was chosen by less than three quarters of employers. This is not to deny that degree subject is still considered as very important in a limited number of areas such as engineering, technology and computing. In these fields, technical skills are of course still very highly considered, and they are likely to remain paramount in the future.

Results from the Employment in Britain survey show that there has been a considerable increase in tasks requiring 'people skills' - good interpersonal communication, empathy with others and a pleasant manner. More than half of employees now deal with customers or clients, one in five are in caring positions and more than a third hold jobs with some degree of responsibility for other people, be it co-ordinating or supervising (Gallie and White, 1993). As a result, employers and employees are becoming more aware of the importance of these social skills.

One of the results of this shift in emphasis is the importance attached to work experience, which allows employers to judge whether individuals possess skills other than those attested to by formal qualifications. This may be one factor lying behind the rise in the proportion of temporary contracts and other means by which employers can offer 'trials' to potential employees. It led the recent Dearing Committee on higher education

in the United Kingdom to recommend that all university students should be offered some element of work experience during the course of their studies (National Committee of Inquiry into Higher Education, 1997).

Recruitment channels

European labour markets have typically displayed higher average job tenure, and lower turnover, than that of the United States (Adnett, 1996). However, recent years have seen a fall in job tenure (at least for men) and a higher degree of labour turnover and mobility. There has therefore been an increase in recruitment activity, which some have also seen as an indication of the decline of internal labour markets, where employees are recruited at an early age for lifetime employment, progressing through internal promotion (Manwaring, 1989). In turn this may be a consequence of the decline in monolithic state industries and the increase in the relative importance of small and medium enterprises with a shorter average lifespan. It also reflects the fall in unionisation and union influence which has occurred in most European countries (OECD, 1997): unions have typically sought to impose hiring and firing rules which favour internal labour markets.

Recruitment involves search by employers and potential employees. Such search relies on both formal and informal information networks. The former include recruitment channels such as the press and other mass media (including such recent developments as the Internet), the public employment services and private employment agencies. Use of these different channels varies from country to country. For instance use of newspaper advertisements seems a more fruitful source of employment in the UK, Finland and Holland than in Italy (OECD, 1995, Russo et al, 1996), while the use of private employment agencies - particularly for higher-level jobs - is much more developed in the UK than in France and Spain, where the public employment service was until recently an effective monopolist. Employment legislation, geographical factors and media ownership and regulation may be significant factors in determining the mix of formal recruitment channels, as well as more obvious influences such as the industrial and occupational structure of employment.

An interesting common feature of recruitment in Europe's labour markets, too often unremarked, is the continuing high level of dependence on informal methods of recruitment. Such informal recruitment channels involve recommendations by families and friends, and direct approaches to or from employers. For example, the UK Labour Force Survey shows that in Spring of 1995 31% of newly-recruited employees found their jobs through someone who already worked with the employer (our own calculations). A roughly comparable figure for Finland in 1993 was 19%; for Italy in 1992 a staggering 63% (OECD, 1995, p. 122).

Evidence from Holland indicates that there is a cyclical pattern in the use of informal recruitment methods, with greater reliance being placed on them during periods of high unemployment (Russo et al, 1996). But there does not seem to be any marked tendency for reliance on such methods to decline over time. This might be considered surprising, given the increased sophistication and professionalisation of human resource management techniques. However, it is compatible with the growing importance of personal qualities and interpersonal skills noted earlier. Potential employees whose qualities are known personally to the employer clearly have an advantage over those whose only known characteristics are on paper. Employers may quite rationally prefer recommendations from existing employees rather than relying, for example, on referrals from the public employment service. Such services will understandably often be more concerned with reducing their caseloads than in providing the best possible applicants to employers.

Employers may indeed enjoy several advantages when using these informal recruitment channels. It is claimed that they reduce the uncertainty of recruitment; reduce recruitment costs and production costs during the hiring process (the duration of vacancies is lower); and provide a comprehensive profile of the potential employee. In other words, employers get more information, more cheaply. A sur-

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vey of UK employers' recruitment needs showed that, particularly when recruiting young people, employers were beginning to favour informal recruitment channels to an increasing extent, because they "offered clearer indications of the enterprise and determination of the type of candidates they were seeking" (Industry In Education, 1996, p.8). Another advantage of these informal recruitment channels for both the employer and the individual is that they provide more information about the firm to the potential employee. This is central to another mechanism used by firms to overcome the increasing difficulties of getting good applicants: providing 'signals' to recruits about the organisation. Candidates equipped with more useful information are better able to choose the right organisation for themselves - in other words, the organisation where they are most likely to fit in. In this view, the screening effect is present on both sides of the employment equation.

The use of formal or informal recruitment channels is associated with particular organisations and market structures. Small firms, with no specialist interviewers and recruiters, and less able to spread recruitment costs, rely more on informal channels than large firms, with specialist personnel staff and economies of scale in recruitment. However, the greater costs and difficulties of carrying out formal recruitment procedures are not the only reason why small firms choose informal channels. The use of informal channels also reflects variations in the selection criteria depending on firm size.

In particular, personality characteristics - such as honesty and integrity - and interest in the job are given relatively greater importance in small and medium-size firms. They are often considered as important as ability, aptitude or attainment (Bartram, 1995). Informal recruitment and selection procedures are seen as the most effective means to identify these criteria. Informal channels are more widely used in the private sector than in the public sector, where public concern for equal opportunities policies, as well as traditional bureaucratic rules, has encouraged the use of more formal procedures.

There are also differences depending on the type of jobs required. Informal channels are very important in the recruitment of manual and white-collar workers. It has been claimed that the "major adaptation to the local labour market will be through channels of recruitment, and not criteria and procedures" (Wood, 1986). There seems to be a greater use of informal channels in high unemployment areas. This partly explains the importance given to informal channels in countries such as Spain, where "personal relationship is the main job search method used by those who are not on unemployment benefits on the one hand, and by blue collar workers, on the other hand" (Molto et al, 1994). This is often seen as a way to improve industrial relations within firms. Friends and relatives are particularly important when entering the labour market. This is illustrated by the fact that unemployed people in Spain in search of their first job are more likely to use personal relationships than unemployed with previous work experience.

However, the downside of this is that such procedures clearly favour 'insiders' at the expense of 'outsiders' and may thus perpetuate inequalities between, for example, men and women or ethnic majorities and minorities. Apart from the injustice involved, this may be costly to firms in the long run if whole groups of productive workers cannot compete on an equal basis for jobs.

Selection techniques

Study of medium and large scale organisations in the UK shows that while application forms and face-to-face interviews are still the most frequently used selection techniques, there has been an increase in the use of other methods (Bartram 1995). Literacy and numeracy tests and psychological and aptitude tests are becoming more common, particularly amongst larger firms. There has been a marked increase in the use of tests of all descriptions over the last decade. This is particularly the case in management selection. Ability and aptitude tests are used at all levels, whereas personality tests are more common in management selection.

Firms of all sizes continue to rely heavily on interviews. Over 90% of employers in small firms, for example, interview applicants. In contrast to large firms, em-

ployers in small firms take up references most often by phone. Another distinctive feature is the use of work trials. About half of firms use some form of work trial, lasting from a few days to a few weeks. This is used as a probationary period with final selection only at the end of the period. Work trials are more likely to be used by those employers not making intensive use of interviews, as they represent an alternative screening device. They are seen as providing a mix of information about personality, motivation, interest and ability. Although the use of tests by small firms is still well below the average for large firms, their use of work samples, literacy/numeracy tests and ability tests is nevertheless considerable (ibid).

Promotion and career development

Changes in the business environment and in work organisation, including downsizing and de-layering, have affected not only the criteria for promotion, but also the number of promotion opportunities. Among those affecting the requirements for promotion are the increasing competitiveness of the business environment and need for organisational change. These pressures have caused a move from length of service and attitudinal criteria towards performance and behavioural criteria. Firms have reacted to these new information needs and tried to produce performance indicators. New appraisal systems have been designed. Unsurprisingly, performance has proved a great deal more difficult to measure than length of service.

Rationalisation, low voluntary wastage and flatter organisational structures have all affected the nature of promotion and career development. De-layering, facilitated by advances in information technology, has not occurred to the same extent in the public sector and in the private sector. In the public sector across Europe, strong hierarchical structures still prevail. Nevertheless, despite variations across sectors and industries in the impact of these changes, there has been a general move from narrow upward mobility towards lateral mobility, staff development and performance-related pay. In this sense, some authors have claimed that rewards systems have been designed as a trade-off for promotion. These trends have led to new information requirements by firms for the implementation or improvement of policies. However, not all commentators agree with the claim that opportunities for career progression have decreased. It is claimed that between 1983 and 1989 the number of managers in the USA grew at twice the rate of the workforce and the average number of employees supervised by a manager fell from 8.4 to 6.9 (Benson, 1995). This supports the earlier observation about the increased share of managerial jobs, which should tend to increase the number of higher status opportunities, even if less are offered as internal promotions.

In this context, employee appraisal systems (often euphemistically described as staff development reviews in order to minimise hostility), have an important function to serve. They have been defined as formal processes for observing, collecting, recording and using information about performance of staff for decision-making purposes. Decisions about promotion and career advancement are increasingly taken on the basis of performance, as commented earlier. The organisational need to obtain speedy performance change has also affected rewards systems. There has been a move away from rigid systems linked to job evaluation procedures and grading (typical of large, heavily-unionised firms - and, as observed earlier, unionisation has been falling throughout Europe) towards more flexible ones, indicated by the popularity of incentives, bonuses, merit, profit-sharing and share options. Employers need more accurate information on performance at the individual and company level. A survey by the Institute of Personnel Management showed that 82% of companies in the UK had appraisal schemes in 1986 (Randell,1989). Around 40% of the companies were using them for performance-related pay purposes. Among other trends identified were the increasing application of the schemes to non-managerial employees, and a greater emphasis on measuring current rather than future predicted performance. A different survey, carried out in 1995, showed that 32% of firms were using appraisal systems for salary increases, while 25% were using

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"Changes in the business environment and in work organisation, (...) have affected not only the criteria for promotion, but also the number of promotion opportunities. (...) These pressures have caused a move from length of service and attitudinal criteria towards performance and behavioural criteria. (...) Unsurprisingly, performance has proved a great deal more difficult to measure than length of service. The changing nature of work organisation and job content has led to a greater emphasis on the knowledge of people rather than jobs. This coupled with the increasing focus on performance, has facilitated the emergence of competence-based systems (...)."

them for one-off bonus payments (Thatcher, 1996).

Given that performance has become a crucial criterion, we need to comment on firms' efforts to measure it. The first aspect concerns *what* is being identified. There has been a trend away from quantitative target-setting procedures (after evidence showing the reduced applicability of techniques such as management by objectives and goal-setting) towards more qualitative, behavioural objectives, emphasising development over control. A second element refers to *who* is measuring. In order to improve the accuracy of measurements, there has been a move towards 360-degree and upward appraisal away from the traditional system of managers appraising subordinates. 360-degree appraisals are being implemented mainly in large organisations appraising a selected group of managers. This system incorporates input from everybody within the organisation, such as peers, subordinates and internal customers.

The changing nature of work organisation and job content has led to a greater emphasis on the knowledge of people rather than jobs (Iles, 1993). This coupled with the increasing focus on performance, has facilitated the emergence of *competence*-based systems (CEDEFOP, 1994). Competences are defined as either observable skills and abilities (UK) or underlying characteristics of an individual (US) related to effective performance. 'Competence frameworks' or 'competence profiles' are lists of skills that employers wish to reward, because of their perceived association with high performance levels. They are used for different purposes, such as selection, performance management, rewards systems (competence-based pay), assessment of potential and so on. Although equal opportunities legislation across Europe partly explains the introduction of competence-based systems, there have been claims that they remain open to bias. It is claimed, for example, that women are less likely to be perceived as displaying leadership (Strebler et al, 1997). There have also been criticisms about the subjectivity of assessments of potential based on competence profiles, via for example assessment centres (Wallum, 1993). These are all indications of how difficult is the measurement of competences in a satisfactory manner.

Several methods have been used to identify competences and, in effect, those who are more likely to be high performers. The focus in the US is on the behavioural competence method. In contrast, in the UK, the measurement efforts have been more concentrated on tasks and objective outcomes. We can place in this context the Management Charter Initiative (MCI) and the NVQ (National Vocational Qualifications) movement (Jubb and Robotham, 1997). MCI and American models have been criticised for their generic and static nature. It has been claimed that current rates of change in the workplace require more organisation-specific and future-oriented models. A number of specific techniques have been designed to measure competences: behavioural activities and exercises, psychometric testing and competence questionnaires. However, problems with measurement and identification remain acute.

Summary

We have argued that today's European employers are seeking different types of skills and competences from those sought in the past. In particular, firms are seeking evidence of personal characteristics which are not easily assessed. Formal academic qualifications are necessary for labour market entrants, but they are by no means sufficient as employers adopt various strategies to increase their supply of relevant information about potential recruits. Job applicants need to bear this in mind in determining their own search behaviour, taking all opportunities to 'network' and to acquire work experience.

Once employees have been recruited, today's employers need to find effective ways of measuring performance in order to reward and encourage behaviour which is consonant with the firm's goals in a dynamic and unstable environment.

These themes are explored in greater detail in the other contributions to this issue.

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Recruiting in a European Company

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Human capital is a scarce factor that has to be efficiently allocated and managed within the corporation. Its value to the firm and to the holder depends on its allocation. This article illustrates the specific problems of a large multinational corporation in a mature industry, but attempts to identify more general implications for a broader range of production.

Introduction

The future business success of a modern manufacturing company increasingly rests on its people in their capacity as carriers of competence. Hence, the recruiting, internal management and allocation of human embodied competence are rapidly becoming the dominant management concern.

A large multidivisional company innovates and learns from many different sources. Upgrading its competence base, therefore, is very much a matter of the efficient internal diffusion of knowledge throughout the organisation. The tacit nature of critical knowledge again makes this a matter of the efficient internal reallocation of people with competence. The increasing blurring and diversity of both job specification and the ways in which an individual´s competences developed through on-the-job learning makes the allocation of competence a demanding management task.

The more simple and standardised the competence, the more locally available the skills needed in the market and the more important competence development through hiring and firing becomes. The internal allocation of funds for educational investment, hence, is biased in the direction of efficient learners, namely staff who are already well educated and well trained.

This article presents, in concrete terms, the competence and personnel management problems of a well known European firm manufacturing a broad range of familiar products of the engineering industry, the Swedish *Electrolux* corporation. It illustrates the specific problems of a large multinational corporation in a mature industry, but attempts as well to identify which parts of the Electrolux experience carry more general implications for a broader range of production.

Efficient allocation of human capital

Industrial production among the OECD countries is rapidly shifting its competitive focus from manufacturing technology, as embodied in machine capital, towards industrial competence embodied in human beings or teams of human beings. A competent team (Eliasson 1990) is the most appropriate characterisation of the modern industrial firm, that has to excell in sophisticated recruiting of talent and skills and also in the internal development of competence. In such a team, or rather the hierarchy of competent teams that makes up a firm, learning is organisational through staff turnover and experience gained on-the-job, throughout the career (Eliasson 1996). The organisation, or structure of people with competence, hence, becomes an important part of the knowledge capital of the business, a competence capital that is traded (Eliasson 1991) in the internal and external labour markets, as well as in entire teams in the market for mergers and acquisitions.

This ”new” way of looking at the firm, forced by increased global competition and rapidly shifting technology, is also a formidable challenge for firm management, which has to reorient its attention to the human resources side and be capable of cleverly managing the great variety that characterises human capital.

Human capital is a scarce factor that has to be efficiently allocated and managed within the corporation. Its value to the firm and to the holder depends on its allocation. Hence, internal competence development in a firm is as much a question of reallocating the existing knowl-

edge base to changing needs and circumstances as it is a matter of individual learning. Swedish *Electrolux* corporation, currently the world´s largest developer and manufacturer of white goods, closely trailed by Whirlpool and General Electric of the US, carries a general interest by being a large and succesful company in a mature industry, with a potentially vast internal international labour market .

This article looks at the extent to which this internal labour market has been, or can be used both for offering career opportunities for the employed and for talent sourcing to enhance the entire competence base of the company through internal reallocations. The article has been tailored to answer such questions, and generalisations are, of course, of limited value when we come to small firms or firms predominantly serving local markets. Some experiences of Electrolux, nevertheless, are of a general interest, for instance in the changing nature of jobs and competence development and the relative importance of sourcing of competence over internal and external markets for the organisation of the firm.

Globalisation from a European base

Electrolux was founded in 1919, and has exhibited a spectacular success history of growth following the divestiture of its US subsidiary in1968. This freed initial resources for a very rapid growth in Europe through acquisitions, in all some 180 since the early 1960s, including Zanussi in 1984. Electrolux became Europe´s largest white goods producer in 1968. With its headquarters in Stockholm, Electrolux is composed of some 600 subsidiary companies, distributed over all continents and 60 countries. It has long had a reputation for dynamic and competent management and a career in Electrolux has sometimes been called the “best management education in Europe”. It currently employs some 110 thousand people. Sales amounted to 25 billion DM in 1996.

Electrolux management realised earlier than most large European companies that international competitiveness could only be maintained through an orderly realisation of the economies of scale made possible by globalisation of production and marketing. The gradual reduction of restrictions to trade, forcing previously protected local producers to improve or shut down, made this move urgent. From being a Swedish based export company in the early 1970s, and a small competitor among the European white goods producers, by the late 1980s Electrolux soon became a European producer with a European home market. With the acquisition of White Consolidated Industries of North America (including the Figidaire and Westinghouse trade marks) in 1986, Electrolux became a global competitor with a strong prescence in Latin America as well as in Asia. Europe is, however, its dominant base, with 65 percent of the employment and 58 percent of production.

By what principles does Electrolux structure its recruiting, and its internal career system and competence development to meet global challenges from a European base?

Key factors in business development

An advanced international firm based on unique technology and close customer contact can no longer be competitive through exports alone. The local competence base is too narrow. Volume shipments over long distances and the consequent inventories are costly and, above all, local market adaptation requires close customer understanding.

Hence, the modern corporation operating in global markets requires a global managment and well developed systems for the diffusion of competence and information throughout the organisation. Technology, furthermore, is developed in many places within the firm and also needs to be diffused efficiently.

Since competence is embodied in human beings or teams of people the critical *allocation of competence is achieved through the movement of people with competences*, notably executive, functional management and specialist people. In a global corporation this allocation

“(...) the modern corporation operating in global markets requires a global managment and well developed systems for the diffusion of competence and information throughout the organisation.”

Table 1
Mobile comptetence capital; categories of people

level 1	The executive, or top competent team, consisting of individuals most of whom should reach their positions through an internal and increasingly global and cross functional career
level 2	Layers of higher managment and directors, altogether some 500 people within Electrolux
level 3	Project and process leaders, almost always with an academic (engineering or business) degree, being part of the career pool, currently a small, but rapidly growing group of people in Electrolux
level 4	Middle management, functional and departmental heads, altogether more than a thousand people in Electrolux
level 5	Supervisors, specialists and other salaried staff
level 6	Machine operators,mechanics and special service staff
level 7	Skilled workers
level 8	Unskilled workers and other staff

"The more competence capital embodied in an individual, or a team of individuals, the more important it becomes to have that competence capital efficiently allocated and constantly developed within the organisation."

means global recruiting and movement of people.

Global sourcing of competence within the organisation, furthermore, becomes a strong competitive advantage if it can be effectively - meaning well-structured, but not necessarily formally - organised. Above all, the use of internally mobile competence makes it possible for the organisation to combine the benefits of increasing returns associated with centralisation and standardisation with the flexibility associated with decentralisation. A key factor behind the local management freedom allowed within Electrolux has been an efficient central performance (profit) control. This is also the way other large companies have moved since the 1980s (Eliasson 1996).

It should be observed, however, that the mobility we are discussing is the allocation of competence and of people as carriers of competence. The more competence capital embodied in an individual, or a team of individuals, the more important it becomes to have that competence capital efficiently allocated and constantly developed within the organisation.

Competitiveness through job rotation

In general Electrolux looks at competence development and job rotation as a significant means for future competitiveness. And this principle applies at all levels in the corporation.

In discussing this mobile competence capital we can distinguish between a number of categories of people, as illustrated in table 1.

These groups differ widely in educational background, competence and flexibility. We can make four observations :

❑ mobility, notably international mobility, drops drastically below category 3;

❑ mobility is usually restricted to people who significantly contribute to the transfer of knowhow on a new allocation and learn and develop from a varied career;

❑ jobs that do not carry a potential for competence development are rapidly disappearing. They usually involve routine work that is increasingly automated;

❑ the management rule increasingly applied in both large and small corporations is that if you are not the best,or second best at something you outsource the job in the market to a more able supplier. If there are better producers in the market, a firms attention and resources are best focused on activies where they are the best. This is simply an application of the principles underlying Coase´s (1937) famous theory of the firm. The more intense global competition in the white goods market the more systematically Electrolux has had to apply this principle. Jobs that cannot be upgraded to excellence through internal competence development or skilled recruiting are automated or outsourced. In the latter case they are also separated from the Electrolux organisation of internal competence development.

The apprentice worker

Electrolux, like most firms in the mature engineering industry in Sweden, once had a well developed system of apprentice

jobs and even industry schools operated by the firm, designed for the task of guiding young students from school to the labour market, training them and selecting promising young workers for Electrolux factories. These workers then often spent their entire working life in the same firm. Working life has, however, changed dramatically since then, not just because of technological change and the consequent reorganisation of work, but for many other reasons, not least the fact that both production and firm organisations have become global.

Machine operators and engineers have substituted for earlier specialist skilled workers. Swedish education policy, furthermore, during the 1960s and 1970s a sequence of school reforms alienated school and industry[1], a policy that is now being reversed. The apprentice system, moreover, is very difficult to operate at the workers´ level in a multinational corporation. Hence, one sees little of the unique craft skill based production in the large multinational corporations. Craft skill based production, on the other hand, is more typical of the small and medium sized companies serving both local and global markets with sometimes very similar products, some of which are quite sucessful, despite investing little in R&D investment and having a workforce with a formal education much below the industry average[2].

There therefore tends to be rather low local and international mobility at the lower levels in table 1 one above. Recruitment of workers is mostly local from environments with no tradition of mobility and of individuals who lack the education and experience that facilitate mobility. The need to learn a new local language to communicate at the work place is a particularly high barrier to mobility.

The management career

While globalisation of firms tends to break up the apprentice system, the opposite is the case at higher levels, where the international management career can be seen as a very sophisticated form of an apprentice system or higher education (Eliasson 1996b) and part of the ultimate top level allocation of competence in an organisation (Pelikan 1989).

From level 3 and up international mobility is common and rising. It is increasingly encouraged and required to reach level 1 positions. As Electrolux wants to be able to offer a career opportunity to all talented employees, one can say that mobility is higher when it is considered an investment in learning by Electrolux management.

Most of the highly mobile career people have an academic degree and use English as their working language. English appears to be the universal corporate internal language and means of communication in international companies, including European multinationals. There are many advantages with this communication standard in business, but it creates a disadvantage for workers lacking the appropriate education to use English, and that disadvantage appears already at level four in the above table, and becomes increasingly prohibitive as you move down.

Electrolux considers itself very performance-oriented. In principle it does not regard a higher education necessary for top-level jobs. In practice, however, lack of educational background for most people means an insufficient platform for efficient continued learning on the job and through a career. Management trainee programs at Electrolux, therefore, restrict their recruiting base to young people with an academic degree. The probability of finding the necessary qualitites outside that group is considered too low.

Whenever the firm finds it to be of interest to itself and the individual to invest in an individual´s competence development we see mobility. Whenever the firm uses standard skills or unskilled workers, amply available in the local market, it usually hires locally rather than developing the skills internally.

The open labour market

An interesting separation of the market for competence is taking place into standardised tradable skills on the one hand, and people with a varied endowment of competences that are difficult to define, on the other. Standardised skills occupy the lower levels of the above table and

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1) Such school reforms were not being carried out, for instance,in Germany and Denmark which still have much more of the apprentice system in their manufacturing industries.

2) Like the heavy mooring chain production in Laestadius (1995) and the sucessful entrepreneurial community of Gnosjö in Sweden in Modeen (1994).

"The giant size of the corporation and its internal variety, however, means that it has now become necessary to develop internal labour market routines to facilitate the internal allocation of competence over the entire organisation, but without losing the important flexibility."

are as a rule readily acquired in the market. The other, more fuzzy portfolio of competences, dominates the upper end of the table. They are increasingly developed within the organisation or in the market, often as part of a management career. Such competences developed in a firm with a good reputation are in high demand in the market, even though the competence portfolio acquired as such is not as tradable as a whole, because its quality characteristics are in part specific to the firm, and in general difficult to ascertain. Recruiting becomes more costly and risky, and the standard employment and salary contract is not the best. Since the qualities of an individual can only be ascertained after a " period of inspection" (Hirschleifer 1973) a theoretical conclusion is that a career with partly bonus compensation and stock options is often the appropriate contract arrangement.

As a consequence of the changing jobs and external conditions, labour relations systems are also constantly changing within the firms. Some firms lead the development, others lag. But sooner or later all firms have to develop competence in dealing with their internal demands for competence. Electrolux prides itself with its informal management systems with a minimum of headquarter staff and bureaucracy. Due to its multicentral heritage Electrolux has been slow in developing formalised and centralised management procedures. The giant size of the corporation and its internal variety, however, means that it has now become necessary to develop internal labour market routines to facilitate the internal allocation of competence over the entire organisation, but without losing the important flexibility.

The *Open Labour Market* policy has, therefore, been formulated in response to such demands. Its primary aim is to make job openings visible throughout the entire international organisation through announcements. The next step will be to institute more distinct and varied career paths, offering a great diversity of management experiences for the career candidate to choose from on his or her own initiative. (On this Electrolux considers itself lagging other large international corporations). The ambition is, however, that together with a mandated career rotation of some 3 years, and not more than 6 or 7 years in each job, Electrolux will build a rapidly growing and richly varied competence capital.

However, this way of optimising the internal allocation of competence and internal competence development through varied management careers is often constrained through different national benefit systems, taxes and local cultures. Electrolux looks seriously at two internal problems; its insufficient internal mobility across national borders and a homogeneous culture. Both problems can be addressed to through redesigned career systems and changed trainee recruiting practices.

European recruiting

The career jobs offer constant internal educational opportunities. But these opportunities, to a varying degree, concern the development of competences that are unique to Electrolux. They are not fully tradable in the market but command high productivity within the team structure of Electrolux. In general it is the responsibility of the individual to take advantage of these opportunities.

Hence, paradoxically, at all levels the responsibilites for attending to and taking initiatives on human capital investments have been shifting from the firm to the individual. The internal training of career people, however, is funded by the firm, partly because they represent a select group of promising people that Electrolux wants to keep, but also because the costs for recruiting and training of new people are high and because the employees will normally prefer a different orientation of their education if they have to pay for it themselves. Their compensation and internal education packages are therefore tailored such that the individual will stay in the job. For the worker, on the other hand, normally embodying tradable skills and relatively low transaction costs from staff turnover, initiatives to learn and finance are his or her own responsibility.

Electrolux regards its internal culture as too homogeneous as regards sex, nationality and age. The *Open Labour Market* policy is designed to change that through

increased job rotation throughout the entire corporation. Electrolux´s customers are predominantly women. It is not considered efficient with such a customer base to have a male dominated management base.

Future top managers have to function across national borders, across functions and across cultures. Careers that were earlier functional are increasingly becoming deliberately organised across functions. The flattening of the organisation structure is supporting this. Vertical career opportunities are being reduced while horizontal careers are opening up. They change the power structure and offer much more interesting tasks.

Top management in a corporation has to mirror the market. A global corporation needs a global top management. But this is not easy to achieve. Mobility in the large European countries (France,Germany,Italy and Spain) is significantly lower than among the small Benelux and Scandinavian countries.

Even though Electrolux operates globally Europe will continue to dominate and constitute its "home market". Europe, however, will not necessarily be the dominant source of competence. This depends on what Europe is capable of supplying. Electrolux is rather orienting its recruiting and personnel management systems to reach the best sources of competence globally. For the time being, however, this global sourcing of competence is restricted to the upper management and specialist groups. Other staff and workers are predominantly recruited locally.

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Louis Mallet et alii

Certificates, skills and job markets in Europe

This research project first of all addresses the question of the gradual distribution of certificate-holders by reference to the term "skills" which takes account of both an individual's certification level and vocational experience, and not only his/her level of qualification. This means that processes of competition for access to employment can be envisaged, on the one hand from the much more general perspective of competition between generations, and on the other, as a problem of the wider distribution of qualifications and not, as is often the case, as a question of skill requirements.

Introduction

The rise in the level of education is a trend to be observed throughout Europe in general. It is essentially manifested by prolonged education for young people and spreads throughout the overall working population by a demographic process, each generation more highly-educated than its predecessor. This phenomenon can be measured by the average or structural rise in the certification level of the working population over the course of time.

This rise in the level of education may assume different shapes and forms in the various countries in view of the history of their education and training systems 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 general and vocational training, on the one hand, and the organisational arrangements for vocational training, on the other. However it is striking that in all Member States paper qualifications have so far essentially been acquired at the beginning of working life, with continuing training playing a relatively insignificant role.

Although the trend towards longer education is a general and continuous phenomenon to be observed in all Member States, it is nevertheless characterised, in particular in the more recent past (from 1986 in France, from 1990 in the United Kingdom, from 1975 in Spain), by changes and as an abrupt acceleration specific to each national system, the effects of which will 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 Member States have made considerable efforts to upgrade education and training policy, with the objective of contributing to economic development and adapting their workforce to the rapid advance of technology 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 call for a comparison of their long-term consequences for the functioning of the job market, mechanisms of access to employment and, over and above this, issues of a more general nature such as the efficiency of our economies and the foundations of social mobility.

The research project discussed in this article - which presents only the initial results - is positioned within the context of these

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general issues. The research was conducted in six Member States (France, Germany, Italy, The Netherlands, Spain and the United Kingdom) on a comparative basis. It examines the question of the gradual spread of certificate-holders throughout the economy and the processes of competition for access to employment by reference to the term "skills". Since this is a concept which includes vocational experience as well as certification levels, the processes of competition for access to employment can be considered not only within the much more general perspective of competition between generations, but also in terms of distribution of supply, and not, as is often the case, in terms of the demand for qualifications.

Changes linked to national issues

Our research project was first conducted in France where, from the very outset, it focused on the question of job renewal and the position of young people. It sought to explain the apparent paradox that the younger generations, having more highly-educated than their predecessors, have a lower level of job integration and are more severely affected by unemployment. This type of question on the access of young people to employment very soon leads to consideration of the problem in terms of general processes of competition between generations with different levels of certification. Leaving aside the classical approach to vocational integration 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, comparability or substitution between certification and vocational experience: the skills of people with a 40-year career ahead of them will develop even if their qualifications on paper remain stable.

The extension of the research to other Member States served to enhance the original field of investigation.

In view of the economic context of the period under review, the Spanish team was more cautious about the hypothesis implied by the initial results that the education and training system is not regulated by demand. Major developments on the economic, political and social fronts in Spain during this period highlighted its new special role within the European Community. In the opinion of the Spanish team, the process of the growth in supply was dictated by a certain need for the Spanish economy to "catch up" in terms of skills and was therefore more dependent on the trends within the employment system than was the case elsewhere.

Our British partner pointed out that over and above our underlying concern - the high levels of unemployment across Europe - 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 these two problems be explained by current trends in training supply?

As far as The Netherlands is concerned, the study's field of investigation must be positioned within the context of the debate on education inflation and reformulated as an alternative between the micro and macro levels of the relationship between training and employment. Doubts have been cast on growth in education and its - relative - economic success at micro level by questions on the effectiveness of the relationship at macro level. This clearly raises the question of the objective pursued by public education policies and the collective effort related to their funding. As our Dutch partner 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 and training policy - a point which provides further justification for an international comparison of research work on these questions.

The Italian team regards the relationship between the composition of labour supply according to the level of education and the composition of occupational structure according to level of training as one of the job market's mechanisms of adapting to the conditions of a post-in-

Our research project "(...) 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, comparability or substitution between certification and vocational experience (...)"

"Human capital theories tend to establish a positive correlation between the level of education and productivity and interpret the demand for education as a function of its economic profitability, either in individual (...) or 'macro' terms (...), public expenditure on education and training being regarded as an investment promoting economic development. (...) Within this theoretical framework (...), the education and training system is regulated by the needs of the job market (...)"

"The 'credentialist' theories, on the other hand, are based on the existence of a market of 'credential acts' - certificates and qualifications linked to formal education - whose value is more dependent on supply and demand than the 'knowledge and abilities' acquired in the course of training (...) paper qualifications serve merely to identify but can neither improve nor transform an individual's personal attributes (...)"

dustrial society. The rise in the level of education is therefore one of the paradoxes of a society characterised by the dematerialisation of production, the preeminence of information and productivity gains which trigger a jobless form of growth, still hesitant (resistant) to turn in the direction of a leisure society.

The German contribution is based on the same fundamental questions as those underlying the other studies: starting out from research in the 1970s on the job market "penetration" of more educated youngsters, it picks up the debates between approaches in terms of "manpower requirements" or the social right to education, interrupted in the 1980s in view of the emergence of other scientific and political priorities.

The theoretical framework of the study

Let us briefly examine the theoretical framework required for an analysis of the relation between the education and training system and the system of production and, more specifically, those elements allowing an analysis of changes related to occupations (their nature, content, skill requirements), on the one hand, and the distribution of the certificate-holders produced by the education and training system, on the other.

This comparative study essentially open two types of question: (i) the logic of distribution of the ever-increasing number of certificate-holders within the job market and (ii) the relationships between explicit training (generally evidenced by a paper qualification) and other skill components acquired by means of informal mechanisms, in particular vocational experience.

The logic of the distribution of certificate-holders

Several theories propose hypotheses to explain the distribution of certificate-holders within 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), public expenditure on education and training being regarded as an investment promoting economic development.

According to this theory, the increase in the demand for education and training and its direct consequence, an increase in the number of paper qualifications, are a response to the rising 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 increasing trend for jobs to require higher and higher skill levels and the rising number of occupations requiring these skills imply a growth in certificate-holders.

Within this theoretical framework (which presupposes pure and perfect information), the education and training system is regulated by the needs of the job market; any surplus in skill supply will diminish the yield from educational and training investment and therefore reduce the demand for education.

Despite considerable criticism, human capital theory has provided the basic framework of reference for public education policies in recent decades. This theory justified state intervention and support for the process of mass education as a contribution to increasing the productivity and hence competitiveness.

The "credentialist" theories, on the other hand, are based on the existence of a market of "credential acts" - certificates and qualifications linked 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., 1979); the screening process is based on the signal sent out by a certificate in a job market characterised by imperfect information on the quality of supply (Arrow, 1973, Spence, 1974).

M. Blaug (1985) distinguishes between two versions of the credentialist screening hypothesis: in its "strong" version,

paper qualifications serve merely to identify but can neither improve nor transform an individual's personal attributes; in its weak version, screening according to certification is a response to the employer's uncertainty about the future output of job-seekers. Screening according to certificate level and other attributes, e.g. gender or race, is based on the employer's past experience that these elements tend to reduce uncertainties about working quality. In this case, credentialism may come close to human capital theories, under the assumption that training increases an individual's productive capacity.

Just as in the human capital theory and despite the departure from the hypothesis of pure and perfect information, the education and training system is also considered to be regulated by a demand for skills, too many signals rendering them inoperable and in the long term reducing the demand for education.

However Rawlis and Ulman (1974) demonstrate that the stategy of "statistical discrimination" linked to imperfections in the "credential" market may lead to educational inflation, notably by means of an "exogenous" increase in the certification of the population: more paper qualifications means more applicants and more applicants means higher recruitment costs; in order to keep their recruitment costs constant, firms are obliged to raise their certification requirements, and this initiates a process of education inflation.

Other theoretical studies have proposed elements for a better understanding of the logic of distribution of certificates within the job market, in particular those which may be classified as an education/employment "mismatch". These studies highlight new factors inherent in the education and training and production systems which may impact on the distribution of certificates, without however excluding elements already introduced by the human capital and credentialist theories. Their approach is focused on the conflicts resulting from the autonomous dynamics of the education and training system, on the one hand, and the system of production, on the other (Carnoy and Levin, 1985). The most important elements contributed by these theories for the purposes of our study are as follows:

❑ the dialectically conflictual nature of the relationship between education and training and employment, characterised by a mismatch and mutual influence;

❑ the multifunctionality of the education and training system and the conflicting nature of its different functions. Carnoy and Levin show how the history of the US system is marked by a succession of periods characterised by either the logics of adaptation to the requirements of a capitalist economy or equality of opportunity;

❑ the arousal of expectations among more highly educated people, and the capacity of societies, notably job markets, to fulfil these expectations.

These analyses highlight the links between educational supply and demand from a more political angle. Indeed, education and training cannot be reduced to a problem of mere economics; it is also partly political in so far as it is a public asset. Public education/training policies are influenced by the various pressure groups defending their own interests, which the public authorities have often an interest in satisfying. In this case, educational and training policy emerges as 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 questions these classical - and dominant - theories implying mechanisms regulating the quantity of human capital and credentials or both as a function of market requirements.

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

"Our working hypothesis clearly assumes an - at least partial - exogeneity of educational and training demand. This hypothesis is contrary to the dominant (human capital and filter) theories which postulate market regulation of skills supply. It also stands apart from the planning work, inspired by the manpower approach."

"(...) like initial training, experience is an inescapable component of an individual's abilities in both 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 (...)"

Substitution of certification and experience

The two principal means of human capital acquisition are general and vocational education and training received within the education and 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 in so far as an employer may consider a minimum level of experience and initial training or a combination as indispensable for a given job. In contrast, in terms of credentialist theories, the two components are often complementary, certification serving as a mere screening filter and providing no 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 (Thurow, 1974) is a variant of the filter theory, whereby the employer's attention is focused on the candidate's aptitude for training and therefore paper qualifications send out a positive signal. However the employer will tend to give precedence to vocational experience, in particular in-company job experience. For this reason a number of jobs are first 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 when competing in the external market. Placed at the end of the queue, they have little opportunity for upskilling by the acquisition of experience or continuing training. Continuing training in fact rarely emerges as a second chance for youngsters who have not had a first chance (training within the education and training system) (Planas, 1996).

Unlike the previous approaches, the dualism and segmentation theories illustrate the existence of 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 different age-groups) therefore follows social, administrative or economic rules justified by the general policy of the firm in question.

According to these theories, 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 given precedence by employers and are generally better remunerated, especially in the primary market. Level of training serves as a screening instrument, but wages are determined by the characteristics of the job, not the characteristics of the employees. Human capital not deployed in the workplace is thus 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 an individual's abilities in both 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 point implied being that it is skills that are traded in the labour market and that these skills are co-produced by the education and training system and the system of production. The specificity of beginners is that they have no work experience.

Statistical results and their economic interpretation

CEDEFOP thus agreed to co-finance a study comprising teams from six Member States focused 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 and training system;

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

This phase involving the elaboration of a field of investigation on the basis of 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.

In summary, this methodology[1] consists of a comparison of the structure of the workforce of the various occupations at several points in time. This structure is determined according to two criteria: certification and age. So although it is a limited approach, dependent on both the categories used and the methods of comparison, it is nevertheless one means of considering the question of the distribution of certificate holders and the processes of competition for access to employment.

The results presented and commented in this article represent the first phase of the network's activities reflected in a report drawn up in December 1996[2] and must be interpreted with a certain degree of caution. The research programme continues and the network is grateful for suggestions and criticism.

Four principal results emerged from the statistical discrimination exercise. The first and second of these results, related to static data observation, crossing the "occupations" with certification level and the age of the workforce, show a considerable diversity of occupational structures according to age and certification level, i.e. by approximation, in the skills structures of the various occupations.

The latter two results relate to trends in these skill structures over a period of approximately 10 years in each country. The results of a modelling process, they highlight, with a surprising degree of convergence for each of the six countries, the decisive importance of the effect of training supply in changes in occupational skill structures. This supply effect is the underlying trend and once this trend is a known and measured quantity the residual effects, interpreted as market effects due to the specific behaviour of the occupations to guarantee their renewal, can be determined.

Table 1:

Occupations, Age and Certification

The occupation is a category of employment with related characteristics in terms of the content of the work performed, usually with reference to the degree of complexity of tasks, the specialised field involved (in terms of academic specialisation and/or functional deployment in the firm) and less frequently relating to the sector of activity or the worker's status; this is true of the six countries examined, even if significant divergences remain in the logics of classification.

Training level essentially identifies the length of training, most frequently in the framework of initial training and evidenced by a certificate. Training level is an individual characteristic. Classifications according to training level clearly differ in the various countries. 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, this term covering all types of formal or informal learning acquired in the firm or elsewhere which are not attested by a diploma.

The set-up of a common "occupations, age and certification" database for the six countries

The preliminary phase of the statistical work, essential for the quality and reliability of the results to be presented, led to the set-up of a common "occupations, age and certification" job market database for the six courntries (see Table 1).

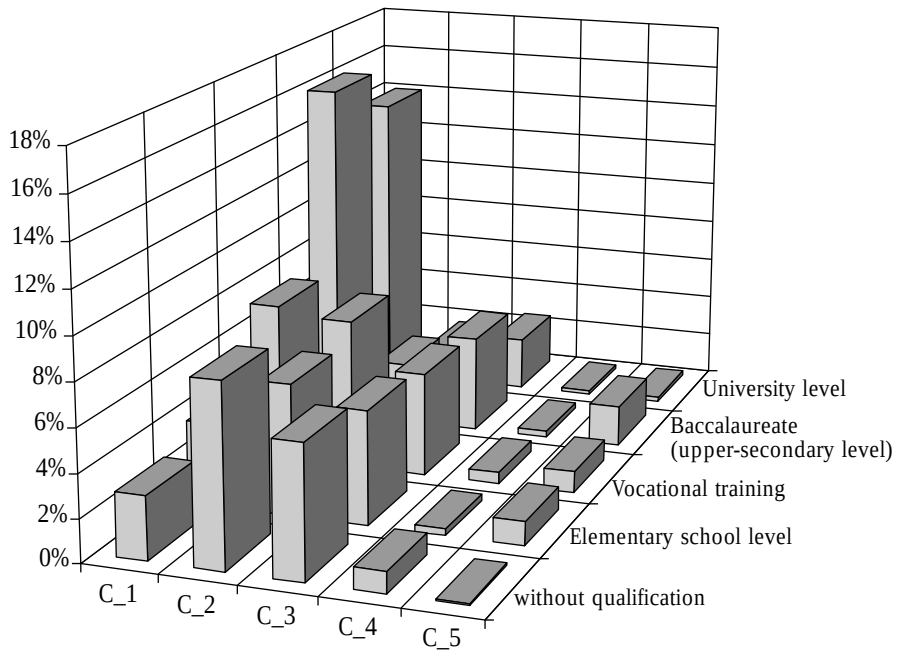
Job contents and structures will evidently have gone through profound developments over the periods under observation (from 1973 to 1994 according to the country in question): job titles will not cover the same requirements; job categories will no longer have the same contours. Even in the shorter term, the idea must be considered that the skills required for a given type of employment are not necessarily stable. For all these reasons, the category of analysis chosen, the occupation, covers an unstable set of jobs

1) For further details, see the annexes of the report dated December 1996 and LIHRE Cahier no 1: Béduwé C. and Espinasse JM., Diplômes, compétences et marchés du travail, Toulouse, 1995.

2) Both the synthesis report and the six national reports are available from CEDEFOP.

Figure 1

Skill structures in the "secretary" category in Spain*



C_1, C_2... : age category
*) This category is not homogenous for all the Member States and has been chosen for purely illustrative purposes.

and occupations. However, it must be stressed that the study is positioned from a macro angle. Our implicit hypothesis is that at the aggregated level of the categories utilised, such trends do not call into question the validity of a classification which may be approximate but which nevertheless clearly distinguishes between groups of jobs corresponding to overall types and overall levels of different requirements.

Although measurement of age poses no problem, the question is whether this variable is a good approximation of occupational experience. Without entering into detail, the relationship between the acquisition of experience and the lapse of time may intuitively assume varied, if not contradictory forms, according to types of employment, ages and seniority in employment. On the other hand, it cannot be contested that employers frequently refuse to take on beginners on the grounds of their lack of experience. Moreover, it can be reasonably assumed that a - variable - proportion of occupational skills is acquired in the course of employment. More complex indicators of experience could certainly be constructed, but not on the basis of our data. In sum, it should be pointed out that we regard the approximation of experience by age as a temporary compromise.

The information is coded in national employment and training classifications. These classifications are not necessarily comparable; they do not share the same logic of construction or the same level of detail. However this is not a problem for the exercise in question in so far as the comparison is not between the occupations themselves, but the manner in which their internal structures evolve. Consideration from this angle makes the question of the comparability of classifications less crucial and in no way obstructs the convergence of national results.

Throughout this study, the term "occupation" is understood in a very broad sense as an employment category. It is based on the coding of individuals' activity with the help of classifications. For reasons of statistical reliability related to the size of the national samples, they were grouped into a number of posts which varied from country to country. The macroeconomic framework of this exercise occasionally makes the occupation appear as a player but this is clearly a linguistic simplification; it is of course the enterprises which take on staff. In an *ex post* situation of equilibrium, the impact of these recruitment processes on the composition of the occupations is analysed according to certification and age.

Static data observation crossing the "occupations" with the certification level and age of their workforce.

At a given point in time, the structure of each occupation according to certification level and age offers an original map, manifesting a particular relationship between training and employment.

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

These internal occupational certification structures are in themselves closely cor-

related to the age of the workforce. The education and training system evolves, producing flows of certificate-holders differing in terms of quantity and level, generation after generation. It is probable that each individual bears the traces of average level of their generation. Each generation thus has its own specific certification structure.

Each occupation can thus be described by the certification/age structure of its workforce. By way of example, the "map" of the "secretaries, office and administrative employees" category in Spain is shown in figure 1.

The combination of these two criteria, certification and age, offers various conclusions on occupational skill structure. It provides a snapshot of the two essential components of the qualification; most generally complementary at individual level, they may or may not be substituted at collective level, depending on the heterogeneity of the jobs within the occupation observed and the practices of the enterprises in question. Complete and general substitution is certainly too strong an hypothesis which would imply a permanent process of inter-generational competition which does not exist across the board. Moreover, substitution is neither perfect nor gratuitous. Wage costs, and, more generally, costs related to access to employment (recruitment, retraining, etc.) may vary. Enterprises are not indifferent to the means of access.

The map for each occupation provides an - admittedly incomplete - summary of recruitment history; map trends over the last ten years offer indications on changes in recruitment methods.

Trends in skill structures

Changes in the structure of the working population according to the various occupations are not sufficient to absorb this educational and training surplus.

The distribution of the working population throughout the various occupations evolves: in some occupations numbers rise, in others they fall. An increase in the most highly skilled occupations and a fall in the lesser skilled occupations: this phenomenon alone could explain the absorption of an increasing number of certificate-holders. But it appears that this structural change is insufficient in all the Member States examined. Although there is a development of those occupations deploying more certificate-holders, it can also be stated that all - or nearly all - occupations are consuming more certificate-holders.

Table 2 illustrates this phenomenon: column 3 is obtained by calculation of the 1990 structure according to certification levels if each occupation had maintained the same certification structures in the period 1982 - 1990. It can be observed that the workforce in the higher levels (column 2) are more numerous than the mere quantitative occupational trends suggests.

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

The problem therefore is to determine how this influx of certificate-holders is spread within the employment system. Has it been absorbed by those occupations most affected by significant technological change and therefore in demand of supplementary skills, or has it been distributed throughout the employment system as a whole?

Table 2:
Certification structures in Spain

Certification level	Initial (1) 1982	Final (2) 1990	Caused by variation in employment (3)*
No certificate or primary education	13.6	11.2	12.2
Elementary	70.3	60.1	68.1
Upper 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 %**

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

"(...) internal occupational certification structures are in themselves closely correlated to the age of the workforce. The education and training system evolves, producing flows of certificate-holders differing in terms of quantity and level, generation after generation."

Table 3

Coefficients of determination (R^2) between different estimations of the occupations-age-certification tables

Model	France	Italy	Germany	Nether-lands	Spain	United Kingdom
Period of observation	**82-90**	**81-91**	**79-91**	**73-92**	**82-90**	**84-94**
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

"The continuous rise in the level of education and training is spread over all the occupations in proportion to initial skill structures."

This second hypothesis can be easily tested: it is simply a matter of simulating what the trends in internal occupational certification structures if, starting from their initial status, 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 countries, 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 occupational numbers;

❏ the final method takes account of both effects simultaneously.

Trends in skill structures for each country

The main results of these three modelling exercises (table 3) illustrate a surprisingly homogeneous predominance within the six countries of a pure effect of educational and training supply. The continuous rise in the level of education and training is spread over all the occupations in proportion to initial skill structures.

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

❏ highly dependent on the past;

❏ largely predicted by the rise in the level of education of successive generations;

❏ largely independent of variations in occupational numbers.

Highly dependent on the past

Occupational skill structures show little variation within this period compared to the total number of entry and exit flows: depending on the country in question (with the exception of The Netherlands where the observation period is longer) (Table 3, line 5), 63% - 85% of the final structure can be predicted by the initial structure alone. This means that firms have largely reproduced the past in their

recruitment and promotion choices and have respected the previous balances between the recruitment of (more highly qualified) young people and the promotion of (less qualified) older people in the various occupations.

Job renewal is effected by the entry into employment of young people coming directly from the training system and/or the occupational mobility of human resources with equivalent skill levels. The structures observed are momentary points of equilibrium resulting from a multitude of movements of job entries and exits. The (relative) stability of skill structures over some ten years, taking account of these movements, shows that the job market has continued to function and that there has been no general obstruction of social and/or occupational promotions. Thus, for example, relatively young, lesser qualified executives can still be found at the end of the period of observation; they were presumably promoted in the intervening period.

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

Largely predicted by the rise in the level of education of successive generations

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 country in question (with the exception of The Netherlands) (supply variation model, Table 3, line 6).

This result demonstrates a strong effect of supply in trends in occupational skill structures, independent of their different skill requirements.

Occupations in general have benefited from the rise in the level of education, 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 inflow of increasingly qualified generations into the job market is spread over all the occupations in proportion to their initial skill structures.

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

These results, in particular their convergence within six countries with their own training and employment systems, imply that the social demand for education and training is independent of the requirements of the economy. This strengthens our first hypothesis. This study suggests a formalisation and a quantification of the predominance of the effect of supply on which it is based.

Largely independent of variations in occupational numbers

Taking account not only of the effect of supply, but also of variations in occupational numbers does not significantly improve the estimate of skill structures, as illustrated by a comparison of the supply effect model (Table 3, line 6) and the simultaneous effects model (Table 3, line 8).

These structural changes could have been expected to be linked to the growth or decline of the occupations, these quantitative trends being indications of both highly different entry and exit flows and probable changes in content. It appears on the contrary that trends in skill structures are not related, or only to a minor extent, to variations in numbers per occupation.

If variations in occupational numbers are regarded as indicators of a demand for skills, this result indicates that trends in skill structures are largely independent of this demand. In other words, the effect of demand appears insignificant compared to the effect of supply.

For a very general projection of occupational skill structures, long-term trends in the production of certificate-holders by the education and training system gives a relatively precise idea of future trends, regardless of the variations occupational skill requirements elsewhere.

This apparent independence of skill structures from trends in occupational num-

"Occupations in general have benefited from the rise in the level of education, not only a restricted number of occupations with a particularly high incidence of technological development, as might initially have been expected."

"(...) different behavioural patterns to those expected, not only in terms of certification level but also in terms of the possible complementarities/substitutions between certification and experience, (...) Occupations can thus be classified according to preferred choices between formal and informal training."

bers suggests - at least in the context of our analysis, which is limited to occupations, and our narrow definition of the term "skills" (certification and age) - that the economies considered have not been subject to a serious dearth of skills. In those cases in which skills shortages (or surpluses) appear, they are either a general phenomenon, independent of occupations, or local phenomena in the form of a shortage of specialised skills which are not to be observed across occupations and certification levels.

The effect of supply

This effect of supply is a very strong underlying trend in the explanation of skill variations. Observation of this trend offers an analysis of the preferential adjustments of each occupation to the various workforce categories.

By means of a modelling exercise, essentially on the basis of trends in supply, future occupational skill structures can be projected up to levels ranging from 68.8% in the case of The Netherlands to 92.5% for the United Kingdom (Table 3, line 8); the remaining proportion unexplained by the model must be interpreted occupation by occupation.

The repercussions of the analysis of these residual effects are immediately operational: for each of the six countries a list of "deviant" occupations can be drawn up, i.e. those which do not follow the "norm" in terms of training system trends. This provides a three-group typology: occupations which have consumed more certificates than predicted, those which have consumed fewer and, finally, those whose behaviour corresponds to the projections.

This classification of occupations was carried out for 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.

The example of secretaries - a category which in the UK (and moreover in The Netherlands) shows a higher certification level than predicted - illustrates two possible types of explanation which might seem contradictory at first glance: the technological development of these jobs or the declassification of university graduates.

Analysis of this "deviant" behaviour can be taken a step further - data permitting - by reintroducing into the residual analysis the breakdown according to the two skill components, certification and experience. This exercise has so far only been possible in the cases of France and Spain.

Occupations therefore show different behavioural patterns to those expected, not only in terms of certification level but also in terms of the possible complementarities/substitutions between certification and experience, i.e. decisions by employers between more highly qualified younger candidates and/or (older) more experienced employees for a given occupation. Occupations can thus be classified according to preferred choices between formal and informal training.

On the basis of this typology, it can be observed in France that the more highly skilled occupations (in terms of job qualification: executives, middle-level occupations, skilled workers and employees) generally tend to go for experience and/or the experience, plus certificate tandem, whereas the lesser skilled occupations seem to have had more frequent recourse to certification than could have been predicted. 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 similar. It can be observed that most occupations have consumed more certificate-holders, with or without experience, than the initial situation suggests. The general trend is towards substitution in favour of younger and more qualified persons - which does not mean that this group is not particularly hard hit by unemployment.

Implications, limitations and conclusion

The initial results of this study must now be subject to criticism and interpretation.

Their limitations must be clearly emphasised in the light of the policy implications which might be entailed by hasty conclusions. The question is what can be reasonably inferred from these results and what can certainly not be inferred at this stage.

The existence of an effect of supply in occupational certification/age structure trends

In very general terms, the essential result of this study for all the countries examined is the existence of an effect of supply in occupational certification/age structure trends. These structural transformations can be largely explained by the mere availability of a higher number of trained persons in the marketplace. By correlation, the effect of demand, as a function of trends in occupational numbers, plays a minor role.

To be perfectly clear, occupational requirements are real, but are manifested in each occupation in a comparable manner: most of the trends can be explained by initial skill structures and the availability of manpower alone. An initial theoretical model has been proposed to explain the behaviour of enterprises (Espinasse JM. and Vincens J., 1996). Its contention, in essence, is that firms draw on the various types of skill as a function of their relative proportions in the job market.

The significant effect of supply can be interpreted from two angles. The first, which leans on credentialist theories, maintains that, in view of the rising certification levels of the workforce, employers merely raise their requirement levels for each occupation. More certificate-holders are recruited because there are more of them in the market place, not because of changes in requirements intrinsic to specific jobs. This first interpretation raises a series of problems: it can be reasonably assumed that many of the jobs in question have evolved in the course of the period of observation. Moreover, why has the availability of certificate-holders not led to a more rapid concentration of certificate-holders in high-level occupations? It has in fact been observed that it is rather the lower skilled occupations which show an "over-consumption" of paper qualifications. Finally, the credentialist hypothesis does not say that this substitution is gratuitous. The absence of an analysis of wage trends is evidently a major weakness of our results and at the same time a field for future research (Robinson 1997).

The second interpretation, more commonly evoked and reflecting an explanation according to demand, is that this general rise in the occupational demand for skills is engendered by significant changes in job content and requirements in the wake of technological progress and the pressure of competition. This second interpretation is only compatible with our results if all occupations show comparable behaviour, i.e. if there are few effects specific to the relevant occupations. This would imply that jobs as a whole have been subject to comparable change or that employers consider the rise in certification levels as a general necessity, independent of occupational specificities.

The specific demand of occupations is manifested to a limited extent: numerous occupations are to be found in all the countries 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 in view of relative shortages of supply (Béduwé, Espinasse, 1996). This means that within certain occupations technological change has been sufficiently significant to induce a real increase in recruitment requirements.

These various interpretations place the training/employment relationship in a rather unorthodox light. An analysis, still widespread in the social debate, regards the intensification of the educational and training effort as a remedy for unemployment and, more generally, for all the difficulties of our economies. This analysis is frequently based on the existence of a dearth of skills which is to be palliated by a training effort.

However, our results show that the distribution of certificate-holders within the economy has followed complex laws in six European countries over the last twenty years. The overall dynamism of the system seems to be driven by a a

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"(...) distribution of certificate-holders within the economy has followed complex laws in six European countries over the last twenty years. The overall dynamism of the system seems to be driven by a a movement of generalised distribution of certificate-holders rather than phenomena of shortages and surpluses per occupation, even if such phenomena do have a role to play (...)."

"The essence of our results clearly lies in the term "generalised". Our findings offer no assessment of the advisability of any specific level of paper qualification production."

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movement of generalised distribution of certificate-holders rather than phenomena of shortages and surpluses per occupation, even if such phenomena do have a role to play (residual effects).

However, it must be emphasised that the general character of the effect of supply and the theories of demand to which it can be appropriately associated (the firms do after all have needs!) tell us nothing about the desirable education level of the working population or the desirable level of public or private expenditure which provides its funding. Our results are perfectly compatible with a generalised phenomenon of education inflation, evidenced by processes of declassification, but they are also perfectly compatible with a generalised process of educational deflation. Given the mediocre international performance of our countries, we would be inclined to accept the latter hypothesis. Finally, these results are only compatible with a good match with demand if this term is interpreted very specifically as a general need for certification which is valid for all occupations, comparable to needs expressed by the undertakings for wage-earners in command of the three Rs (reading, writing and arithmetic) in virtually all jobs in the inter-war period.

The essence of our results clearly lies in the term "generalised". Our findings offer no assessment of the advisability of any specific level of paper qualification production. To do so, it would be necessary to introduce wages and links between training and productivity into the analysis, which has not been possible in this initial stage.

The limitations of the exercise

At this point it seems appropriate to recall the limitations of the exercise and accordingly of the results obtained. The first series of limitations concerns the categories of analysis chosen. We have stressed the ambiguities of assimilating age and experience. Certification levels are most frequently composed of a highly aggregated nomenclature (5, 6 or 7 positions) which necessarily combines extremely varied types of training, especially in training systems which have gone through or are going through a rapid pace of development. Finally, the category of the occupation is also problematic: our results may assume different meanings depending on the internal homogeneity and the stability of the composition of this category.

The second series of limitations has also been emphasised: consideration of costs, wages, and, more generally, monetary aspects in the transactions examined. The introduction of these elements would allow conclusions on the effectiveness of the implemented policies. This is an essential track for the continuation of this research.

Policy repercussions

The policy repercussions of this rise in the level of education and its acceleration in recent years open up fundamental issues for training system trends.

The fact that our societies continue to intensify the initial training effort, despite its relative ineffectiveness in combating unemployment, in particular youth unemployment, is evidence of a consensus on this question. Three players are directly involved in the rise in the level of education and training: the state, the enterprise and young people. Each of these players has two possible strategies: to prolong training or not. The problem is the same for each of our six countries, even if the forms assumed by prolonged education and training differ according to the specific contexts and national characteristics of the training systems. It is clear that the three players have an interest in applying the strategy of prolonging education. For the firms there are three advantages: pressure on wages, the constitution of a skilled manpower reserve to respond to fluctuations in production and better opportunities of manpower management close at hand. The task of the state is to guarantee optimal availability of skills. On the other hand, over and above this long-term task, keeping young people in the training system has the short-term advantage of keeping them off the unemployment register. As for young people and their families, given the current levels of unemployment and the low marginal cost of training, it is in their interest to attain the highest possible level of certification in order to acquire a maximum level of skilling. Furthermore, the three players regard training as a safe-

guard against the uncertainties hanging over skills trends and long-term trends in the technical sphere.

This policy has thus been of advantage to the three players in question and has constituted a consistent and consensual response to the context created in the six countries in question by the simultaneous emergence of the globalisation of the economy, the advancing pace 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 and training investment, the exclusion of the less skilled, etc.) have generally been insignificant, despite the disparities emerging in the wake of national arrangements prolonging education and training (e.g. the level of youth unemployment).

The problem is whether policies of this type can continue and whether the cost/benefit ratio of a policy geared towards prolonging education will remain positive.

Coming back to our results, the sharp rise in the level of initial training programmes does not prevent the labour market from continuing to produce implicit knowledge to enhance individual skills. The mechanism of co-production of skills by the education and training system and the system of production still exists. This is demonstrated by the continuing diversity of modes of occupational access and by the predictability of this diversity which constitutes the principal result of this statistical research.

In contrast, the conditions of co-operation of these two systems have changed profoundly. The job market, needing to renew all or part of its leavers, tends to recruit youngsters with a higher level of training who with a given level of experience will in the long term be on average more skilled than their predecessors.

The effects of the change in the entry level of young people into the marketplace are reproduced downstream at the level of the working population. An education and training policy measure may have repercussions by means of this mechanism on the conditions of employment (or even on the employment) of those who left the education and training system a long time ago. They are also reproduced upstream of entry into working life by means of the expectations they trigger among young people currently in education, as well as their parents.

An approach in terms of generalised - skill-based - competition between the workforces of different generations with different levels of training would therefore appear to be a fertile field of research of which the results of this study are only the first fruits.

The elements of analysis 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 are heading towards a change: all things being equal, the greater availability of skills reduces each individual's chances of promotion. A fourth player must therefore be brought onto 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 the persistence of this rise in the level of education. The fourth player is the wage-earners already in situ, the "insiders" (and their trade unions) who have always benefited from either social, occupational or second-chance promotions throughout their careers. Our results show that these systems of mobility have been maintained throughout the periods of observation. However the continued acceleration of the production of certificate-holders will bring young people into the job market who, as demonstrated, are acquiring skills more and more rapidly. This continued influx over various generations and in increasing quantity therefore risks seriously blocking previous occupational mobilities or at least pushing present-day wage-earners further down the queue. Offering higher numbers of skilled persons, the younger generation will be keener competition for their elders.

The resulting decline in mobility and increasing obstacles to career progression could turn out to be a major reason to call the present consensus on training into question and open up the path for a real development of continuing training.

"The problem therefore is whether policies of this type can continue and whether the cost/benefit ratio of a policy geared towards prolonging education will remain positive."

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The evolution of systems of validation and certification

What are the possible models and what are the issues for France?

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The objective of achieving a satisfactory match between training and employment has always been readily postponed and would nowadays seem even less attainable. It may even be that it no longer makes much sense in social systems where occupational mobility tends less and less to follow clearly marked routes. The link between these two worlds needs a thorough rethink.

Introduction

In most developed countries the system for validating and certifying vocational skills is currently the subject of debate and reform. The European Commission's White Paper "Teaching and learning - towards the learning society" accords it particular attention. The system of National Vocational Qualifications (NVQs) established in the United Kingdom over the past few years has aroused considerable interest in a number of countries. In France the report of the committee chaired by Roger Fauroux (*Pour l'école*, Calman Lévy - La Documentation française, 1996) advocates a revision of the vocational certification system while the report submitted to the Ministry of Labour by Michel de Virville (*Donner un nouvel élan à la formation professionnelle*, La Documentation française, 1996) proposes the creation of what he calls "national qualification benchmarks" to encourage better recognition of skills acquired in the course of work experience.

Whatever the solution recommended, the concerns underlying the wish to reform the existing system are very similar. Generally speaking four arguments are advanced:

❑ *The overriding importance attributed to certificates acquired during initial training as compared with certificates validating skills gained through work experience*. Measures to ensure a better balance would seem in place here, particularly given the rapid pace at which both job content and technology are changing. As the White Paper points out, if people are henceforth called upon to take part in a process of lifelong learning, everyone should be able to obtain recognition of his or her basic technical and vocational skills regardless of whether or not these have been acquired in the form of a paper qualification. However, the point at issue is not simply the need to develop systems of certification better adapted to continuing training, but at a more fundamental level to review the weighting given to vocational certificates awarded under the school system. In the view of some this weighting would at present seem to be excessive in that it deprives those who have not attained a good level of school education of a "second chance" and of the possibility to obtain recognition of the skills they have acquired in the course of their often very rich work experience.

❑ *The overriding emphasis placed on academic knowledge in training courses*. Here rather than merely on programmes and systems of validation the focus is on "the hierarchy of skills which accords the highest place to the production of theorems and abstract speculation and ranks lowest the practical ingenuity of the handyman" (Fauroux report). This perception leads to a devaluation of occupational training - we would refer readers to the OECD discussions on "parity of esteem" of general and vocational training - and hampers recognition by the training system of knowledge and skills required by firms.

❑ *The excessive importance accorded in training to knowledge acquired for its own*

"All training systems are currently faced with a series of partly conflicting requirements. On the one hand they are expected to help raise the level of general education (and) at the same time to emphasise the aspect of professionalism both because of the numbers now passing through the education system and in order to prepare young people and adults better to meet employers' expectations (...)"

sake independently of the contexts in which they are used in working life. This criticism is an extension of arguments for an education and training system based on the acquisition of behavioural patterns and competences. The idea is not new. Tuxworth traces its origin back to the United States in the twenties and recalls that it gained considerable ground there from the end of the sixties onwards when the need to bring the educational system more into line with the realities of production became particularly acute (Tuxworth, 1989). Broadly speaking it is based on the fact that, to paraphrase Jessup (1991)[1]:

When theory is taught separately from working practice it begins to live its own life and acquire values, priorities, an organisation and a language of its own. It tends to develop according to a certain logic and as a function of objectives of a purely intellectual order rather than in relation to the practical exercise of an occupation, which is often regarded as superfluous. Even when reference to theory is appropriate, it is only rarely related to practice during training, which does not encourage its application.

Jessup goes on to point out that inherent in this criticism is the idea that most of the theoretical knowledge and practical know-how useful in working life and life in general is acquired in informal situations and that the effectiveness of training increases when it relies on the ability of individuals to control their own learning process and to learn independently.

❑ *The difficulty of exercising effective control over the multitude of training courses that have come into being in recent years,* particularly in the framework of programmes devised by government authorities to help young job seekers. The type of training and its duration are not always a sufficient guarantee of its effectiveness in terms of the employability of those attending. An external system of assessment based on the validation of skills would provide a means of regulating the system by presenting training bodies with objectives directly linked to the skills expected by employers.

These arguments have carried greater weight because the links between training and employment have been seriously disturbed over the past 15 to 20 years by the radical changes that have affected working methods and organisation. The objective of achieving a satisfactory match between training and employment has always been readily postponed and would nowadays seem even less attainable. It may even be that it no longer makes much sense in social systems where occupational mobility tends less and less to follow clearly marked routes. The link between these two worlds needs a thorough rethink.

All training systems are currently faced with a series of partly conflicting requirements. On the one hand they are expected to help raise the level of general education of young people, whose need for a solid grounding in various fields both literary or scientific to permit them to progress in their working and social life is steadily growing. At the same, training needs to emphasise the aspect of professionalism both because of the numbers now passing through the education system and in order to prepare both young people and adults better to meet the expectations of employers, who are increasingly looking for people who can be put to work immediately. The organisation of training routes and the way in which they correspond to different types of occupations and jobs is becoming more and more complex and unstable.

The discussion concerning the validation and certification of skills can only be understood in this context. The degree of success in finding original and effective solutions to this question is undoubtedly a key factor for adapting the training system of tomorrow. However, any evolution in this field will be extremely complex. There is no standard solution applicable in every country. Systems of certification are the fruit of a social structure rooted in the history of each society and their evolution will involve making choices that are not merely technical. It would be wrong to think that revising a system of certification, however well conceived, is possible without rethinking the link between initial and continuing training and the rightful place of occupational and technological dimensions in initial training, and without changes in the way qualifications and skills are managed in

1) Jessup, who played an important role in designing the NVQ system, states as his opinion that if anyone is able to exercise control over the learning process it is the individual himself. Similarly, consistency in learning is in the last resort down to the individual who is learning. It is only he who can find sense in the various elements he is taught during training and link them to his own perception of the world.

firms. Conversely, it would be dangerous to think that once of a number of major choices have been made as to how vocational training systems should develop, questions of validation and certification will solve themselves. Devising new forms of certification is a technically complicated operation and the solutions adopted will depend on government policy.

The case of France is particularly interesting from this point of view. The attachment to traditional forms of certification, the complexity of a system that has been built up over time and the different interests of those concerned with training matters have made it impossible to obtain a consensus as to how the system should develop. This has not prevented the introduction of innovations leading to gradual changes in the way the system actually operates. In order to understand the specific nature of the French system better it might be useful first of all to review the various systems that currently exist and how they reflect the collective choices made in this field.

Three models

We shall not attempt here to describe the systems of vocational training in the countries being considered in their entirety but merely try to show how the various forms of certification are designed and the job specifications on which they are based.

The German way

German certificates testify to the possession of the basic knowledge and skills considered indispensable for any "professional" in the field concerned (Möbus and Verdier, 1997).

Employers wield considerable influence for at least three reasons:

❏ firms are directly involved in the training process because certificates of qualification are obtained on the basis of combined on-the-job and off-the-job training largely financed by the firms themselves;

❏ the certificate issued upon completion of training carries considerable weight when seeking employment;

❏ certificates do not claim to cover every level in a given occupation but simply the basic level from which an individual can progress through growing experience and continuing training throughout his career.

This makes it understandable why the design of training leading to these qualifications is the object of a long period of concertation preceded by detailed analysis of the work involved - contrary to general belief the time taken for this process is far longer than in France and the vocational certificates far more stable. On the other hand, the translation of job specifications into course specifications poses far fewer problems because most of the instruction is given in a work situation. Acquisition of technical knowledge is clearly directed to mastering work situations set out in the job specifications[2].

This concept goes hand in hand with the existence of highly structured "occupational markets". Training flows are largely governed by the possibility of employment and obtaining a formal qualification does not just carry with it a high probability of being taken on for a particular type of job but also opens up the possibility of career development. On several occasions employers have agreed to take on a higher number of trainees than justified by their order books so as to maintain these occupational markets during a period of sluggish economic activity.

This system, therefore, is not regulated solely by employer demand. In fact, negotiations with the trade union organisations concerning job specifications leads to firms actually defining what is meant by a skilled worker, what they should be able to do, the tasks that may be entrusted to them and their degree of working autonomy. Job specifications are thus an essential means of job demarcation and work organisation within firms.

There are, moreover, qualifications obtainable in the course of a career, such as for example, that of *Meister* or master craftsman, which are distinct from certificates of initial training. This separation between the certification of initial and continuing training is a marked feature of the German system.

2) Under the German system apprentices receive their general training in schools run by the regional authorities in accordance with programmes designed by a decentralised body. Also worth pointing out is that the German apprenticeship system is not based on a distinction between theory and practice but more on the threefold combination of practical skills developed in a work situation, technical knowledge mainly provided by the firm and general knowledge provided by the schools or colleges.

The British way

The British system of National Vocational Qualifications (NVQs) defines the whole set of skills belonging to a job structured at several levels.

Faced with a system of vocational training frequently criticised for its lack of consistency[3] and rigidity (particularly in the case of manual trades where training was mainly organised by the trade organisations themselves), the British government in the early nineties laid down standards for qualifications, the principle of which is that they make practically no reference to methods of learning or to a coherent body of knowledge. An NVQ is considered only to relate to practical skills that are easily validated. To take a simple example, the competence required for a bricklayer includes the ability to construct a brick wall within a given time and to a certain quality standard. There is no mention of how this skill is to be acquired, such as progressing from mastering the actual laying of bricks to building a wall of the necessary strength and uprightness, nor of the knowledge to be applied in order to accomplish the task, such as principles of geometry and a knowledge of materials and their properties, nor, again of training leading to acquisition of the relevant skill and how this ability ranks in the general hierarchy of building skills.

The British system aimed to raise the level of skills of the workforce, which was notoriously far below that of other European countries, without involving itself in financing a costly system of training. The NVQs are meant to constitute the central regulating element of the system. Because they are a standard recognised by employers and workers alike, training courses have to take them into account and employees can have skills acquired through job experience recognised without going through a training body. Hence the importance for the system's effectiveness of creating very rapidly a relatively exhaustive and easily revisable list of NVQs and a network of validating bodies partially independent of the training bodies and firms. Without these two elements the standardising effect of the system would have no chance of being achieved.

All NVQs are made up of a number of units which are separately validated. However, an NVQ is only awarded when all the units have been gained.

The system has become increasingly sophisticated, particularly with the introduction of General National Vocational Qualifications (GNVQs) which integrate NVQs into initial vocational training. GNVQs are far more detailed than NVQs as regards the type of knowledge a student must acquire[4].

NVQs are in fact quality standards. The NVQ certificate does not guarantee anything except what is strictly required to obtain it, just as a quality standard does not guarantee anything other than compliance with certain criteria defined by a committee (such as the degree of shock resistance of a motor cycle helmet). Generally speaking the system's operation is very similar to that for quality accreditation in industry. Thus the bodies performing the assessment require accreditation just as in the case of the industrial quality procedures. They are independent of the training bodies. On the other hand, the job definitions are fairly traditional and the system is structured on jobs and craft trades such as one finds in most nomenclatures[5].

Since its introduction the system has diverged noticeably from its original principles. Thus the bodies responsible for validation (accredited firms or training bodies or Awarding Bodies) have acquired methods for determining whether candidates possess the abilities underlying the performance of a task and not simply that they are able to carry out the task satisfactorily. The booklets issued to Awarding Bodies contain elements which cannot but recall the content of traditional qualifications. This tends to show the limits of a system based on the principle of standards of competence understood as skills immediately susceptible of validation. Moreover, the system has been enhanced by the introduction of what are known as "core skills" such as communication, application of number and information technology, etc. Every NVQ involves some of these. The desire to focus the system on the validation of skills closely related to working situations does not, however, avoid the question of vali-

3) There were a large number of methods of skill certification, namely those issued by the Royal Society of Arts (mainly in the field of office work), the City and Guild certificates (mainly in the field of craft trades) and those awarded by the BTEC, which are equivalent to the French CCI. The system has been described as a jungle. In the late eighties almost two million certificates a year were issued by more than 300 different assessment bodies.

4) In order to obtain the equivalent of the French baccalauréat a student must pass the validation tests for a certain number of subjects of his choice. These subjects may be either general or vocational. In order to obtain an A-level certificate two certificates in vocational subjects equate to one general subject. Thus a pupil may take the examination in four general subjects or three general and two vocational subjects.

5) Since their gradual introduction from 1989 onwards almost two million NVQs have been awarded. This represents a rate of about 270 000 per year, or 320 000 if we include GNVQs (against 590 000 traditional certificates awarded elsewhere). According to the estimates of the London School of Economics, 2.2% of the active population in work are preparing for an NVQ.

dating underlying skills or of "generic" competences. This is precisely one of the chief technical difficulties of any system of validation: ascertaining that a person is able to perform a certain task does not necessarily mean that they have the ability to perform similar tasks in a different context or to transfer this ability to related occupational situations.

The "White Paper" way

A system for the accreditation of skills that does not refer to specific jobs and trades, as recommended in the European Commission's White Paper bears some similarities to the British system, particularly the understanding of competence as the ability to carry out a series of tasks or operations and the principle of regulation by quality standards. There is, however, one major difference in that reference to the notion of job or trade tends to disappear. The idea is to test a candidate for possession of a number of skills without reference to any particular occupational context. In the same way, validation would no longer be the responsibility of awarding bodies but be based on a series of tests which could be taken on the Internet under the control of an approved body. The White Paper is not very explicit as to the practicalities but the examples given are significant. Thus it suggests, for example, testing knowledge of a foreign language, accounting skills and the ability to use a word-processing system. All these skills are common to a large number of occupations; an individual will combine them according to his personal career with the system excluding *a priori* reference to a trade or occupation such as secretary/assistant book-keeper or bilingual secretary.

Since the White Paper was published the plan has gradually taken shape. The new system would apply both to basic knowledge in mathematics, science, information technology, geography or written expression, to occupational or technical skills such as marketing, company management, mechanical or electronic engineering etc. or to key skills such as logistics, organisation, the ability to take decisions, or to foresee and manage risk, and interpersonal skills. A number of experiments are being carried out by international teams specialising in the fields concerned. The "computer driving licence" developed by a Finnish body which is gradually spreading to other Nordic countries is no doubt the most complete example of this type of certification. Sweden is aiming for 60% of its working population to obtain this "driving licence".

Such a system is underpinned by the vision of a labour market governed by skill supply and demand. There is little room for the cohesion that marks a collection of skills within a given trade or occupation nor for the existence of practical skills proper to a given type of organisation. Recognition of skills acquired by position in the firm or salary level is dependent on the useful value of "accredited skills" in a given firm at a given time. The White Paper tends to place us in a "free market for competence". With work becoming increasingly computerised and work organisations constantly changing we are left simply with the individual and their skills.

This type of certification will undoubtedly very soon come up against its limits. First of all in terms of the areas covered. It would seem difficult to validate in this way skills relying on manual dexterity; similarly it is hard to see how one could assess skills for occupations with a high degree of technical content, which can be appreciated to some extent by means of a case study but which it is far more difficult to assess using a series of unreliable tests. Moreover, the value of this method in the eyes of employers depends very much on the reputation they acquire and the confidence they can have in the results. Does passing a test in mathematics and statistics provide good reason to assume competence in a work situation? It is probable that an employer who is looking for a competent statistician would prefer to take on someone who has followed a specialised course in the subject. On the other hand, if he is looking for someone whose main skill is in another field, such as a commercial one, a test of this kind could prove useful if the job will require the person concerned to handle a considerable amount of statistical material.

Without entering into a discussion of methodology we would merely say that in our view this approach does not seem

"A system such as that proposed in the White Paper is underpinned by the vision of a labour market governed by skill supply and demand. There is little room for the cohesion that marks a collection of skills within a given occupation (...)"

"The three models we have outlined show clearly that technical aspects of the structure of systems of validation and certification cannot be dissociated from more fundamental choices as to the design of the teaching and learning process, individual mobility and career management and the link between a firm's overall performance and that of individuals."

to take account of the criticisms that have been levelled against these tests over a number of years, particularly in the United States. It is precisely because the results of such tests, and of school examinations, do not seem to correlate with performance in work situations that a body of opinion has emerged in favour of assessing competences on the job (McClelland, 1973). The advocates of this approach argue for an assessment based on observation of individuals who do a job well in order to determine the ability and skills needed. From this point of view observation in work situations and occupational context are of prime importance. This is the stance most firms would seem to be adopting in their "competence approach", thus restoring all its importance to the contextual dimension of knowledge and skills (Spencer and Spencer, 1993).

Nonetheless, accreditation at European level has the merit of showing up a number of weaknesses in the systems currently in use. They raise the question of the "transversal"[6] or "transferable" nature of certain skills. As most individuals change their job at some time and in some cases several times during their working life, some of the competences acquired in one field should be usable in another. To be able to recognise some of these transferable skills would be very useful in the job market. Certificates of vocational qualification do not achieve this objective, if only because the training system as it is today often requires that a whole course to be repeated in order to validate the skills acquired. The European system of accreditation is an original attempt to find a solution to this problem. At the same time, the initiative illustrates the failure to meet the need felt by many people to achieve a job level appropriate to their knowledge and skills. While passing the "computer driving test" will certainly not offer sufficient assurance of the ability successfully to perform the job of computer engineer in an industrial firm, it will enable a secretary or an assistant book-keeper to assess their own proficiency in using a word-processing system or spreadsheet software and to answer such question as: What is my level? Has the training course I took helped me to make progress? How capable am I of performing certain tasks independently? What are my shortcomings?

It is very unlikely that such an approach will replace the existing system of certification. Nor, indeed, is it intended to. But gradually it could occupy a not insignificant place in the certification system and as it finds acceptance with firms it could gradually alter the general balance of the system as a whole.

Technical choices involving different options for operation of the labour market

The three models we have outlined are not wholly mutually exclusive and may to some extent coexist in a country. However, the brief descriptions which we have given show clearly that technical aspects of the structure of systems of validation and certification cannot be dissociated from more fundamental choices as to the design of the teaching and learning processes, individual mobility and career management and the link between a firm's overall performance and that of individuals.

It is also clear that the scope for choice in such matters is considerably restricted by the social structures and the history of the training system in each country. One can certainly only understand the British experiment if one is aware that for a long time the labour market in that country was dominated by a very clearly demarcated system of trades. The skilled workers, who were trained by their guild or trade association and moved easily between one firm and another, coexisted alongside a labour force that was in the main unskilled. In a sense the NVQs conserve the craft trade approach[7] while seeking to free it from the disadvantages of corporatism. The system promoted by the British government must also be viewed in the context of a free market economy and of weak employer/union cooperation (one might add in the tradition of common rather than written law). Attempting to transfer it to other contexts more weighed down by the operation of internal markets or employer/union cooperation would carry a considerable risk of failure. Thus the Lead Bodies who design the NVQs have only made rapid progress because of the weakness of union representation on them and the absence of any dispute as regards qualifications and classification because no collective agreements exist.

6) The term "portability" is sometimes also used.

7) The notion of trade should not be understood in too rigid a sense. There are NVQs for "insulation installation" or "cable laying" which are by no means training for trades in the real sense of the term.

A comparison of the three models also shows that each of them involves a different concept of competence. On the other hand, they all stress the application of knowledge and skills in a practical situation. The notion of competence only makes sense in a discussion about training and employment when set against a more academic vision of the passing on of knowledge, with knowledge divided on the basis of disciplines, a process of learning extending from theoretical understanding to practical application, validation of knowledge and skills acquired by means of a training course etc. One finds in both the British debates that preceded the creation of NVQs and in the German discussions on the subject of key competences in the early eighties, as well in the discussions surrounding national education standards in France or again in the White Paper proposals, statements as to the necessity of involving the individual actively in training, the importance of the contextualisation of knowledge, the need for written specifications in the form of "ability to ...", and for progress towards training systems that are less supply driven.

Despite these broad areas of agreement, the concept of competence differs from one model to another. The British model and that implicit in the White Paper share a definition of competence linked to performance: competence is an action or a work situation which one is able to master and cope with independently in practice. The NVQ standards or the systems of accreditation thus consist of a collection of situations regarded as representative of the job or field concerned. Thus if someone is able to regulate the carburation in a four-stroke engine there is no point in checking if he can explain the function of fuel injection or the amount of CO_2 tolerated in exhaust gas. Similarly, if someone is able to make a table with four columns and six rows using a word processing system or to use a spreadsheet programme there is no point in checking whether he can explain the document filing function in a computer. Such knowledge is supposed to exist in practice by a person possessing the skills validated. Apart from this agreement the NVQs and the White Paper differ fundamentally because the former are specifically occupation-based (what situations need to be mastered in order to perform such and such a task?), while the White Paper system is based on skills common to a variety of occupations.

Like the NVQ standards, the German specifications relate to trades or qualifications. However, they are also based on a concept of competence that accords far greater importance to the organisation of work and the contextual dimension of working activities. Briefly one could say that they define a place in a production process or service and that they seek to show the combination of knowledge and skills needed to occupy that place effectively. It is, however, interesting to note that the German social partners have always refused to permit the introduction of a system of modules that would enable people to obtain a partial validation of their skills as they progress towards a formal qualification. On the other hand, those training for a given occupation may opt for one or more fields of specialisation. These are tending to increase in number whereas the number of professional qualifications is decreasing: it has fallen from 600 in the early seventies to 370 today. In the same way, attempts to introduce several levels have come up against the basic principle of vocational qualifications as "a structured collection of vocational competences which are generally recognised and which structure the labour market". On the other hand, the social partners are gradually allowing in the specifications for the fact that firms are keen to have employees capable of planning, carrying out and taking responsibility for their own work. As a result growing importance is being accorded to "key" or "transverse" skills such as the ability to summarise, or to work with others. In the metal industry, for example, the social partners have since 1978 had the following training objective: "To render able to carry out the job learned in different firms, and different branches of industry and to perform skilled work in related fields; to render able to adapt flexibly to new working structures and methods of production and new technologies; to render able to participate in permanent, continuing or updating training courses guaranteeing occupational qualifications and mobility".

All the systems show the same concern to train people for a less closely defined

"All the systems show the same concern to train people for a less clearly defined job and to work more independently. The solutions adopted differ: expanding the field covered by the various trades and including more "generic" competences in one case, and defining standards of performance in a free market for skills in another."

job and to work more independently. The solutions adopted differ: expanding the field covered by the various trades and including more "generic" competences in one case, and defining standards of performance in a free market for skills in another.

This difference brings us back to a more theoretical debate on the subject of competence. As Bernard Rey (1996) said "We have two contrasting models of competence. In the first, competence is related to carrying out a function in a certain type of situation ... It may be described as a pattern of behaviour and is very specific. In the other model it is conceived as a generative capacity capable of resulting in an infinity of behavioural patterns to meet an infinity of new situations". The British situation would seem *a priori* to be based on the first concept of competence and the German model on the second. It is certainly not as simple as that since, as we suggested previously, the competences prescribed for the NVQs may sometimes be a sign of generic competence. Nonetheless, the construction of the standards always points to a different perception of what is learnt and validated. If we return to the example of the car mechanic, it is not the same to describe his competence as "ability to regulate carburation" or as "ability to diagnose major failures in the mechanical parts of a vehicle". The competence described in the second case is not only broader, it is underpinned by a practical understanding of the principles of car engine operation and the mastery of a series of instruments used in diagnosing a fault. It implies the confrontation of knowledge gained in practice with theoretical knowledge and involves a person's ability to adapt to a wide variety of situations. In the same way validation becomes a complex process that cannot be reduced to performing a single task satisfactorily.

Each of the two models involves symmetrical risks. The first can easily lead to the knowledge needed to take action being underestimated and the introduction of types of training that do not encourage personal development. This risk is not merely theoretical: in Britain the training bodies are partly assessed on the basis of their capacity to convey the skills corresponding to a given NVQ level in the shortest possible time. This may result in individuals with very good levels of performance being trained in a given range of tasks but still being largely unable to work independently (Steedman and Hawkins, 1994). The second risks encouraging school- type training and training individuals to analyse a problem but not cope with it in practice (this risk is limited in Germany by the dual-system).

This brief discussion of three models also tends to show that all the systems of validation face the same difficulties as to method, namely that of the transferability of validated skills, of ascertaining the knowledge underlying action, and of understanding the behavioural dimensions in given working situations. From this point of view the certification models which we have discussed tend rather to converge, even if they still bear the traces of the very different principles on which they are constructed. What continues to set them apart is more the type of control over the training system and the way in which certificates are recognised by employers, which govern the process of certification. However ingenious the validation procedures no system can disregard how society creates the collective benchmarks that are the link between the knowledge and skills acquired by individuals and the management of qualifications and skills by employers.

The situation in France

The current system of certification of occupational skills in France is based mainly on four complementary systems:

❑ *The certificates issued by the national education system are mainly concerned with initial training* and are designed to enable young people to acquire a basis of training for work while continuing to gain the further knowledge necessary for their personal development and integration into society. Training is generally organised in routes, such as that leading to the Certificat d'aptitude professionnelle (CAP) at level V or to the level III qualification of Brevet de technicien supérieur (BTS). Training may be obtained under the education system or through an apprenticeship, or through continuing training.

❑ *The certificates awarded by the Ministry of Labour are based on the concept of continuing training.* They relate mainly to technical knowledge and skills and are similarly graded by level.

❑ *Both these types of certificate are based on job or occupational specifications drawn up in agreement with the social partners on consultative committees (CPCs).* They generally relate to a specific training course. Validation generally takes the form of a final examination before a board composed of trainers and those skilled in the industry concerned. However, thanks to the law of 1992 on the validation of skills acquired by work experience and the system for "assessment of competences and skills acquired through work experience" (EVAP) developed by the Ministry of Labour, access to such qualifications may be on the basis of recognition of work-based experience.

❑ *Qualifications awarded by the CTH (Centre d'édtudes thermiques et énergiques) and certificates of vocational qualification (CQP) are less directly linked to following a course and relate more to the skills used in practice in firms.*

This "official"[8] certification system is relatively complete and thanks to its diversity the system is able to meet a wide variety of needs. These include the designing of complete initial training courses, introduction of a first level of qualification for young people employed in industry but without training (such as the CAP for engineering fitters recently developed in collaboration with the firm of Renault), certification of fairly highly specialised skills (such as the CQP for a particular method of plastics production), validation of certificates issued by firms and training bodies attesting to attendance of a course combining continuing training and work experience (such as those for pharmaceutical industry operatives), the issuing of certificates in emerging occupations calling for the validation of certain skills (such as the certificates issued by the Ministry of Labour for preparing pizzas and delivery to customers).

However the general balance of this system is not entirely satisfactory:

❑ The system for acquiring formal qualifications through validation of skills acquired on the job, which was introduced in 1992, has been slow to get under way and is far from meeting workers' expectations.

❑ The majority of young people nowadays continue their studies beyond the baccalauréat. Thus despite the rapid development of more work-orientated teaching institutions at university level (such as the university institutes of technology (IUTs) since the late sixties or the university professional institutes (IUPS) in the mid-eighties) certificates attesting to university-level technical and professional qualifications are not based on the same tripartite concertation and are less understood by the labour market. In 1996, 5,722 university degrees were conferred for 280 types of national qualification (first degrees, master's degrees etc.) to which must be added 2,789 diplomas whose content varies with each certification (vocational masters certificate, DESS (Diplôme d'Études Supérieures Specialisées), technological research diplomas etc.)[9].

❑ The various branches of industry were very cautious in creating CQPs. These were initially designed to certify the qualifications of young people who had followed a course of alternating on-the-job and off-the-job training after finishing their course of study (qualification contracts) but it was also accepted that these training courses could lead to a simple form of recognition of the skills acquired by the firm itself. The industries taking part in this system have given CQPs very different functions - certification complementing that of the national education system, recognition of skills leading to career advancement, a system of industry certification paralleling that of the national education system etc. Although several industries have recently begun to develop CQPs, the number awarded annually is not much in excess of 4 000[10].

❑ The role of the commission responsible for validation has become confused. In the absence of clear instructions and an expert capacity at higher level it fluctuates between the award of a "quality label" recognising the relevance of a certificate from the point of view of the evolution of jobs and qualifications and the

8) There are a number of forms of certification not covered by government regulations. They include certificates of qualification awarded by a given private training body, the weight of which is determined solely by its reputation. The "official" system also includes other forms of certification with which we are not concerned here, such as certificates of higher education, certificates awarded by other ministries, such as the Ministry of Social Affairs, the commission for engineering qualifications or - at quite another level - the competition for the best workers in France which recognises certain types of excellence in fields not always covered by school certificates (for example the competition rewards the best producer of carved wooden figures). We would point out that under the French regulations validation tends to mean official government certification. Certificates issued by the national education authorities automatically carry official sanction. The certificates of the Ministry of Labour are the object of a special procedure based on joint consultative committees similar to those of the national edcuation system. For a summary presentation of the different forms of certification in France and their origin we refer readers to Anne-Marie Charraud, Annie Bouder and Jean-Lous Kirsch - Le titre, la compétence, l'emploi - norms et usages de la certification, Bref-Céreq No. 114, November 1995.

9) Regarding the creation of university qualifications we would refer readers to the article of Pierre Dubois "Universités, les stratégies de l'offre de formation" *Formation emploi*, No. 58, April-June 1996.

10) A recent Céreq report for heads of lycées and collèges refers to the introduction of CQPs in three occupational sectors - metal-working, plastics production and the agrifood industry - see Anne-Marie Charraud, Elsa Personnaz and Patrick Veneau "Les CQP, de la construction des référentiels à l'évaluation des acquis" - *CPC Documents*, No. 96/8 French Ministry of Education.

"In France more importance is attributed to the different levels of qualification. The education system generally endeavours to construct complete routes and employers are often more sensitive to the level attained than to what has been actually learnt."

attributing a "level" permitting a possible match with the diplomas of the national educational system.

Generally speaking the system is dominated by the certificates awarded by the national education system which in a sense are the strong currency compared with other forms of certification. This is largely responsible for the preponderance of initial training in our system and for the importance accorded in France by both individuals and firms to the level of education attained. As Méhaut (1977) pointed out, in France a certificate of qualification functions both as an internal standard for the training system (the necessary condition for pursuing one's studies) and as an external standard for the job market (the condition for obtaining a job) but also plays an important role as a personal and hierarchical indentifier. This function as an indicator of social rank is far greater than in Germany, where professional certificates are in the main job market standards.

This fact has had the advantage of ensuring a continuing high standard of vocational training[11] despite the very great pressure on parents and the young people themselves to continue their general education for as long as possible. It has also contributed to a certain understanding of the system. Employers are in the main familiar with the various vocational qualifications which are frequently used for reference when designing other forms of certification. On the other hand, the situation has led to a certain ridgity in forms of certification and impeded the system's evolving to take better account of skills acquired through work experience and continuing training.

How does the system of certificates of qualification compare with the models previously described?

The specifications and means of validation of vocational qualification used in France are fairly similar to those in Germany. However since the occupational markets do not exist, the match between certificates of qualification and jobs of equivalent level is very theoretical, while firms' recognition of skills acquired in the course of initial training is far less marked than in Germany. This might be because the certificates are the object of a simple consultation between the social partners and not of a joint decision. On the other hand, in France much more importance is attributed to the different levels of qualification. The educational system generally endeavours to construct complete routes and employers are often more sensitive to the level attained than to what has actually been learnt. This combination of factors (specifications similar to those in Germany, absence of occupational markets and the importance of level attained) no doubt helps to make France a unique case of what might be called a "certificate fixation". A certificate is felt to reflect the qualities of the person and hence to justify his social rank. Its quality and reputation derive from the awarding body and its independence of the interplay of forces within the world of work[12]. This certificate fixation is best reflected in the system of the "grandes écoles" but also influences behaviour in numerous cases within the vocational training system. It starts with employers who regularly exert pressure to appoint people with higher qualifications in their field so that "the best" do not go elsewhere considered more prestigious.

In all, this system, which vaunts itself as being very egalitarian, leaves few openings for those who have not given proof of scholastic excellence at an early age to make progress in their working career. In France the number of people taking the vocational training route who reach a high level of responsibility in their firm is far lower than in Germany[13].

This description is undoubtedly too brief[14]. Nonetheless it enables us to show the very slow development of alternative forms of certification such as certificates of vocational qualification awarded by industry. Belief in the virtue of school certificates and the effect this belief has on young people's behaviour or on criteria for recruitment are such that any other form of certification can only appear as a lesser currency. In the same way it is undoubtedly this certificate fixation that explains the slow emergence of procedures for validating skills gained by work experience. The potential threat to the value of the certificate prevailed over the wish to enable people to gain a formal qualification in the course of their career.

11) If France is from this point of view in a less favourable position than the countries of northern Europe it suffers less than others from a disaffection with regard to vocational training. The creation of the DUTs and vocational baccalauréats is undoubtedly a major factor here.

12) Eric Verdier describes the French system as "a competition between individuals, the fairness of which must be guaranteed by the state, which confers on the latter an undeniable legitimacy, particularly since it is based on an objective criterion, namely scholastic performance which in principle is not subject to local and commercial influences. See "L'insertion des jeunes à la française: vers un ajustement structurel", *Travail et emploi*, No. 69.

13) One might again quote the example of the "grandes écoles": the position attained by former students at mid-career closely corresponds to the hierarchy of prestige of the "grandes écoles" from which they came.

14) A more detailed analysis of the peculiarities of the French system from this point of view will be found in the article by Eric Verdier mentioned above.

All this makes it very improbable that France will see the rapid development of a system offering a genuine alternative to the system of certification under the national education system[15]. There is a risk of at best creating considerable confusion and at worst of upsetting the present system without managing to construct another that is credible and effective. Types of certificate recently created that have taken better account of knowledge and skills linked to technological change and changes in work organisation are based on the certificates issued by the national education system. This is the case, for example, of the Certificat d'aptitude professionnelle (CAP) for an engineering fitter already referred to and the certificates in the field of cleansing created in cooperation with the Compagnie Générale des Eaux. Conversely various types of certificate offering an alternative to those of the national education system have gradually been reduced to certificates issued by schools or training bodies without managing to constitute a label. The exception here are those awarded for a number of occupations in highly specialised fields such as that for very skilled welders, with the impact on management and on the cost of this category of worker of which we are all aware).

New forms of certification will no doubt tend to emerge in France as elsewhere. They should be firmly directed towards validating the skills acquired in the course of work experience and promoting the diversification of vocational routes. They should be designed not to compete with school certificates but to complement them. It is a matter of the system's credibility. There is no guarantee that the existence of standards of competence for the use of a word processor and accounting methods will cause employers to give preference to people holding the new certificates rather than those holding the existing "Brevet de technicien supérieur de secrétariat-bureautique". They are even likely to go on using the BTS to filter out candidates and then regard any other form of qualification as an extra over and above the basic requirement. The looked-for impact on access to higher-level jobs for people without paper qualifications and trained on the job is unlikely to materialise.

It is interesting to note that the occupational fields in which alternative forms of certification have become more widespread are those in which employers run a system of training for that particular branch of industry. CQPs then tend to oust national education certificates and the sectoral qualification takes precedence. Nonetheless, a certificate of some kind remains all-important.

Also significant is the fact that access to certain occupations has recently been made subject to possession of a paper qualification. This is the case, for example, of a number of manual trades. Until recently only the occupation of hairdresser was reserved to those holding a CAP, but henceforth this will also apply to other jobs such as that of baker. A similar development is noticeable in the field of sport and social work and it is always the State that awards the certificates.

The resistance that has thus built up in the system compels a certain degree of internal development. Moreover, national education certificates have for several years seen developments testifying to an adaptability much greater than is generally imagined. We have already referred to the introduction of means of accessing formal qualifications through the validation of skills acquired on the job. After a difficult start the national education system created a number of procedures that should make access to qualifications by this route easier. Thus, most vocational qualifications have been reorganised in the form of modules so as to facilitate their gradual acquisition by adults with work experience. Considerable efforts are currently being made to link certain certificates more closely to CQPs for various branches of industry - for example by making the CQPs a stage on the way to obtaining a certificate. Certificates covering skills used in a number of branches of industry have been created to encourage the acquisition of fundamental technical knowledge and skills in fields such as the operation of process installations. Students are then able to diversify by specialising in a more specific field such as the manufacture of cardboard, glass, ceramics etc. either through alternating on the job/off the job training or through continuing training.

"New forms of certification will no doubt tend to emerge in France as elsewhere. They should be firmly directed towards validating the skills acquired in the course of work experience and promoting the diversification of vocational routes. They should be designed not to compete with school certificates but to complement them."

"The resistance that has built up in the system compels a certain degree of internal development."

15) To simplify we shall only refer here to the certificates awarded under the national education system but one would have to include in this analysis certificates awarded by the AFPA or other ministries.

"In practice training remains largely dominated by a scale of values that rates theoretical and technical knowledge higher than practical skills."

As a general rule the design of vocational qualifications is attributing growing importance to the exercise of competence rather than the mere possession of formal knowledge. This trend, which began about 15 years ago, was not without its difficulties but occupational profiles and methods of validation refer increasingly to work situations and occupational skills.

There is, however, still much to be done. In practice training remains largely dominated by a scale of values that rates theoretical and technical knowledge higher than practical skills. Scholastic excellence is still basically the yardstick used to measure occupational and social standing. French society remains very unwilling to admit that, as Vergnaud (1996) puts it, "thought begins with action". Formal knowledge is still very largely seen as a system extending downwards from the theoretical to the practical and not as a means of progressing beyond the thinking that underlies action. Again in Vergnaud's words (op. cit.) "The thinking underlying action will not always be sufficient in itself. It is radically altered when it is explained, debated and organised into a coherent system of concepts, principles, and statements, that is to say when it assumes theoretical form". But such changes put at stake a number of dimensions of social functioning other than the system of certification.

Conclusion

France, like other countries, will not be spared the gradual diversification of forms of certification. As Annie Vinokur (1997) has noted, in every country one can trace a new "downstream steering" of the training system characterised by the separation of the transmission of knowledge from the function of certification, the setting of standards for immediately applicable knowledge and the encouraging of individuals "to present themselves like goods on the market at the appropriate price". Steps in this direction should bear in mind the certificate mentality still dominant in France. The convertibility of training and on-the-job skill building has been established on a particular basis and the developments now under way are all the more interesting for that. Despite its handicaps the French system is undoubtedly better placed than others to successfully preserve collective standards in the matter of vocational training and qualifications while adapting the system to the requirements of large-scale education subject to the constraints of the work organisations of tomorrow. It is not the methods of certification as such that are holding back this development but rather the ability of those concerned to conduct an effective dialogue on the nature of the competences required for various types of work. From this point of view Michel de Virville's proposal that a national set of qualification benchmarks be set up within a tripartite structure to allow all validated qualifications whatever their basis (national certificates, approved certificates or CQPs) to be formulated in a common language expressing comparable realities is an ambitious objective but one which is bound to retain its topicality.

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Spanish companies and the new vocational training system

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The Spanish vocational training system is original and flexible and has great potential. It has been designed and developed with due attention to the most important training gaps identified by employers and is living up to expectations so far. However, for the moment this is only true of the regulated subsystem. It is too early to judge the continuing training subsystem, as it has only just begun to operate.

Introduction

Since the mid-1960s, there has been one basic objective running through Spanish education policy: to modernise the university system and to raise the rate of student intake to university degree courses. This policy (laid down in the 1970 Education Act) was an indirect cause of the relative decline of vocational training courses. Hitherto, these had been firmly rooted in occupations and trades, some taught at specialised colleges and others at apprentice schools sponsored by big business.

In force for roughly 20 years, the 1970 reform was beneficial in that it filled historical gaps in higher education; however, it unintentionally spoiled the market for people with good technical qualifications: society and business somehow came to see vocational studies as the choice of the least gifted young people. While it is true that some vocational training courses acquired a measure of prestige, the predominant attitude in business has been one of mistrust and misinformation – so much so that it has been common to find people with high formal qualifications (university) competing for jobs with holders of vocational training qualifications or no vocational qualifications at all.

Following its beginnings in 1976, the political transition consolidated by the Constitution of 1978 meant that the necessary educational reforms were deferred in the interests of political stability and the greater urgency of economic measures. This situation began to change in the 1980s, when the foundations were laid for a new system, one of whose most novel elements was that it guaranteed closer links between training and employers.

The new training system emerging from the 1990 Act

About ten years ago, work began on reform of the education system, with special emphasis on the vocational training subsystem and its links with the education system as a whole, and between vocational training and industry.

The Education (General Regulation) Act (LOGSE) of 5 October 1990 was finally passed in 1990 after several years in preparation. Its provisions as regards vocational training have been implemented gradually since 1993; before that, there were some preliminary experiments whose results were taken into account in building the model.

The LOGSE provides for integrated treatment of the regulated (or initial in the most widely accepted European term) vocational training subsystem and the occupational (or continuing) subsystem. Both subsystems follow the same guidelines and both seek to enlist sufficient business co-operation to ensure that the training offered is suited to the demands of employers. However, there is an important institutional difference between the two in that the regulated subsystem is led by the Ministry of Education and Culture and the occupational subsystem by the Ministry of Labour and Social Security, on top of which there is considerable executive dispersion at regional and local levels. There is some logic to this separation for the purposes, say, of integrating continuing training into employment policy; on the other hand, there is some risk of overlapping or at least emulation.

"(...) in the 1980s, (...) the foundations were laid for a new system, one of whose most novel elements was that it guaranteed closer links between training and employers."

"The intention is that at 16 (...) everyone should have the minimum vocational qualification to start work."

The regulated or initial vocational training subsystem

The figure overleaf summarises the connections linking the mutual vocational training with the rest of the education system and with the labour market. A number of basic elements of the new system are worth looking at:

❑ all pupils will receive vocational instruction throughout Compulsory Secondary Education (ESO) and *Bachillerato* (final leaving certificate, required for university entrance). The intention is that at 16 (the normal minimum leaving age, which is also the minimum working age) everyone should have the minimum vocational qualification to start work. This qualification is acquired through the subjects taught in basic vocational training.

❑ students who do not receive the ESO secondary leaving certificate through failure to meet the set objectives may opt to follow a social guarantee programme. There are various kinds depending on the objectives pursued – some are more academic and some more vocational. Academic programmes are intended as a second chance for students who have difficulties continuing their studies; vocational programmes provide minimum vocational specialisation to ease transition onto the labour-market;

❑ an ESO pass entitles students to enter intermediate specific vocational training or *bachillerato*, while the *bachillerato* entitles students to go on to university or higher specific vocational training.

❑ under the new system, the immediate aim of the various specific vocational training options (including most social guarantee programmes) is entry to working life. This means that students completing the various levels are sufficiently qualified to work with a given degree of responsibility and independence. In fact there is no means of automatic transition from the intermediate to the higher levels. However, there are access mechanisms (tests) which afford access from social guarantee programmes to intermediate vocational training or *bachillerato*, and in some cases from intermediate to higher vocational training and from there to related university courses.

❑ in the new system, all students must successfully complete a workplace practice module to qualify for the relevant certificate. Under the old system, this type of training was voluntary. The practice module takes up about 20% of the training course.

❑ there are two basic standards for course duration: 2 years including the practice module (about 2000 hours) and 1 year plus the practice module (about 1250 hours). These times may seem short in comparison with other European systems, but there are two points that should be borne in mind:

• access to vocational training courses requires a solid basic education, which allows for greater technical specialisation.

• in Spain, any newly-qualified person enters the labour-market by way of a training placement contract (minimum 6 months, maximum 2 years), which makes up for the shorter time spent in regulated vocational training, and particularly in the practice module.

Specific vocational training is organised in vocational families (23 in all). These in turn are organised in courses (135 so far[1]), of which 61 are intermediate level and 74 higher level. Social guarantee programmes are also organised in vocational families.

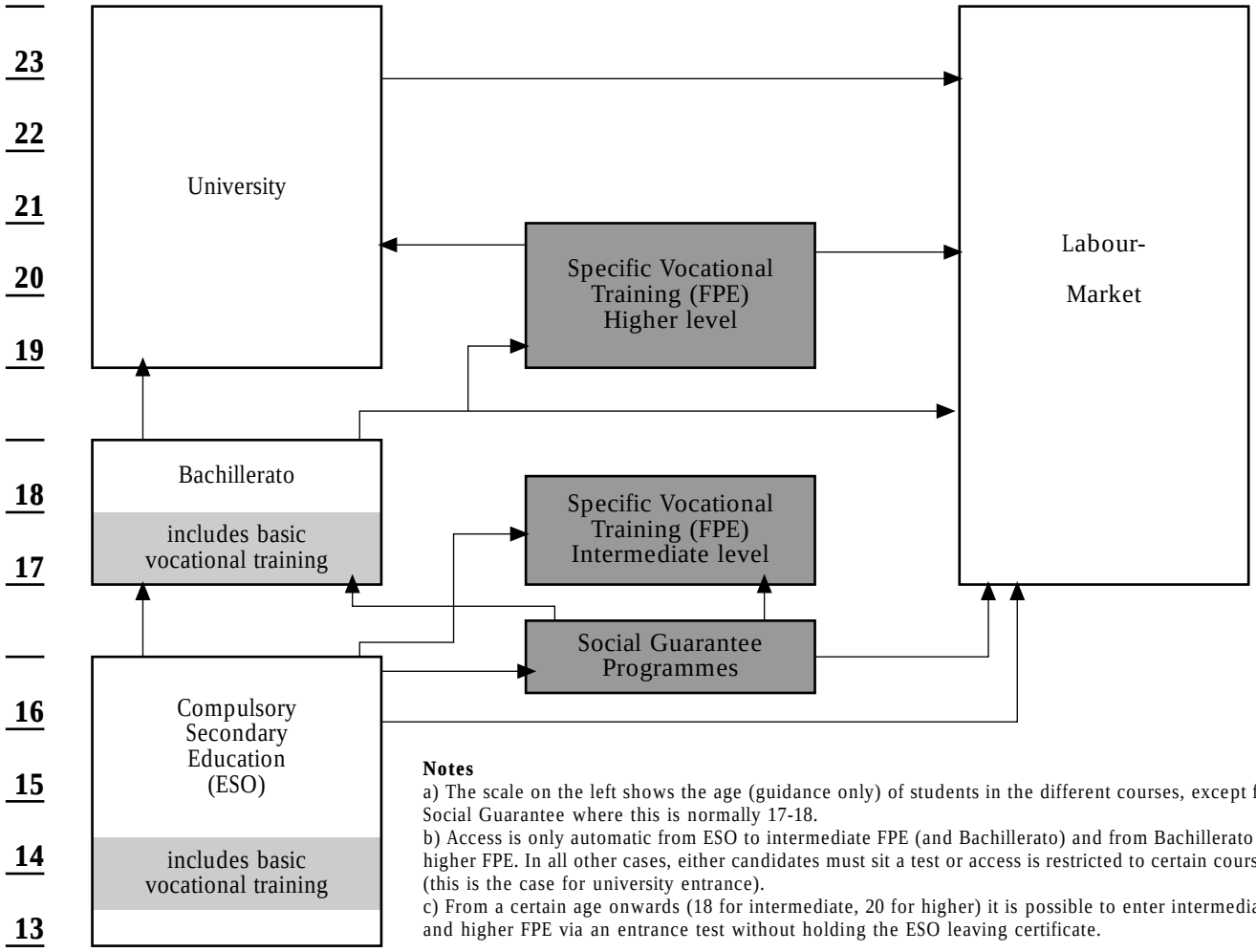
Allied industries have been active in the design and specification of each family. Mixed teams from the educational/labour authorities and industry carried out indepth studies of economic and socio-occupational characteristics to draw up a list of basic training requirements.

The methodology followed in designing the training supply thus ensures that supply matches demand. Moreover, the modular arrangement of courses makes it easier to comply with the legal requirement of periodic revision (in principle, every 5 years), which is intended to ensure that courses adapt to employers' needs as they are identified.

The initial training side of the Spanish education system is therefore basically

1) The Crafts and, in part, IT and Socio-cultural and Community Services families have not yet been developed.

Vocational Training in Spain. Regulated subsystem



Notes
a) The scale on the left shows the age (guidance only) of students in the different courses, except for Social Guarantee where this is normally 17-18.
b) Access is only automatic from ESO to intermediate FPE (and Bachillerato) and from Bachillerato to higher FPE. In all other cases, either candidates must sit a test or access is restricted to certain courses (this is the case for university entrance).
c) From a certain age onwards (18 for intermediate, 20 for higher) it is possible to enter intermediate and higher FPE via an entrance test without holding the ESO leaving certificate.

equipped to meet the needs of employers, who have played an active part in designing supply (geographically as well), and adequate mechanisms are in place to ensure adaptation to future requirements. How aware employers generally are of these mechanisms is a moot point, given that the enterprises participating in the design of supply tended to be large rather than small businesses. The Ministry of Education and the competent regional authorities are carrying out a fair amount of dissemination with the help of employers' and allied organisations, while employers are being asked to assist in developing the practice modules.

The National Institute of Quality and Assessment, a body set up under the LOGSE to measure how far the various elements of the system are meeting their objectives, has yet to produce full reports, so that it would be hazardous at this time to venture an opinion on how well the training system is responding to employers' requirements.

But there are occasional indicators[2] on specific training. The first of these is **the good reception of the practice modules by employers**. To date there has been no great difficulty in finding training posts, albeit the reform is only halfway to full implementation (the new system is expected to fully replace the old as from the year 2002).

Another equally important indicator is the **high level of work entry** among new qualifiers in the firms where they did their practice (around 30%). In fact this may mean that firms are interested from the

"(...) the Spanish education system is (...) basically equipped to meet the needs of employers, who have played an active part in shaping the supply (...)"

2) Information supplied by some Chambers of Commerce which are helping to liaise between education centres and companies in order to find training places.

"Certificates of proficiency are the counterpart in the continuing training subsystem of initial vocational training certificates."

"(...) the recent regulation of the continuing training subsystem had a further undeclared motive, which was to recognise some level of proficiency among several million workers who received no certificate (...)"

outset in taking on these students as employees and take advantage of the practice arrangements to make a prior selection. Indeed, this appears to be one of the main advantages that employers see in taking on students in training placement, especially as they have no contractual obligation towards the student during the training period, the contract being with the training centre. But there is one point that contradicts the hypothesis that acceptance is closely linked to an existing intention to employ, and that is that the vast majority of employers repeatedly take on new students in training placement. Moreover, we are finding that the highest rate of job entry is in the social guarantee programmes (in some cases as much as 100%), where training placement is not even compulsory.

The occupational or continuing training subsystem

The continuing training subsystem embraces all activities outside the regulated or initial framework. This is a very heterogeneous collection covering official programmes side-by-side with spontaneous initiatives, both public and private, from inside and outside industry.

The regulatory framework has changed radically in the last few years, especially since 1995. That year saw publication of a Royal Decree containing the guidelines to be followed in preparing **certificates of proficiency** that attest to skills acquired through continuous training programmes and in-work experience.

Certificates of proficiency are the counterpart in the continuing training subsystem of initial vocational training certificates.

Up to the time of writing (October 1997), 116 certificates have been published and a further 25 are being drafted or processed for publication. Each certificate belongs to a vocational family in the same way as specific vocational training courses do, but the list of continuing training families differs slightly from initial training. This is because continuing training is slanted towards occupations as such, while initial training is slanted more towards the expected evolution of occupational requirements.

One of the objectives of certificates of proficiency is to achieve greater clarity and transparency of the system of qualifications among the working population; this is very unclear in Spain, particularly in the case of people who have no officially recognised academic or vocational qualification. So it is important to note that the recent regulation of the continuing training subsystem had a further undeclared motive, which was to recognise some level of proficiency among several million workers who received no certificate upon leaving initial training subsystem and are unwilling – or unable – to work for one now or in the near future.

Candidates for a certificate of proficiency must take a training course that is structured in much the same way as specific vocational training courses, but with two main differences: they are considerably shorter (around 800 hours) and the content places more emphasis on practice than theory (practice accounts for 60-70% of training time).

The continuing subsystem adheres to the general principles demanded of any modern training system (close connection with the productive fabric, flexibility, pragmatism, etc.), but it has to meet two very different kinds of demand as regards individuals: that is, people in employment (whose main aim is to have their proficiency officially recognised), and people out of work (where the main point is to achieve a qualification in order to find a job). It will be no easy matter to combine these demands.

For those in work, who should have no difficulty in covering the practice periods, the process is too theoretical. For those out of work, the main problem will arise in achieving really effective practice periods. In either case, most continuing training contains a strong academic element.

Because the new continuing training scheme has not been long in place, Spanish employers do not yet have a clear idea of its potential. In recent years there has been spectacular growth of initiatives targeting people in work based on pur-

posely-designed programmes, thanks to the financial resources available under the Continuing Training Agreements signed in late 1992. In future, these resources will probably be channelled into initiatives involving certificates of proficiency.

As for initiatives targeting the unemployed, which are largely inspired by the National Institute of Employment (INEM) and its regional counterparts, we may look forward to some reorientation of the training supply so that it more closely matches employers' overall needs and hence provides more employment opportunities for the participants in these schemes.

Conclusion

The Spanish vocational training system is original and flexible and has great potential. It has been designed and developed with due attention to the most important training gaps identified by employers and is living up to expectations so far.

However, for the moment this is only true of the initial training subsystem. It is too early to judge the continuing training subsystem, as it has only just begun to operate. My hypothesis is that employers will be wary of it, given that Spanish employers generally have little faith in the relationship between certificates and real skills. This is true even of the public sector, where paper qualifications are simply a prerequisite for sitting entrance tests and the holders of many jobs are overqualified.

The process of effective integration in the EU, particularly once economic and monetary union is consolidated, will probably serve to assist convergence. But I believe that such a narrowing of differences would come more quickly with a formula like the skills pass (portfolio) than through a complicated system of recognition of qualifications or certificates (which would obviously have to be recorded on the card). The problem is that the skills pass also involves some complexity. Moreover, who would validate its contents? How would it be updated? How could it be made operative? All these questions partly explain why this is an ongoing story although it has been discussed at length in various EU fora. In my opinion, there is no blanket solution. An individual's training background is so complex that any qualifications, diplomas or certificates that he holds may only give a partial picture – and in some cases possibly a biased picture – of their training potential. But it is true nonetheless that advances like the recent one in Spain help employers to pre-select candidates for a given job, especially in the field of initial training.

"(...) an individual's training background is so complex that any qualifications, diplomas or certificates (...) may only give a partial picture – in some cases possibly a biased picture – of their training potential. (...) advances (...) help employers to pre-select candidates (...)"

Basic references

Centro Nacional de Recursos para la Orientación Profesional (1997): *Fichas para la Orientación Profesional, 2ª edición*. Ministerio de Eucación y Cultura (Secretaría General de Educación y Formación Profesional) Madrid. (This is a bulky document plus a CD-ROM which contains practically all the information necessary to understand the initial training system).

Consejo Superior de Cámaras de Comercio, Industria y Navegación de España (1994): *La Formación Profesional en el nuevo contexto europeo.* Madrid.

RD 797/1995, of 19 May, which lays down the guidelines for proficiency certificates and the corresponding minimum contents for occupational vocational training. On the basis of this Royal Decree, further subordinate Royal Decrees are being issued for the various proficiency certificates.

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Assessment of non-formal learning: the quality and limitations of methodologies

There are many methodologies to assess non-formal learning, but are they able to assess and validate what they are supposed to and how can they be improved? Different methodologies can be examined according to their validity and their and reliability. However, validity and reliability are influenced by the concept of the knowledge being measured, which, in turn, affects the criteria used in the assessment process. Satisfactory methodologies have to consider the specific character of non-formal learning, providing guidelines, as well as limitations for the design of assessment.

Introduction

During the last 5 to 10 years, a number of countries, inside and outside Europe, have introduced methodologies and systems for the identification, validation and accreditation of non-formal learning (CEDEFOP: 1997).

The focus of these initiatives has been on learning at the workplace, in leisure activities and in the home. In general terms, the objective seems to be to increase the visibility of learning taking place outside formal training and education institutions and systems. Credit is thus given to individuals, enterprises and society in general, for the indispensable role of this "hidden" or "tacit" (Polanyi 1962) learning.

No single objective can explain the sudden and almost global interest in the identification and assessment of non-formal learning. However, the following elements are of central importance:

❑ for individuals, accrediting or recognising non-formal learning may ease their entrance into the formal training system as well as improve their labour market eligibility;

❑ for enterprises, accrediting or recognising non-formal learning may be of importance in order to increase their potential for human resource management;

❑ for societies as a whole, accrediting or recognising non-formal learning may be of importance in simplifying the transfer of skills between different spheres (education, work, home) and in order to improve the allocation of resources.

Transparency and the transfer of skills are thus two central issues. Identification and validation of non-formal learning can be viewed as a way of "accounting" for existing competence-resources, on an individual level as well as for enterprises and society. If such methodologies were developed and accepted, it would be easier for individuals and enterprises to "keep stock of" their resources, thus providing a better basis for their use and allocation.

The importance of this is clear from an economic perspective. The importance of intangible values (knowledge, skills etc.) has been increasing relative to the importance of tangible values (like machines, buildings etc.). As long as no reliable methodologies for the identification and validation of these intangible values exist, their factual roles seem to be underestimated (OECD:1996), in budgets as well as in the management of existing resources.

This article focuses on some of the principal challenges relating to the identification, validation and recognition of non-formal learning. Through contributions from research, it also shows if, and how, they have been addressed. The article debates two closely related questions, those of the validity and reliability of methodologies for the identification and validation of non-formal learning. These concepts serve as starting points for a discussion of the problem of "measuring" non-formal learning. The article concludes with a discussion of some of the limits of these methodologies.

The introduction of methodologies to assess non-formal learning is not so much a matter of finding optimal solutions as a matter of finding satisfactory solutions

Table 1: Selection of countries having introduced methods and systems for validation of prior and/or non-formal learning

Country	Year(s) of Introduction	Main Features
Australia	1990, 1995-96	Introduction of a National Training Board (1990), responsible for national standards of competence, defining the context for systems such as "Recognition of prior learning" and "Validation of experiential learning".
Finland	1994	A system of "Competence-based qualifications". Its main purpose is to provide validation and certification irrespective of the way in which the skills have been acquired.
France	1985, 1991, 1992	Law introduced laying down the possibility of recognising prior learning (1985) leading to the general introduction of the "Bilan de competence" (1991) and "Centres de Bilan". These initiatives lead to individual "Dossiers" or "Portfolios" of competence.
Germany	1974-97	No overall system for assessing non-formal learning. Some systems, like the "Bildungspass" have been used in a limited scale. Some projects, have experimented in the field of Portfolio development etc. In the ordinary education and training system, various tests, like the Externenprüfung" and "Begaptensonderprüfung" are used to assess experientially based competences relative to the formal system.
Ireland	1993-94	Introduction of a system for "Recognition of Prior Learning" within the certification framework of FÁS (Training and Employment Authority in Ireland)
Japan	1958, 1969, 1985	Growing importance of "Trade Skills Tests" (1958) within a national system of Skills Standards (1969, 1985), supported by Ministries of Education and Work
Netherlands	1993-97	Development and testing of a methodology for "Accreditation of Prior Learning". CINOP, the "National Centre for Innovation of Vocational Education and Training" is responsible, supported by the Ministry of Education. The new methodologies use the Educational and Vocational Training Act (WEB)as an important point of reference.
UK	1986, 1991	Introduction of the general system of National Vocational Qualifications (1986), paving the way for schemes such as "Identification of prior learning", "Accreditation of prior learning" (APL) and "Accreditation of prior experiential learning" (APEL).

(Simon 1958). The limits set by time, capacity and cost must be considered and have to be balanced against the demands for methodological and theoretical consistency.

The quality of the methodologies

To show the diversity and wide scope of current methodologies, some empirical examples are given and the concepts of learning and knowledge, that implicitly underpin the different methodologies, discussed.

The development of methodologies for the assessment of non-formal learning depends on the integration of research-findings from outside this, so far, narrow area. Consequently by presenting a limited number of research approaches to learning, this article aims to add some elements to the debate on methodological criteria in this field. By using existing research on learning processes (and learning products), it will be possible to indicate some critical points which have to be recognised in order to improve practice.

Diverse approaches

Reference can be made to a multitude of methodologies to assess non-formal learning. In part, this reflects the growing number of countries involved (see table 1). But it also reflects the diverse approaches to assessment and validation in

different countries and the complexity of the processes involved.

Taking the "Bilan de competences" in France as an example, the following phases are central (CEDEFOP 1997, Perker and Ward: 1994 & 96):

❑ *a preliminary phase* – intended to lead the candidate to define and analyse his or her needs, during which full information of the methods and techniques should be given;

❑ *an investigation phase* – to help the candidate to state his or her values, interests and aspirations, general and occupational knowledge, skills and aptitudes and identify motivation;

❑ *a concluding phase* – in the form of personal interviews where the aim is to review the details of the results with the candidate. The agent offering a "Bilan" then draws up a summary, but only the candidate has the right to pass it on to a third party.

A parallel can be found in the British system of Accreditation of Prior learning (APL). The APL differs from the "Bilan" as it leads to the award of a formal recognition, such as a diploma or certificate, or to partial recognition in the form of a credit towards a national vocational qualification (NVQ). In this way, can be seen as a "bridge" between the non-formal and formal learning systems.

The APL-methodology may be divided into three main steps (CEDEFOP 1994):

❑ general information about the APL process;

❑ a session where the candidate, assisted by a mentor, reflects on his or her experience, relevant skills and knowledge. Part of the support may be provided in workshops for a number of candidates aiming for the same qualification. The mentor takes part in the preparation of the portfolio which should include statements of job tasks and responsibilities from past or present employers, examples of relevant "products" and results of tests or specific projects;

❑ an assessment of the candidate's portfolio by an assessor who normally interviews the candidate and may ask questions to test their understanding of the work. Additional evidence may be requested.

The assessment process is in essence the same as that used in the traditional system, but differs in the way that the candidate provides evidence of past activities rather than of skills acquired during the current training course.

The Dutch approach (Bom, Klarus & Nieskens 1997), currently being tested in different sectors, can be divided into the following steps:

❑ an interview of the candidate by the assessor before the test begins on the planning of the actions inherent in the task;

❑ the central element of the assessment is a predefined task, carried out in an actual or simulated situation. The most central elements of the competence in question are represented in the task, thus allowing the candidate to show if he or she commands the necessary skills in a realistic context. A structured checklist is used to guide the assessment;

❑ on completion of the task, the candidate reflects on how the task was performed and how other situations/tasks within the same domain could have been solved by the same or related methodologies and approaches.

Being linked to the standardised and formalised qualification criteria defined by the Educational and Vocational Training Act (WEB), the Dutch methodology may be labelled as criteria-referenced testing. This means that the candidates score is compared with substantive qualification criteria, not relative to a (norm) group (Klarus and Blokhuis: 1997, p.20). Basic to this approach, is the notion that any (instrumental) activity can be divided into three distinct sequences: planning, execution and evaluation. From this, three parallel assessment aspects and methodologies are derived. Planning is linked to the methodological ability of the candidate, which can be assessed through a criterion referenced interview and by evaluating work preparations. Execution can be assessed through the observation of the process it-

self or of the result of the process. Evaluation is linked to the reflective abilities demonstrated by the candidate, which can be assessed through a criterion referenced interview and through a result assessment (Klarus and Blokhuis, op.cit.).

All these examples show that a combination of interviews, diagnostic assessments, self-assessments and tests are used to assess non-formal learning. The approaches may lead to different final results, the most common being the portfolio or formal recognition. The French, British and Dutch examples are oriented towards guided processes, using dialogue as an inherent approach in the assessment. Other examples of this process can be found in Ireland, Australia, and Canada.

A balanced dialogue and the use of self-assessment (and self-understanding) to improve the quality of the assessment process is fundamental to these approaches. They also recognise the individualistic and contextually specific character of the learning being assessed. Each candidate is, more or less, unique; and the methodologies must reflect this. The scope of the assessment is, however, reduced by the strong link to various national reference structures like the NVQs in the UK and the Dutch WEB. Assessments may thus be highly consistent with the standards set within these systems, but not necessarily consistent with "real life" learning and competence standards.

These approaches, based on dialogue and guidance, are contrasted by another approach, linked to electronically based expert systems. For several years, efforts have been made to develop standardised tools for assessing non-formal learning. Three motives are central to these approaches, namely:

- *cost* – guided approaches, sometimes combined with authentic task-assessments, are expensive and the question arises as to whether public authorities, enterprises or individuals pay;
- *capacity* – the complexity of the processes limits the number of candidates it is possible to assess, thus reducing the overall potential offered by the system;
- *neutrality/objectivity* – although based on checklists and predefined procedures, uncertainties as to the reliability of the assessments can be observed. Since the personal judgement of the assessor(s) cannot be overlooked and biased assessments may result.

For several years, work has been conducted at a sector, national and European level to develop reliable, electronically based assessment tools, focusing on the cost, capacity and the neutrality criteria.

The Irish initiative to develop a methodology for the accreditation of prior learning supported by computer software, is an example (Lambkin & Lyons 1995). The project operated for 1992-94 and had four objectives.

- that the expert-system should enable individuals to identify qualifications relating to selected occupational areas;
- to assist the individual in accessing the assessment standards underpinning certain qualifications, making him or her aware of the requirements to gain a certain qualification;
- to provide a standard method for developing a portfolio providing evidence of skills to support claims for credit towards qualifications;
- to help the individual to clarify additional training needs.

It has been tested in a limited number of sectors, supplementing dialogue and guidance processes.

There are other examples to this in several countries, most notably France and the UK. IBM has produced a PC based system covering various elements of the NVQ-field. This system includes CD-ROMs giving an "Introduction to the NVQ-system", a "Competency Adviser", a "Learning Centre Manager" and a "Personal Learning System" (IBM 1995).

Currently, the most articulated support towards the development of electronically based expert systems, comes from the European Union, forming parts of policy statements and practically through projects supported by the European Commission. In the sketch of a "European Skill Accreditation System" (1996), one of the central objectives is to give everybody the possibility of having their skills assessed

"(...) these examples show that a combination of interviews, diagnostic assessments, self-assessments and tests are used to assess non-formal learning. The approaches may lead to different final results, the most common being the portfolio or formal recognition."

"...approaches, based on dialogue and guidance, are contrasted by another approach, linked to electronically based expert systems. For several years, efforts have been made to develop standardised tools for assessing non-formal learning."

"Validity and reliability, however, can be taken as starting points to present and discuss the basic challenges faced by the methodologies."

and documented in the format of a Personal Skills Card (PSC). Electronic tools made universally accessible through the Internet are of crucial importance to this initiative.

However, it requires the identification of a number of "knowledge areas" that can be assessed at a European level. They must be defined and broken down into coherent basic units classified by increasing order of difficulty. This should, according to the European Commission, make it possible to assess an area of knowledge from the most elementary to the highest level. It is accepted that there is no fixed list of knowledge and skills areas which could be tested at a European level. But if the subject is well established (with no major doctrinal controversies), and if the scope for national and cultural subjectivity is reduced, it could be a part of the system. The following examples are given:

- *core knowledge areas* – such as mathematics, sciences, information technology, geography, foreign languages;
- *vocational and technical skills* – such as marketing, business management techniques, accounting;
- *key skills* – such as logistics, organisational techniques, communication, decision making, risk assessment and risk management, negotiating skills and interpersonal skills.

The accomplishment of this accreditation task at a European level would be based on the following:

- a skills assessment and validation using a range of user-friendly validation software packages linked by a telematic network (Internet) to a central server which would deliver interactive tests on demand, process the results and validate skills at the level tested;
- candidates wishing to validate their skills would be able to take these tests anywhere in Europe and as many times as necessary in order to pass;
- the skills level would be registered on a PSC, which people could build up at the pace and in the manner which suits them.

As the system eventually gains recognition, the PSC would complement paper qualifications and become a real passport to employment.

The idea of a PSC is currently being followed up through a series of transnational projects. More projects are envisaged during 1997.[1] The projects are, according to the Commission (1997, op.cit.):

"…designed to compile a reference compendium of knowledge and skills arranged into elementary units which will provide a basis for developing interactive evaluation software which can be put out over the Internet and whereby the level achieved by the candidate can be validated. Despite the controversial nature of the automated option, the response is positive and shows that a genuine demand exists among individuals, the business sector and trade organisations. The objective of opening up access to recognition of knowledge and individual skills, and giving everyone the opportunity to update their skills, is welcomed."

Except for the reference to "the controversial nature of the automated option", the Commission does not go into details on what this controversy may be based upon. Apart from the obvious differences in capacity and cost between the "dialogue" and the "automated" approach, a more in depth elaboration on the strengths and weaknesses of these approaches has not, so far, not been conducted.

Diverse conceptions of knowledge and learning

It has been suggested that the methodologies can be evaluated according to their *validity*, *reliability*, *acceptability* and *credibility*. The concepts of acceptability and credibility are closely related to the social value and status attributed to the assessment results. The somewhat broader concept of *legitimacy*[2] is discussed elsewhere in the Journal[3]. Validity and reliability, however, can be taken as starting points to present and discuss the basic challenges faced by the methodologies. In other words we can ask, "Are the methodologies able to assess and validate what they are supposed to assess or validate, and how can they be improved?".

Validity, according to O´Grady, refers to the degree to which test scores or other

1) 34 projects have been selected by the Commission in order to cover as wide a range of subjects and occupational areas as possible. The projects seem to have been selected along the criteria presented above; *Basic knowledge* (mathematics, chemistry etc.), *Technical and occupational knowledge* (banking, marketing, assembly, industrial processes, law etc.) and *Key Skills* (including horizontal skills)..

2) We prefer to use the concept legitimacy instead of O'Grady's acceptability/credibility. The concept of legitimacy has traditionally been related to Max Weber's classical typhologies of legitimate authority; legitimacy based on tradition, charisma and rationality. Today's debate is more focused on the relationship between authority and normative agreement (Habermas 1981, Held 1987).

3) See pages 68-74.

measures predict some practical criterion (for example those defined by the British NVQ standards). Validity is, therefore, a quality of the assessment process. It is a measure of the degree to which the assessor's decision, in respect of an individual's evidence, accurately reflects that individual's level of competence.

Reliability, according to O´Grady, reflects the consistency of scores obtained by the same people when re-examined on the same test on different occasions, or with different sets of equivalent items, or under other exam conditions. Reliability is also a quality of the assessment process, and is a measure of the degree to which a candidate presenting his or her portfolio of evidence will get the same results irrespective of when, where or by whom he or she is assessed.

Research on traditional examinations (Kvale 1972, 1977, 1980, 1993, Fredriksen 1984) gives us important clues on the basic problem of improving the validity and reliability of validation and assessment. Statistically based research in both psychology and sociology on the validity and reliability of formal validation and examination processes has been conducted. In this context, examinations are understood as *psychometric tests* and the focus has been on their ability to conduct a legitimate *selection* of students and ability to *predict* the future careers of students.

These approaches suggest agreement that:

❑ the validity of examination processes is low, based on their ability to predict future achievements and illustrated through scores in the range 0.00-0.10 between final grades and later job success. Higher validity has been reached in the relation between examinations and future careers in the educational system itself, with scores of plus/minus 0.40;

❑ reliability is low, at least if judged on the basis of the consistency among those taking part in the assessment or validation. Using grading of essays and oral examinations as examples, scores of 0.60 and 0.30 are normal, contrasted by the almost perfect reliability of multiple-choice test approaches, with scores up to 1.00.

These low scores are important reasons for the basic critique of traditional exams that they are, amongst other things, subjective, inconsistent and socially biased.

Research seems to concentrate on the reliability question, due, perhaps, to the problems related with establishing clear criteria for judging validity[4]. Zeller (1994), argues that this problem is caused by the domination of quantitative, survey oriented research approaches, which when used in isolation run the risk of missing important aspects of the issue in question. Zeller points to the diverse understanding of validity in different research traditions. Validity from the quantitative point can be characterised as "chasing the decimal point". From the qualitative point it can be characterised as "pressing the flesh", seeking deeper knowledge of social phenomena developed in intimate relationship with data (Strauss 1987). From the experimental perspective it can be characterised as "producing the effect". Individually, these approaches do not provide a complete answer to the question of how to ensure validity. Methodological diversity rather than specialisation seems to be needed.

The problems of validity and reliability faced by traditional, formal examinations, are more serious in the assessment and validation of non-formal learning. This is because learning paths (in principle) are individual, and knowledge (in principle) is situated (Lave & Wenger 1991) and context-bound. To address these problems new elements must be included in the discussion. The question of how to improve validity and reliability cannot be answered without asking what kind of learning and what kind of knowledge are we dealing with. Or even more fundamentally, what kind of knowledge concept are we basing our discussion of validity and reliability on.

Three different kinds of knowledge are easily identified (Kvale 1993):

❑ dogmatic knowledge deriving, for example, from God or some other divine authority. This knowledge is not open to question. It is either accepted or rejected as non-existent;

❑ objective knowledge, derived from nature and possible to delimit in an ab-

"The problems of validity and reliability faced by traditional, formal examinations, are more serious in the assessment and validation of non-formal learning. This is because learning paths (...) are individual, and knowledge (...) is (...) context-bound. (...) The question of how to improve validity and reliability cannot be answered without asking what kind of learning and what kind of knowledge are we dealing with."

4) Kvale (1993) is dealing with this problem by discussing some of the "meta-processes" involved in examinations. Firstly, the examination can be understood as a test of the student and his/her knowledge. In this sense, the elements of *reward* and *prediction* are central. Secondly, examinations may be understood as a "baptism" of the candidate, an initiation into the "brotherhood" of a discipline and a test of whether basic values are understood and shared.

"The objective conception of knowledge is clearly present in the European Commission's approach towards electronically based expert-systems. (...) In spite of this, the normative or situated conception seems to be the dominant one, underpinning the operational systems of several countries."

solute way through the question of true or false (Habermas 1981a);

- normative or socially created and defined knowledge, derived from the human domain. This is a situated and context-bound knowledge (to some degree relative), and should be evaluated through the question of whether it is accepted or not.

Our discussion will focus on the distinction between objective and normative or social knowledge, which is necessary to understand the methodological problems associated with the assessment of non-formal learning. This distinction can also be formulated as a distinction between a positivistic and a hermeneutic, or interpretative approach to the assessment of non-formal learning.

Objective knowledge consists of objective facts (true or false). This implies that knowledge consists of isolated facts with logical rules for combining them. In this "paradigm", the questions of validity and reliability can be viewed as a pure technical or instrumental question of finding the best methodology for deciding on what is true and what is false knowledge. Improvement of methodologies could, for example, be anticipated through introducing courses for assessors in evaluation techniques, measurement scales for assessors, statistical monitoring etc.

The optimal technique, for objective knowledge, would be technologically based multiple-choice tests, thus improving validity and reliability. The European Commission's initiatives to develop electronically based expert-systems can be related to this objective concept of knowledge. The Commission's insistence on identifying "objective" and "delimited" areas of knowledge, that can be assessed in a non-biased way, illustrates this.

According to the normative or socially-created knowledge perspective, which might also be referred to as hermeneutic perspective, a more open approach can be conceived. Within this, the quest for absolute validity and reliability has to be diminished. The focus must change from the objective and delimited learning product to the learning process. From the point of view of the objective approach, this may be interpreted as a subjective approach, as a certain amount of judgement is needed. But it is a normative approach in the sense that dialogue and discourse are necessary to arrive at a mutual understanding of the character and the quality of the learning involved. Finally, it is a situated approach in the sense that learning is context-bound, and has to be assessed as such.

Assessment according to this paradigm is thus something different from that of the objective paradigm, namely, the wish and the ability to arrive, through a rational discourse, to a shared opinion (assessment) must be paramount. Some of the approaches presented above, for example the French and British cases, may be interpreted as being related more to hermeneutic understanding. Using dialogue as an important tool, they focus on aspects like self-realisation and personal learning through the assessment processes.

Implicitly, these two concepts are present in the day-to-day business of developing operational methodologies. The implications of choosing one or other may be profound. The objective conception of knowledge is clearly present in the European Commission's approach towards electronically based expert-systems. The idea of a PSC is today strongly linked to the identification of areas of "non-disputable" knowledge, thus allowing non-biased assessment. In spite of this, the normative or situated conception seems to be the dominant one, underpinning the operational systems of several countries. The third element in the Dutch approach, where the candidates have to "reflect" on the task, is an interesting example of this. In this perspective, the knowledge is not "given", but is something which can be adjusted to a vast range of new situations; its transferability and adaptability representing the core of the learning process and knowledge product.

If we return to the objectives behind the new assessment methodologies, we see that a central point is to increase the visibility of the learning taking place outside formal education and training, and to take account of the important hidden or tacit learning at home, at work and elsewhere. By treating the non-formal

learning as consisting of isolated facts, bits and pieces, important learning with respect to co-operation, team-work, and problem solving, could easily be misinterpreted. As Günter Trost (1996) puts it:

"Does the test measure what it should? Its objectivity is neccessary, but insufficient to make it valid."

In this way, efforts to increase validity and reliability make little sense if not combined with a proper understanding of the learning processes in question, and the different forms of knowledge addressed. This does not mean that assessment methodologies should choose between the different concepts of learning, rather, they have to consider their own limits as to the assessment of different forms of learning processes and learning results. A consequence of this might be that combinations of methodologies are developed, as we have already seen in some countries. In this way, systems would be ready to assess objective (delimited, true or false) as well as normative, socially situated learning.

In search of criteria for assessing learning

The conceptual differences outlined above are a useful basis for discussion on how to improve the quality of the assessments, the choice of criteria and their use. Two issues will be considered, firstly, the political requirements, which are important to understand the priorities being expressed and which to some degree influence the methodologies being developed and secondly, the existing criteria for assessing learning. This will be followed by a discussion of the basic logic of non-formal learning, leading to a preliminary outline sketch of possible assessment criteria.

Political requirements for learning

The new focus on assessment of non-formal learning is based on changing political requirements, emphasising the importance of learning in a competitive and changing world. In the European Commission's White Paper, "Teaching and Learning; Towards the Learning Society" (1995), this is clearly expressed. This political focus gives an idea of the kinds of learning and knowledge decision-makers have in mind thus giving us a notion of the kind of methodologies required. In a chapter entitled "What are the skills required?", the White Paper states that:

"In today's world, knowledge in the broad sense can be defined as an acquired body of fundamental and technical knowledge, allied to social skills. It is the balance of this knowledge acquired through the formal education system, in the family, on the job and through various information networks, which make in the broad and transferable body of knowledge which is most favourable to employment."

On the basis of this, learning policies, of which the PSC is an important element, should reflect three different knowledge areas:

- *basic knowledge* – relating to languages, literacy, numeracy etc. According to the White Paper this is the domain if the formal education and training system;

- *technical knowledge* – relating to occupations and is learning which in part takes place in the education and training system, partly on-the-job. Technical knowledge, having changed substantially due to the introduction of information technology and new work organisation, certain transferable key skills are becoming more important;

- *interpersonal skills* – relating to the ability to co-operate and work as a part of team, creativity and the quest for quality. These are emphasised as central to the new learning policies. This points to the fact that full mastery of these skills can only be acquired in the working environment and therefore mainly on the job.

The employability of a person and his or her ability to adapt and change, is, accordingly, connected to his or her ability to combine basic, technical and social skills. This perspective is not, however, apparent in existing systems. In most European countries, the learning outside formal education is filtered out. According to the Commission's White Paper the consequence of this is that:

"It could be considered that society "locks out" in this way much talent which is frequently unconventional but innovatory

"(...) assessment methodologies (...) have to consider their own limits as to the assessment of different forms of learning processes and learning results. A consequence of this might be that combinations of methodologies are developed, as we have already seen in some countries."

"Effort should be directed into a systematic elaboration of assessment criteria, which are able to deal with the situated and unique character of learning. To some extent this touches upon the need to increase the transparency of the process, upon which criteria are used and when and how they are used."

and that it therefore produces an elite which is truly not representative of the available human resource-potential."

The core message of the White Paper, and of a number of national policy documents published in recent years[5], is that the countries and economies in question, need a broader knowledge base, balancing basic, technical and social skills.

The guided and dialogue-oriented assessment approaches developed in countries like France, the UK, Ireland and the Netherlands seem, at least to some extent, to reflect the complexity and context of this new and broad perception of learning and knowledge. In contrast to this, the approach outlined regarding the European Skills Accreditation System is, in a peculiar way, in opposition to this broad concept. By underlining the importance of leaving little room for individual, national and cultural subjectivity and emphasising the importance of avoiding major doctrinal controversies, it can be argued that the approach in the White Paper avoids the broader concept of learning and knowledge.

In spite of concerns over cost, capacity and neutrality underpinning the development of standardised methodologies, the explicit focus on the broad knowledge base illustrated above must be taken into consideration. Effort should be directed into a systematic elaboration of assessment criteria, which are able to deal with the situated and unique character of learning. To some extent this touches upon the need to increase the transparency of the process, upon which criteria are used and when and how they are used.

Existing criteria for dealing with the unique character of non-formal learning

As previously shown, O'Grady addressed the question of improving methodologies of assessment by asking how to improve their validity and reliability. Using Caudill (1990) and her methodology for making decisions on the basis of "imprecise information" ("fuzzy decision-making"), O'Grady's point of departure is that few absolute decision criteria exist. Decisions are normally made on the basis of judgements relative to the evidence given by the individual and by attempting to understand the context in question. To arrive at a reasonable level of validity and reliability, judgements have to be related to some pre-defined template, allowing as systematic and predictable, and therefore, reliable an assessment as possible. O'Grady suggests five evidence factors be used (contained in the UK's City and Guilds of London Institute recommended portfolio structure). They are:

- *authenticity* – referring to the confidence developed by the assessor in the skills of the candidate, whether or not the presented evidence is an accurate reflection of the factual skills in question;
- *actuality* – learning may be "updated" or "out-dated", assessment must take this into account;
- *relevance* – referring to the relation between the presented evidence and the standard or category it is meant to represent;
- *quantity* – referring to the length of experience in the area assessed;
- *variety* – referring to the different situations and contexts in which a certain skill has been used.

Bom, Klarus and Nieskens used these evidence factors as a basis for the Dutch system currently being tested, combining them with the core evidence used in the portfolio process, the most important being the candidate's own written statements, statements from employers, evidence in the form of products, certificates and diplomas, and the interviews conducted as a part of the assessment process. These elements of evidence are then judged according to the factors listed above, using a scale of three levels - good, satisfactory and insufficient.

The criteria developed by O'Grady are closely linked to the existence of a predefined system of vocational qualifications (NVQ or SVQ). The same applies in the Dutch case, where a national system of predefined qualifications has been developed in recent years. This indicates that the five evidence factors can be decided upon according to these standards. A high level of validity and reliability is thus an effect of the correspondence be-

5) A good example of this is the Swedish SOU 1992:7: Kompetensutveckling, - En nationell Strategi (Development of Competences, -A National Strategy).

tween evidence and the standardised description in question. Researchers evaluating the British NVQ system (Wolf 1997) are concerned about the quality of the standards themselves, indicating that they are too narrow and rigid in their scope. If this is so, and we are in no position to judge, the assessment processes may be too narrow, failing to identify and assess the broad learning that takes place outside formal education and training.

One further step is necessary. The evidence used by O'Grady as well as Bom et.al. should be supplemented by criteria reflecting the basic logic of experiential and non-formal learning.

The logic of non-formal learning

The logic of non-formal learning can be analysed according to three analytical constructions. Firstly, through the conception of learning as situated practice, formulated by Jean Lave and Etienne Wenger (op.cit) in their theory of Legitimate Peripheral Participation. Secondly through the skills-stage theory developed by Dreyfus & Dreyfus (1986), describing the elements integral to the transition from novice to expert. Thirdly, by using Engeströms (1993, 1996) critical elaboration of the situated, practice-oriented approach which underlines the distinction between learning as reproduction and learning as transformation.

This last perspective is important to understand the innovatory potential of non-formal learning. Although differing in time of origin and disciplinary basis, all three approaches share the basic notion that learning and knowledge formation cannot be judged exclusively on the basis of objective criteria, but have to be understood according to the social situation and the social context where it occurs. By bringing these perspectives together, the logic of non-formal learning will hopefully become clearer, thus providing a basis for the development of assessment criteria.

Lave and Wenger point to the fact that learning is frequently conceived as a process by which the learner internalises knowledge, whether "discovered", "transmitted" from others, or "experienced in interaction" with others. This focus on internalisation establishes a sharp dichotomy between inside and outside, and suggests that learning is largely something happening inside the brain (cerebral), and takes the individual as a non-problematic unit of analysis. Accordingly, learning is reduced to a process of absorption, a matter of transmission and assimilation. By introducing the term "Legitimate peripheral participation", Lave and Wenger have articulated an alternative perspective on learning, providing a potentially better basis for understanding and identifying the various aspects of learning and knowledge-formation. The core-element of the approach is presented as follows:

"Learning viewed as situated activity has as its central defining characteristic a process that we call ***legitimate peripheral participation.*** *By this we mean to draw attention to the point that learners inevitably participate in communities of practitioners and that the mastery of knowledge and skill requires newcomers to move towards full participation in the socio-cultural practices of a community …a person's intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a socio-cultural practice."*

This shift has interesting consequences, focusing not only on the relational character of learning, but also on the negotiated character and the concerned and engaged nature of learning activities. The individual learner is not gaining a discrete body of abstract knowledge which he or she will then transport and reapply in later contexts. Instead, he or she acquires the skill to perform by actually engaging in the process.

A skilful learner acquires something like the ability to play various roles in various fields of participation. This involves the ability to anticipate, a sense of what can feasibly occur within specified contexts, even if in a given case it does not occur (Hanks 1991). It involves a pre-reflective grasp of complex situations. Mastery involves timing of actions relative to changing circumstances, the ability to improvise. On the basis of a number of case-studies of apprenticeship, Lave and Wenger conclude that little observable teaching can be seen, the more basic phenomena is learning. The

"The distinction between non-formal and formal learning is thus articulated through the distinction between a learning curriculum and a teaching curriculum."

"Returning to the challenge of assessing non-formal learning, (...) focusing on the teaching curriculum alone would represent too narrow a perspective, excluding (...) the context in question. If the challenge of assessment relates to the learning curriculum, (...) the task is more complex, (...) (but) closer to the characteristics of the "broad knowledge base", (...)"

practice of the community creates the potential "curriculum" in the broadest sense - that which may be learned by newcomers with legitimate peripheral access,

"There are strong goals for learning because learners, as peripheral participants, can develop a view of what the whole enterprise is about, and what there is to be learned. Learning itself is an improvised practice: a learning curriculum unfolds in opportunities for engagement in practice. It is not specified as a set of dictates for proper practice."

The distinction between non-formal and formal learning is thus articulated through the distinction between a learning curriculum and a teaching curriculum.

A learning curriculum consists of situated opportunities for the improvisational development of new practices (Lave 1989). It is not something which can be considered in isolation or analysed apart from the social relations that shape participation. A teaching curriculum, in contrast, is constructed for the instruction of newcomers, the meaning of what is learned is mediated through an instructor's participation, by an external view of what knowing is about.

Returning to the challenge of assessing non-formal learning, the change in perspective suggested above is important. Focusing on the teaching curriculum alone would represent too narrow a perspective, excluding the relational, negotiable, committed and continuously changing participation in the context in question. If the challenge of assessment relates to the learning curriculum, defined above, the task is more complex, but on the other hand closer to the characteristics of the "broad knowledge base", referred to earlier in this article.

Although published prior to the theory of Lave and Wenger, the approach of Dreyfus & Dreyfus (1986) can be used to identify and clarify some of the characteristics inherent in the process of situated learning - formulated as the five steps from novice to expert.

The novice is able to recognise various objective facts and features relevant to the skill in question and understand rules for determining actions based on these facts and features. At this stage, the elements of knowledge are not related to the context, neither are the rules governing action. At this stage, we may to some degree speak of detached or delimited knowledge. The fragmentary character of learning is due to the lack of a contextual basis and the lack of "situational memory" helping the actor to choose between the essential and the inessential.

The advanced beginner is starting to gain experience in coping with practical situations. Through practical experience in concrete situations, still defined in terms of objectively recognisable, context-free features, the advanced beginner begins to recognise these elements thanks to a perceived similarity. The new elements introduced at this stage are the situational.

As the number of recognisable context free and situational elements present in real world circumstances eventually become overwhelming, people adopt a hierarchical procedure of decision-making and enter the competent stage. By first choosing a plan to organise the situation, and then examining only the small set of factors that are most important under the chosen plan, a person can both simplify and improve his or her performance. A combination of non-objectivity and necessity characterises this stage. No objective procedure exists and, as a competent person, the individual feels responsible for and emotionally involved in the plan.

The proficient individual will be deeply involved in his task and will experience it from some specific perspective because of recent events. No detached choice or deliberation occurs, it just happens, apparently because the proficient performer has experienced similar situations in the past and memories of them trigger plans similar to those that worked in the past. We are thus speaking of an understanding that effortlessly occurs upon seeing similarities with past experiences. While intuitively organising and understanding, he or she will think analytically about what to do.

The expert generally knows what to do based on mature and practised understanding. Deeply involved in coping with the environment, he or she does not per-

ceive problems in a detached way, when things are proceeding normally. Experts don't solve problems and don't make decisions, they do what normally works. Dreyfus and Dreyfus have developed a table to illustrate the dimensions involved (see table 2):

Table 2
Five Stages of Skill Acquisition

Skill level	Components	Perspective	Decision	Commitment
Novice	Context-free	None	Analytical	Detached
Advanced beginner	Context-free and situational	None	Analytical	Detached
Competent	Context-free and situational	Chosen	Analytical	Detached understanding and deciding. Involved in outcome
Proficient	Context-free and situational	Experienced	Analytical	Involved understanding. Detached deciding
Expert	Context-free and situational	Experienced	Intuitive	Involved

Source: Dreyfus & Dreyfus 1986

Neither Dreyfus and Dreyfus nor Lave and Wenger are ignorant of the fact that learning can also be a process whereby new knowledge is created. In his introduction to Lave and Wenger (1991), Hanks describes their focus on transformation and change in the following way:

"While the apprentice may be the one transformed most dramatically by increased participation in a productive process, it is the wider process that is the crucial locus and precondition for this transformation. How do the masters of apprentices themselves change through acting as co-learners and, therefore, how does the skill being mastered change in the process?"

This is, however, not their primary concern. By focusing on legitimate peripheral participation, Lave and Wenger increase our understanding of how newcomers move towards full participation in the community of practice, but are less forthcoming as to the implicit and explicit renewal of knowledge. This is even more apparent in the contribution of Dreyfus and Dreyfus. In a more recent publication Lave (1993) underlines the importance of transformation and change, and says:

"It would be wrong to imply that humans engage first and foremost in the reproduction of given knowledge rather than in the production of knowledgeability as a flexible process of engagement with the world"

Engeström addresses this problem by introducing the distinction between learning as reproduction and learning as expansion. Kauppi (1992, 1993) suggests a parallel to this, using the distinction between reproductive and transformative learning. The question is, what kind of learning is required to answer the challenges in complex and ever changing environments requiring new practices? Routine practices are often accompanied by learning that may be described as reproductive. In this way, the strong focus of Lave and Wenger on the move towards full participation may be interpreted as a way to socialise into existing practices, the current modes of thinking and acting.

This is a necessary part of any knowledge formation, but it can also be viewed as something negative, especially if the existing ways of thinking and acting are a barrier to improving practice. Too strong an emphasis on reproductive learning may lead to a situation where the practitioners take their practices as given, and try to do things exactly the same way as before. Facing a new situation, problem or a crisis, the reaction may be to move the responsibility to others, to abandon it, or to attempt something that is in accordance with the old mode of thought and practice. These kinds of learning strategies, or rather strategies for survival (Kauppi 1996), may, in the long run, prove negative.

Engeström has developed the notion of learning as expansion through the conception of an expansive cycle. The expansive cycle begins with the individual questioning the accepted practice, and is gradually

"Simplification is a necessary consequence of any assessment of non-formal learning. This simplification may vary in character and scope, but is probably not entirely avoidable."

expanded into a collective movement. Through studies of work-organisations, Engeström points to the fact that problem-finding and problem-definition are more important than problem-solving as such. This corresponds closely to Herbert Simons (1973) who points out that ill structured problems are more common than well structured problems in organisations, implying that an important part of all learning (finding solutions to problems) is related to the initial understanding and definition of the problem to be solved.

In an organisational setting, Engeström divides the expansive model into the following seven stages:

- questioning, criticising and rejecting some aspects of accepted practice and existing wisdom in the face of an unsolved problem;
- analysing the situation, including a mental, discursive or practical transformation of the situation in order to discover causes or explanatory mechanisms;
- modelling of a new found explanatory relationship, presenting a simplified model which explains and offers a solution to the problematic situation;
- examining of the model, operating it in order to understand its potential;
- implementing the model;
- the reflection process; and
- the evaluation and consolidation of the new model into a new stable form.

An interesting parallel to this model that of Nonaka and Takeuchi (1995), which attempts to use the concepts of tacit and explicit knowledge to understand knowledge creation and innovation.

The contributions presented above can be looked upon as ways of clarifying the somewhat vague conception of a "broad knowledge base" as introduced in recent political documents. In this context, their contribution is twofold. They both underline the complexity of the matter and illustrate, on the basis of the key-processes described, possible starting points for the development of assessment criteria.

Feasibility of methodologies

The transfer of research perspectives into practical assessment is a complicated process where compromises between what is possible and what is theoretically consistent may be necessary. One possible alternative is to try to identify the most important limits of feasibility; thus establishing as realistic a point of departure as possible.

The identification of feasibility limits may take two very different paths. Firstly, the feasibility of assessment is limited by the character of the learning process itself. It may be, as several authors have argued (Polanyi, Dreyfus and Dreyfus), that certain kinds of human knowledge is inherent and difficult or impossible to verbalise and delimit. Secondly, the cost of producing an assessment of non-formal learning is critical to the overall feasibility of the methodology. The balance between gain and loss, complicated by the fact that it will vary at different levels, will increase in importance as the methodologies and systems mature.

"Knowing how" and "knowing that"

Simplification is a necessary consequence of any assessment of non-formal learning. This simplification may vary in character and scope, but is probably not entirely avoidable. Even the dialogue-oriented approaches, like the Dutch and the Irish, explicit in their focus on the situated character of learning, must, compared to "real life", simplify and reduce. This is not only a question of practical limitations, such as the length of descriptions, it is just as much a question of principal limitations. Some elements of learning "resist" this kind of simplification, tending to lose their specific value in the transformation from "doing" to "description". By overlooking this danger, assessments run into the risk of misinterpretation and misrepresentation.

Dreyfus and Dreyfus illustrate this problem by using the example of riding on a bicycle. Although you may know how to do it, it is difficult if not impossible to formulate the specific rules intrinsic to this knowledge. The ride is safe because you possess what Dreyfus and Dreyfus de-

scribe as "know-how", acquired through practice and, sometimes, painful experience. The fact that you can not put what you have learned into words means that know-how is not accessible in the form of facts and rules. If it were, you could say that you "know that" certain rules produce proficient bicycle riding.

Not confining this phenomena to bicycle riding, Dreyfus and Dreyfus point to the fact that all of us know how to do innumerable things that cannot be reduced to "knowing that". An experienced carpenter knows how to use tools in ways that escapes verbalisation. Normally, we take this know-how so much for granted that we don't appreciate and recognise the extent to which it pervades our activities.

This is perhaps most apparent in situations where this "know-how" deserts us. A sudden reflection on the activity (how to ride a bike, or use a hammer), may interrupt our intuitive and non-reflective attitude towards these activities. There is reason to believe that an important part of what we identify by the concept non-formal learning belongs to this area of "know-how". Indeed, if we follow the argument of Dreyfus and Dreyfus, the five steps from novice to expert are characterised by the gradual change from "knowing that" to "knowing how". Or as they formulate it:

What should stand out is the progression from the analytic behaviour of detached subjects, consciously decomposing his environment into recognisable elements, and following abstract rules, to involved skilled behaviour based on an accumulation of concrete experiences and the unconscious recognition of new situations as similar to whole remembered ones. The evolution from the abstract toward the concrete reverses what one observes in small children dealing with intellectual tasks, they initially understand only concrete examples and gradually learn abstract reasoning.

To some extent, testing individuals in an authentic context may identify "know-how" of this kind. In spite of this, the transformation of this kind of intuitive knowledge to validated, officially stamped elements of knowledge, is a difficult one, in need of further elaboration.

"I know" and "we know"

Some researchers are of the opinion that it is paradoxical to attribute learning to organisations. Individuals learn, not organisations! At best, they state, the notion of organisational learning can be used by the distant spectator or by treating the entity in question as an impersonal agent. However, it is a fact that when individuals fail to enter into the stream of distinctly organisational thought and actions, organisations tend to know *less* than their members do. Conversely, there are situations in which an organisation seems to know *more* than its individual members (Argyris and Scön 1996). This has been recognised by practitioners as well as researchers working in areas associated with "Organisation of work", "Industrial Organisation", "Human Resource Management" etc. Learning is a reflection of a learning environment, determining learning through structures (linked to communication, information and incentives) and through interactive patterns (values, feelings, meanings, atmosphere etc.).

Put together, this environment is of crucial importance and influences the knowledge of an organisation in a decisive way. As illustrated in the discussion of situated learning, the knowledge of individuals cannot be properly understood if studied in isolation of its environment. This becomes even more critical if the issue is the added-value created by individuals co-operating, namely collective learning and organisational knowledge. The extent to which assessment methodologies should be expected to and are able to reflect this added, collective value is uncertain. Simultaneously, politicians as well as researchers seem to hope that this will be possible. As we have already have pointed out, for example in the European Commission's White Paper, aspects like teamwork and inter-personal skills rank high among the non-formal skills expected to be identified and assessed.

It is misleading to imply that assessment of individuals can give a fair representation of organisational and collective learning. This does not, however, imply that the environment and the context in which the individual is learning should be excluded, rather that the limitations of the assessments should be clearly understood.

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"Future design of methodologies for the assessment of non-formal learning thus have to confront the distinction made by Simon between what is optimal and what is satisfactory. Satisfactory methodologies (...) have, (...) to consider the specific character of learning, providing guidelines as well as limitations for the design of assessment methodologies."

Economic feasibility; the question of gain and loss

Judging the feasibility of assessment methodologies, experiences from research on learning and knowledge processes can be consulted. A high degree of validity and reliability, it seems, depends on a combination of research strategies. Formulated above as a combination of "chasing the decimal" (the quantitative approach), "pressing the flesh" (the qualitative approach) and "producing the effect" (the experimental approach). Following our theoretically based investigations into the character of non-formal learning, the quest for methodological diversity seems to be relevant to the design of assessment methodologies in the same way as it is to the design of research processes. In the context of assessment, the quantitative approach can be paralleled by standardised expert systems, the qualitative approach by a dialogue based approach and the experimental approach by various tests.

This optimal solution may, however, prove difficult to reproduce in a setting characterised by the constraints of time and economy. A recent survey of the British Accreditation of Prior Learning (APL) process by the Department for Education and Employment, documents that assessment costs vary according to the array of services attracted and according to the individualistic character of the process (DfEE 1997, reported in CEDEFOP/SQV 1997). Where information is readily available and a candidate is able to seek information and endorsement directly from the employer, the process of APL is considered cost-effective. If this is not the case, the process can be "frustrating and costly and little to show for the candidate's efforts" (CEDEFOP/SQA).

As there is little need for complicated and expensive methodologies focusing on "readily available information", which is already described and formalised, the question of cost, understood as the readiness to allocate resources to the assessment of non-formal learning, becomes critical. Future design of methodologies for the assessment of non-formal learning thus have to confront the distinction made by Simon between what is optimal and what is satisfactory. Satisfactory methodologies for the assessment of non-formal learning have, however, to consider the specific character of learning, providing guidelines as well as limitations for the design of assessment methodologies.

Conclusion

As illustrated, assessment of non-formal learning is so far an area that has received limited attention from researchers. The majority of contributions consist of descriptions or comparisons, relatively few contributions deal with the more basic questions related to the quality of the methodologies. However, and as we have tried to show, "neighbouring" research may be of value in order to improve the understanding of this field. On the basis of these contributions, the conclusion of this article should be formulated in two questions, indicating two main directions to be followed by research in the time to come:

- are the methodologies currently being set up able to assess and measure what they are supposed to assess an measure?

- are the methodologies currently being set up able to reflect feasibility limits; understood as those intrinsic to the process of learning and those introduced through the constraint of time and resources?

These two questions may serve as focal-points for multidisciplinary research effort. As illustrated above, different disciplinary approaches (from psychology to human capital accounting) may add important perspectives to a topic and field of increasing importance.

A third question has, however, not been addressed in this article, namely, are the systems and institutions currently being set up, designed so as to support the social re-definition of what is valuable and non-valuable, valid and non-valid learning and knowledge?

This has to do with *the legitimacy* of the methodologies and systems currently being set up and will be elaborated in the second article on the assessment of non-formal learning in this volume of the Journal[6].

6) See pages 68-74

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A question of faith?

Methodologies and systems for assessing non-formal learning require a legitimate basis

The prospects for developing effective and accepted assessments of non-formal learning requires that methodologies and systems have a strong legal and legitimate basis in order to be of some influence. This poses the challenge of institutional design which is an important precondition for the development of legitimate systems for the assessment of learning. Furthermore, the metaphor of currency/money can be used to illustrate some of the mechanisms influencing the legitimacy and the value of assessments.

Introduction

The strong international trend towards the introduction of methodologies to assess non-formal learning may be approached from different angles. One option is to investigate *the quality of the methodologies - the degree to which* they measure what they are supposed to and to which they provide a valid and reliable picture of the learning in question. Another option is to focus on *the value of the assessments being made*. Assessments of non-formal learning may, like formal certificates, be viewed as a "currency". They are justified through the value attributed to them, by the political system, the market and the general public. The aspect of legitimacy[1], and its influence on the actual value of the assessments, has so far received limited attention from practitioners and researchers working in this field.

This article introduces and discusses some of the principal and practical questions involved in this area. In the first part, Riel Millars examination (OECD 1996) of the prospects for developing effective and accepted accounting for human knowledge is outlined. Millars contribution is important as it underlines that methodologies and systems need a strong legal and legitimate basis in order to be of some influence. It is also important as it illustrates the general character of the challenge of assessment of learning.

The second part of the article addresses the challenge of institutional design, an important precondition for the development of legitimate systems for the assessment of learning. The metaphor of currency/money is elaborated in some detail in the third and concluding part in order to illustrate some of the mechanisms influencing the legitimacy and the actual value of assessments.

The scarcity of knowledge information

Assessing learning can be elaborated from a number of disciplinary perspectives. Riel Millar, in a report published by OECD, provides an interesting human-capital[2] approach to the question of assessing learning and knowledge. His discussion of how to establish universally recognised and reasonably secure mechanisms for the accounting of human capital assets in the enterprise as well as in the public domain, is closely related to the question of how to establish legitimate methodologies and systems for the assessment of non-formal learning.

In spite of differences in terminology, economists seem to face many of the problems intrinsic to the assessment of non-formal learning. This includes the problems of methodological quality as well as the problems of institutional and public legitimacy.

This (somewhat surprising?) parallel is linked to what we may characterise as the information dilemma facing current societies. In spite of the growing importance of learning and knowledge, the quality of information available to those (individuals, enterprises, public bodies) making choices on the use of human capital is questionable. The lack of commonly accepted methodologies and systems, on national as well as international level, partly explain why this is the case.

Due to fundamental changes in the economic structures in OECD countries, the

1) The concept of legitimacy has traditionally been related to Max Weber's classical typologies of legitimate authority; legitimacy based on tradition, charisma and rationality. Today's debate is more focused on the relationship between authority and normative agreement (Habermas 1981, Held 1987).

2) Human capital is defined as the knowledge that individuals acquire during their life and use to produce goods, services and ideas in market and non-market circumstances. Of theoretical reasons, the source of knowledge acquisition (formal or non-formal, family or school, job or leisure) is ignored, as is the specific nature of the knowledge and the method for validating or certifying it.

need for recognised accounting and assessment mechanisms is, according to Millar, increasing. The essence of this structural change is captured in passage from Deiaco et.al. (1990):

"..the 1980s have seen changes in the nature of investment. The relative proportions of physical and intangible investments have changed considerably. For example, some measures show that total industrial intangible investment had passed physical investment in Germany, Sweden and the UK by 1987. Other evidence of the changing nature of investment is the increased complementarity between physical and intangible investment as well as the high technology content in both kinds of investment. These trends are transforming the structure of productive assets."

So far, and regardless of the growing importance of knowledge in the economy, comparatively little has been achieved as to the measurement and pricing of human capital. In spite of a vast research-interest in accounting-questions, no widely recognised methodologies or systems have been introduced. Keith Drake (1997) formulates it in the following way:

"For want of agreements on rules or conventions, all knowledge assets are left off corporate balance sheets, with only the rarest exceptions, such as the value of football players in the accounting of their clubs."

Discussions on reporting and accounting of human capital as an asset seem to run into two immediate obstacles. First, most current certificate-based measures of human capital are deemed inaccurate or exclusive to the firm and therefore inadequate for assessing productive potential. Then, secondly, without adequate measures of acquired competence, there is little incentive for individuals or firms to collect or develop high quality human capital information. Thus, the absence of efficient and accurate systems for validating the productive competence of human capital undermines efforts to engage in financial accounting and reporting of such assets. Without practical recognition of human capital as an asset there is little incentive to establish even inexpensive systems to identify it (OECD, op.cit.).

Millar is of the opinion that it is possible to overcome the theoretical and methodological problems related to accounting for intangible assets. In some respects, the conditions for arriving at such a mechanism, are improving. A general trend towards the strengthening of the institutional and regulatory preconditions for the assessment and accounting of learning and knowledge may be observed (CEDEFOP 1997). This trend is clear on a number of different levels:

❏ the individual level: as indicated elsewhere in this issue of the Journal[3], assessment of prior and non-formal learning is growing in importance, the number of countries introducing such methodologies and systems is increasing;

❏ the enterprise level: for enterprises, there is a gradual move towards financial accounting and reporting of intangible assets, including new methods for reporting human capital;

❏ the government level: some effort can be observed to introduce new methods of accounting for public expenditures on human capital, along with modest reforms to the structure and functioning of educational systems.

However, and as already stated, such methodologies and systems require a legitimate basis. Millar is of the opinion that the state has to play a decisive role in this respect, and the question is:

"...how can governments encourage the accounting and reporting conventions that would facilitate the development of human capital information and decision making appropriate to emerging circumstances?"

A primary option for the state to encourage more effective systems is to define and establish "collective parameters" and guard the general interest when it comes to defining competences, assessment methods and recording conventions. This is not very different from the role played by the state in relation to the market; certain general laws and basic institutions govern the "free" competition between economic parties. To undertake these regulatory tasks, institutions have to be simultaneously inclusive, decentralised and based on a common, general framework.

"A general trend towards the strengthening of the institutional and regulatory preconditions for the assessment and accounting of learning and knowledge may be observed."

3) See pages 52-67

"(...) the need for knowledge information can only partly be met through the introduction of purely technical solutions. Proper solutions must take the broader social setting of the methodologies into account, and focus explicitly on the questions of acceptance and legitimacy."

Millar uses a CEDEFOP report, on the "Social Dialogue" (1988), to underline the prerequisites for such a (seemingly conflicting) combination of objectives. The report says:

"While observing the necessary flexibility and job mobility, more importance has to be attached to the definition and necessary demarcation of jobs without referring to guilds and fellowships. It can only be successfully guaranteed, however, by including the various interest groups. Such a definition cannot be prescribed by legislature alone. It must be accomplished by compromise among the various groups, which do indeed have highly conflicting interests. ...without local control and without the assistance of those involved and their representative organisations, i.e. in particular without the cooperation of the workforce, it would hardly be possible to develop an adequate policy in the area of vocational and continuing training, which would be able to satisfy the demands of a highly developed society."

From this general statement, it is clear that the role of the state should not consist in dictating the framework and the guidelines for new methodologies and systems. Rather, the role has to be understood as a careful orchestrating of different groups and interests through a conscious design of legitimate information channels and institutions. The state has to try to balance the competing interests of employers, employees, educators, professional associations, citizens etc. Legitimate and widely accepted mechanisms for the validation of learning can only be established on the basis of this kind of broad-based participation. In order to be able to reveal the stocks and flow of human knowledge, this cooperative effort, facilitated by public bodies, is of central importance.

This underlines that the need for knowledge information can only partly be met through the introduction of purely technical solutions. Proper solutions must take the broader social setting of the methodologies into account, and focus explicitly on the questions of acceptance and legitimacy. One possible strategy is to look closer into interrelation between institutional design and legitimacy.

Institutional design and legitimacy

A number of recent contributions within political science (Eriksen 1993, Elster 1992, Kettner 1993) have focused on the *relationship between institutional design and legitimacy*, and these (general) perspectives may be of some use for our understanding of the legitimacy of the new assessment methodologies and systems. If this understanding is correct, *the design of institutions* may be of critical importance to the decisions (validations) eventually being made within them. If institutions are expected to be legitimate the following criteria should at least be satisfied (Eriksen op.cit.):

❑ all relevant participants must be heard and all relevant participants must acknowledge (be conscious of) their own interests;

❑ all relevant information must be delivered;

❑ the different interests represented and acknowledged should be balanced and the abuse of power should be sanctioned.

In this perspective, institutional design is about balancing and co-ordinating *existing* positions and *given* objectives in a way that is generally accepted (Eriksen op.cit.). However, many institutions have to *develop* goals and to *arrive* (gradually) at a common understanding. This is basic to innovative activity and to democratic institutions trying to interpret and define changing values and needs. In these cases, the process of deliberation[4] has to be built into the institution.

Some writers have described these different approaches through the distinction between "instrumental" and "communicative" designs of institutions (Eriksen op.cit., Habermas 1994). Others (Bjørnåvold and Hernes 1992) have described them as "closed" ("closed" in the sense that existing objectives and positions are given) and "open" institutional approaches ("open" in the sense that it is open for deliberation). Kettner (op.cit.) has suggested some aspects which could be used to evaluate whether institutions tend to be "open" or "closed":

4) On the topic of deliberation, Aristoteles (1987) says: "Deliberation occurs in cases which fall under a general rule, if it is uncertain what the issue will be, and in cases which do not admit of an absolute decision". Eriksen (1995) says: Deliberation is needed when it is uncertain what would be the most rational and sensible solution, but when the topic involved is of such a character that it is possible to reason over. In a democratic setting, it is basic that decisions should be qualified. They should not only reflect the pleasure of those in power, strong groups of interest or pure chance, arguments should be decisive, and it is this argumentative process which constitutes democracy.

❑ have debates been open for all competent participants, for those affected by the issues, and have the arguments of those not present been listened to?

❑ have the debates been balanced in the way that participants have had the opportunity to express their attitudes and wishes, in a way that reflects their status as autonomous participants;

❑ have the debates been transparent, thus reducing the impact of narrow strategic oriented action, which should not take place through external intervention, but mutual agreement.

The institutions being set up to validate prior and non-formal learning, and accounting of intangible assets, could be evaluated against such general standards and within such a context.

As many of the institutions involved are in the process of being set up or have been operational for a short time, objectives and methods are not fixed, but have to be gradually developed. This underlines the need for an "open and communicative" approach. Because the legitimacy of the new forms of validation depends on a *mutual* recognition of basic objectives and standards, institutional form should support this kind of mutual deliberation. According to Colardyn (1996), three institutional elements (linkages) are necessary in order to establish confidence. There is, as we can see, a close relationship to the general points made above:

❑ existing criteria for qualifications/skills have to be reflected and integrated into the system on a permanent basis. This implies that the formal education and training system has to be represented and allowed to express its views and specific interests;

❑ the needs of enterprises must be reflected and integrated in the system on a permanent basis. This implies that the flow of information must be organised in such a way as to be accepted by those participating;

❑ social partners must participate in the system on a permanent basis. The legitimacy of the system would be seriously affected if an imbalance of interests is suspected.

Apart from these dimensions, reflection should be given to the question of centralised versus decentralised approaches.

Existing validation systems vary somewhat in this respect (CEDEFOP 1997, op.cit.). A centralised system may be viewed as more trustworthy in the sense that it is more homogenous and coherent. A decentralised system may, on the other hand, be viewed as trustworthy in the sense that the flow of information is more effective and organised on the basis of detailed knowledge of participants and their needs. The question of legitimacy is important to all involved in the validation process. Individuals have no interest in investing time, energy and money in validations that eventually prove to be of little worth. The same can be said of enterprises and societies.

The discussion of the legitimacy of the new methodologies and systems for assessing non-formal learning, as well as accounting human capital assets, is still in its infancy and may be characterised as embryonic. This includes the political debate as well as the debate among researchers. As indicated, this may be due to the fragmentary status and the novelty of the systems. It may also be interpreted as a reflection of the dominating perspective on learning and knowledge-formation. More or less consciously, people tend to treat knowledge as something objective, either true or false. This obscures the fact that an important part of all knowledge-formation is closely related to social processes and social interpretation. The value of the knowledge is intrinsically related to its social acceptance or non-acceptance.

The politically defined objective to increase the value of learning taking place outside formal education and training has to take the social character of knowledge into consideration. We speak not only of a technical integration of objective knowledge-elements, but also of a social redefinition of what knowledge is valuable and which is not valuable. This is why the question of legitimacy of institutions ought to be a central topic for researchers as well as politicians

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"It is possible to introduce a law attributing a certain value to an assessment, but it does not automatically follow from this that the general public or the labour market find it justified."

Introducing a new currency

O'Grady (1991) is of the opinion that sufficient methodological quality (defined as validity and reliability) will make individuals, enterprises and public authorities accept the assessments being made. As we have indicated above, this is highly questionable.

The value of an assessment (in the labour market, in educational institutions and in society in general) must be understood according to its social *legitimacy*. The acceptance of assessments of non-formal learning is not only a question of their *legal status*, but also of their *legitimate status*. It is possible to introduce a law attributing a certain value to an assessment, but it does not automatically follow from this that the general public or the labour market find it justified. The fact that different groups may view the question of legitimacy in different and even conflicting ways, increases the complexity of the matter. Herrmann Müller-Solger (1996) illustrates the intrinsic social character of assessments by comparing them to banknotes:

"Certificates can be compared with banknotes. Individuals aim to obtain as much as possible with them and to use them in the best possible way. The purchaser (the employer or the training institution) wants to be sure of the value of the certificate and get the best price possible. There is inflation, devaluation, revaluation and continual speculation. It seems that some want the value of certificates to be like that of a currency, having a clear value in the country of origin, with the foreign exchange rate fixed, or having only a limited floating range."

Müller-Solger points to the fact that an assessment (or a certificate) will always be open to interpretation and subject to never-ending negotiations of its value or price. On an individual level, these processes can be compared with those of barter. Subjective and context-bound elements will inevitably be of some importance to the final value attributed to the assessment, in some cases even more important than the formal assessments and certificates available. This element of negotiation is also present in society.

The case of university diplomas illustrates this. Previously they represented a secure "passport" to employment, but their value has been significantly reduced in several countries. This is not only a question of competition in the labour market, but also with the changing value standards of societies. The same negotiation processes, even more explicitly, will be present in the assessment of non-formal learning.

The metaphor[5] of currency/money, presented by Müller-Solger, is useful in highlighting some of the mechanisms involved in the assessment of non-formal learning and the accounting of intangible assets. Using Talcott Parson and his investigation into "the medium of money", this becomes very clear. Parsons basic argument is that money can be understood as,

"*a code, providing certain information from holder to receiver. Moneys are valid in a predefined set of standard situations, they must be based on a generalised value (accepted not only in a legal sense, but also on a popular basis) and they must be measurable.*"

According to this interpretation, money must be able to "store" and "measure" value. If we compare the function of money to the function of barter in traditional societies, interesting differences occur. Barter, mediated through direct communication, can only be valued according to the specific context where it is taking place. Money, on the other hand, *retains it value irrespective of the context in question*. This contextual detachment and separation *implicates a simplification and standardisation of the information stored by money*. Compared to the information provided through barter, which is multidimensional, money provides information that can be characterised as one dimensional (Habermas 1981).

Applying this perspective to assessment of learning, several parallels can be identified. As with money, assessments can be understood as a code, providing information from holder to receiver. An individual applying for job, using assessments of prior learning or some form of certification exemplifies this. Assessments are valid in a predefined set of standard situations, the labour market, the internal job hierarchy in an enterprise and the

5) The concept of metaphor is used in the sense introduced by Morgan (1987).

system of education are examples of such predefined situations. Assessments must be based on some form of generalised value, not only legal but also legitimate. Finally, they must be able to measure, to give a valid and reliable picture of the learning being assessed. According to this interpretation, assessments of non-formal learning (as is the case with diplomas and certificates in general) must be able to store information, to measure the learning/knowledge in question and the value attributed to it in the broader setting of the labour market, the educational system and the society in general. But like money, assessments necessarily provide (store and measure) simplified and standardised information. The degree of simplification and standardisation will, of course, vary, but as illustrated in the discussion of methodologies for the assessment of non-formal learning elsewhere in this issue[6], a certain simplification is unavoidable.

The process attributing a certain value to learning may in several respects be compared to those operational in the monetary system. Max Weber points out,

"It is true that by law and administrative action a state can today insure the formal validity of money…but actually this formal power implies nothing as to the substantive validity of money; that is, the rate at which it will be accepted in exchange of commodities. Nor does it yield any knowledge of whether and to what extent the monetary authorities can influence its substantive validity."

In order to move from this negative description of the prerequisites for validity, we believe that the following aspects or areas must receive attention in the future.

Simplification and standardisation

Applying the sense of assessments as a form of code, transforming a complicated set of information into a standardised and simplified language, we can foresee certain limitations. If the simplification and standardisation becomes too radical, the information value of the assessments could be reduced to such a degree that the overall legitimacy of the approach is threatened. Some of the electronically based expert systems[7] could very well face this problem. In this respect, the difference between money and assessments is clear. The strength of the medium of money lies in its ability to simplify and standardise. The weakness of assessments may very well lie in its need to simplify and standardise.

Predefined standard situations

The use of assessments will, eventually, be limited to certain standard situations. On a theoretical level, these situations are envisaged as arising when individuals try to enter the labour market, try to access certain levels of the educational system or try to improve a position in an internal job hierarchy. So far, the actual definition of situations and areas where this "currency" is valid, has not been concluded and in some countries not even started. The actual testing (acceptance or non-acceptance) in the market and by the educational system is of course the most important part of this definition process. To some degree, however, it is also dependent on the legal definitions presented by the state. In this respect, the difference between money and assessments is limited. Standard situations may be legally defined, the actual definition must, however, take place in a direct "confrontation" with employers, institutional bodies etc.

A storage of value

The degree to which assessments actually will be able to store value will, as indicated above, basically be determined through the actual acceptance/validation by employees, employers and educational authorities. The legal status of the assessments may, however, be of a certain importance. In some countries, the authority to regulate and "stamp" assessments may be divided between different (and sometimes competing) authorities. If this is the case, one of the preconditions for arriving at legitimate methodologies and systems could be endangered. This does not mean that strict centralisation is needed, rather that responsibilities should be defined in a clear and transparent way. In this respect, assessments can be compared to money, the issuing of currency is intrinsically linked to a clear and accepted basis of authority.

"(…) like money, assessments necessarily provide (store and measure) simplified and standardised information."

"If the simplification and standardisation becomes too radical, the information value of the assessments could be reduced (…)"

"The strength of the medium of money lies in its ability to simplify and standardise. The weakness of assessments may very well lie in its need to simplify and standardise."

6) See pages 52-67

7) See pages 55-56

Inflation and speculation

Like money, the day to day value of assessments will be vulnerable to changing levels of acceptance and legitimacy. This will be linked to aspects mentioned above, but must also be understood as a reflection of the total amount of learning/knowledge assessments circulating. It is paradoxical that the introduction of assessments of non-formal learning (accounting of human resources) takes place in a situation where the number of people entering formal education, and receiving formal certification, is higher than ever before. It is reason to believe that the value, and legitimacy of the new forms of assessments will partly be defined in confrontation and competition with traditional, formal assessments. This is clear when we consider that the value of formal certificates has changed. A inflationary tendency can be observed as increasingly higher qualifications are needed to compete in the labour market.

In the end, *the strength of the new assessment approaches will be defined by their ability to provide information, to the holder and the receiver of the assessment.* A major weakness characterising traditional certificates, is that they provide a too limited and simplified picture of the individual in question. If assessments of learning are supposed to achieve some legitimacy, they have to face the challenge that, not only do they have to cover other forms of learning than those covered by traditional certificates and diplomas, they have to provide a qualitatively better picture of the learning processes. If this is not the case, the legitimacy and the value of the assessments being made, will be questionable.

Conclusion

This article has discussed a field that, so far, has received little attention. The debate on assessment of non-formal learning has concentrated on matters of methodology. Despite the fact that the quality of the methodologies to some degree influence the value of assessments, we believe that a number of other elements contribute to this as well.

But as illustrated in Riel Millars discussion of human capital accounting, the need for effective and reliable information on learning processes and knowledge information seems to be increasing. This is probably why the new methodologies and systems for assessment of non- formal learning have a possibility to become something more than just a temporary episode.

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Individual and company information and counselling requirements: New challenges for vocational guidance

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Vocational counsellors face new challenges

Growing demand for vocational information and guidance

In the past 20 years the environment affecting the choice of occupation and the transition from the education and training system into the employment system have changed decisively in all European countries. Societal trends such as a general shift in values, increasing individualization and pluralization of walks of life, a lengthening of the youth phase, changes in gender-related role assignments and many other developments have challenged previously prevailing living patterns and vocational orientations. Economic and technological change leads to accelerating changes in the world of work, to new tasks, occupational fields and higher requirements as well as to greater job insecurity, devaluation of vocational qualifications and to an erosion of normal employment patterns. Globalization of economic activity and labour markets and progressive European integration open up new opportunities for mobility but at the same time increase the pressure of job market competition. Sustained mass unemployment in all European Union Member States and, at least in Germany, a reduced availability of initial vocational training opportunities make it harder for the individual to start and plan a career and lead to a growing demand for vocational counselling and information.

Vocational guidance needed throughout working life

Choosing on occupation is not a once-in-a-lifetime decision at the end of one's school days; it is a lifelong process. It begins long before leaving school (e.g. at the various school-career crossroads) and does not end when the first job is obtained. Phases of vocational specialization, continuing vocational training, changes of job and occupation, and even unemployment and other interruptions of gainful employment always entail vocational decision processes which require adequate support in the way of future-oriented information and individual guidance.

Vocational information and guidance must therefore be available as a career-long opportunity for all age groups and vocational concerns. It must provide information on the various school and occupational initial and continuing vocational training options, on opportunities for higher education and on current and future labour-market and employment prospects. It must also match these possibilities with the personal background, interests, abilities, social situation and environment of the person seeking advice.

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Vocational information and guidance must therefore be available as a career-long opportunity for all age groups and vocational concerns.

"Modern, demand-led vocational guidance must make transnational initial and continuing vocational training and job market trends and opportunities transparent for its clients at home and abroad, show them routes abroad and help them overcome obstacles to mobility. (...) Supplying the needed information is one of the most important future-oriented tasks for vocational counselling services in all Community countries."

Human capital becoming most important factor of production

Enterprises must also adjust to new circumstances in personnel planning. New products, new technologies, new work-organization patterns, operating on global markets and international competitive pressure put new qualification demands on workers and management. Human capital is becoming the most important factor of production - particularly in highly developed postindustrial economies with few natural resources. Early, reliable information on future trends in qualification supply and far-sighted qualification strategies and junior staff recruiting are becoming vital strategic factors of corporate policy.

However, the costs of initial and continuing training of employees are becoming a more and more significant factor, and companies are increasingly seeing them in terms of a short-range cost-benefit analysis. This often leads, as in the case of Germany today, to a lower commitment of enterprises to training, and as a consequence to a future lack of well-trained specialists when demographic factors reduce the flow of new labour. Thus enterprises also require counselling in forming their training and recruiting policies and on financing and promoting this area.

European dimension gaining in significance

Until now vocational counselling has traditionally dealt almost exclusively with its own national education, initial and continuing training opportunities and their utilization on national labour markets. The economic and political integration of Europe and globalization of the economy require those concerned to take a wider view, transcending national borders. Modern, demand-led vocational guidance must make transnational initial and continuing vocational training and job market trends and opportunities transparent for its clients at home and abroad, show them routes abroad and help them overcome obstacles to mobility. Foreign experience is nowadays often one of the qualifications companies require of beginning workers. It can be acquired through training stages abroad, on-the-job training and vacation jobs. Supplying the needed information is one of the most important future-oriented tasks for vocational counselling services in all Community countries.

New tasks in information marketing and information management

Change in the structure of the economy in all developed European societies in the direction of an information and service society entails ongoing improvement of information and communication technology and steady growth of this sector of the economy. This results in more, better and faster-breaking information at any given location and in any desired form (from traditional print media to multimedia presentation). This universal availability of information leads, however, to "information overkill" threatening to overwhelm the intended recipient. The consequence is a growing need for information marketing and information management for individuals and enterprises.

Close ties to economy and enterprises absolutely necessary

Providing expert information and advice to individuals and enterprises on the labour-market situation and trends and on future employment prospects for different levels of qualification and occupational fields requires that counselling centres keep a finger on the pulse of the employment system. They must be familiar with the world of work and maintain constant contact with companies and economic associations so that they can immediately recognize current personnel requirements and forecast future trends and pass these findings on to their clientele.

Meeting this comprehensive challenge is no easy matter. The various European countries have developed different models of organization and institutional affiliation of public vocational counselling in accordance with their various education and training systems. In countries where education and training are primarily based in schools and universities,

government information and counselling services for young people and occupational beginners are usually located in educational institutions, while guidance services for adults, the employed and the unemployed are usually assigned to the employment services and job placement agencies. In contrast, where in-company vocational training is the rule, as it is in German-speaking countries, vocational counselling for both young people and adults, including placement in in-company training places (apprenticeships), is usually in the hands of government employment offices since they have profound knowledge of trends in the employment system thanks to their regular, intensive contact with enterprises through their placement activities.

Despite privatization: neutral, objective public vocational counselling remains indispensable

In most European countries, government (mostly free) and private vocational counselling coexist. Germany alone had a government monopoly on vocational guidance and placement in in-company training programmes. This monopoly was abolished on 1 January 1998 in the process of harmonizing European standards. Vocational counselling offered by government agencies and institutions operating on government contracts is dedicated to a greater extent than private services to the task of informing the interested public comprehensively and objectively on training and career opportunities, occupational fields and labour-market trends. This public service is not allowed to favour individual occupational groups or economic sectors. In fulfilling their statutory role and in the interest of citizens seeking advice, these agencies have an obligation to remain neutral.

Society's interest in vocational counselling as a public service is primarily to provide timely vocational guidance and information in order to prevent labour-market imbalances, poor career decisions and young people dropping out of training and thus prevent unemployment and other social costs and financial consequences of inadequate information and counselling.

Vocational counselling in Germany: institutional framework and areas of activity

Integration in public labour administration financed by the social partners

Vocational counselling in the Federal Republic of Germany is a part of public labour administration (Federal Labour Office). Unlike the systems of many other countries where it is subordinated to the labour or social welfare ministry, in Germany it is an autonomous body under public law funded by the social partners. Employers and employees pay contributions to the Federal Labour Office. The money finances unemployment compensation paid as an insurance benefit, all labour-market policy measures, including training programmes and job-creation schemes, and employment-office counselling and placement services.

Key tasks: counselling and placement

The vocational counsellors in Germany's approximately 180 employment offices furnish advice and information as prescribed by law[1] to young people and adults before they start their working lives on all matters of training, studies and career options and also when they change occupations or give up a training or university course. Counsellors also support school-leavers and new entrants to the workforce in fulfilling their training aspirations. Their responsibilities include in-company training placement in accordance with the training vacancies companies report to the offices. The vocational counselling services are offered to applicants and enterprises on a voluntary basis. Nevertheless, about 90% of all vacant training places are reported to the vocational counselling agencies. A similarly large percentage of prospective trainees take advantage of the service. This is an indication of the major impact of vocational counselling in balancing the training-place market. Intensive contacts with companies in lining up training places and placing applicants guide enterprises in renewing their workforces.

"Society's interest in vocational counselling as a public service is primarily to provide timely vocational guidance and information in order to prevent labour-market imbalances, poor career decisions and young people dropping out of training and thus prevent unemployment and other social costs and financial consequences of inadequate information and counselling."

1) The legal basis was the Labour Promotion Law (AFG), Paras. 25-32, until 31 December 1997 and since 1 January 1998 the 3rd Social Security Code (SGB III), Paras. 29-44.

"In the interests of timely preparation for choosing training and an occupation, vocational counselling centres supply on-site information to pupils two years before they finish their general education about various education, training and career opportunities, about training and labour-market prospects and about the assistance and services available at government employment offices."

"...individual vocational counselling remains the centrepiece of vocational guidance services."

Vocational orientation: cooperation with schools and parents

In the interests of timely preparation for choosing training and an occupation, vocational counselling centres supply on-site information to pupils two years before they finish their general education about various education, training and career opportunities, about training and labour-market prospects and about the assistance and services available at government employment offices. Whenever possible, parents are included as important partners in the process of choosing an occupation. Vocational counsellors accompany school classes on their first visit to employment office vocational information centres (BIZs), which offer a wide self-information package for all vocational questions - from brochures and resource folders on individual occupations and training paths to films, slides and audio tapes and even vocational choice orientation computer programs (BIZ computers) and online information on education and training opportunities (KURS database on initial and continuing training) and a computer-aided job information service (SIS and ASIS). Almost all employment offices in Germany have vocational information centres, supplemented by self-information units (BIZ mobiles) to provide information in rural areas and at special events.

Finally, vocational counselling provides schools and individuals with a variety of up-to-date vocational orientation media and teaching materials - some printed, some electronic and some accessible on the Internet (http://www.arbeitsamt.de).

Company contacts and insight into the world of work

The vocational counselling service also organizes seminars, lecture sessions, education fairs and job exchanges where people in secondary and higher education and new entrants to the workforce can obtain current first-hand information on occupations and fields of work, on the contents and requirements of training courses and occupations and can make contacts with enterprises and potential employers and gain practice-related insight into the world of work.

The vocational counselling service also organizes individual periods of practical work experience and company familiarization sessions to supplement school-required on-the-job units and give young people another opportunity to gain pre-career experience. These initial experiences are considered by enterprises, educators and young people to be a very important aid in selecting a future occupation and a strong factor in reducing the above-mentioned profound vocational disorientation of young people.

Individual guidance in personal counselling sessions

In addition to the variety of information and orientation opportunities, individual vocational counselling remains the centrepiece of vocational guidance services. Anyone with a vocational concern can obtain customized advice. Depending on the nature of the concern and the urgency of the matter, guidance seekers can either take advantage of regular hours of consultation at vocational counselling offices or arrange an appointment with a vocational counsellor for an indepth interview. Government employment offices provide vocational counselling not only on their own premises but also in schools, colleges and universities to make their services more accessible. Early contact in schools enables vocational counsellors to provide constant guidance to young people as they go through the process of choosing a vocation. In the process of choosing an occupation and finding a training place, young people usually meet their vocational counsellor two to three times. The exact number of contacts depends on the vicissitudes of the individual case.

Support for vocational training - an important contribution to compensate for market-related and individual shortcomings

In Germany the vocational counselling service is also responsible for promoting the occupational integration of young persons with individual education and training shortcomings, social disadvantages or handicaps, which prevent them from making it on their own. The service

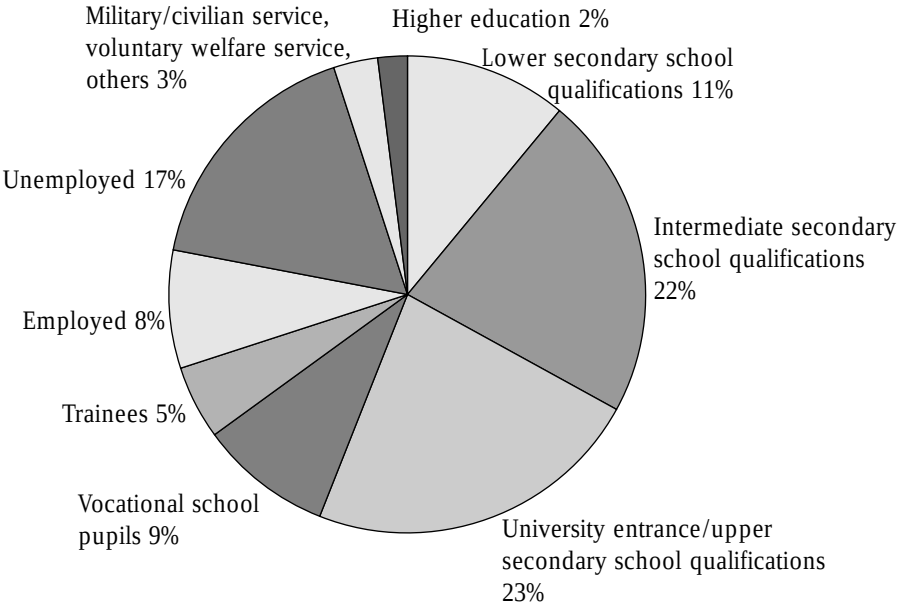
has a wide variety of tools, primarily for the financial support of vocational preparation programmes, remedial teaching during training for trainees who perform below par, out-of-company training courses and special training and rehabilitation measures for the handicapped. In times of severely strained labour and training markets, such integration efforts become more important since the number of young people who cannot be integrated in the free market considerably increases. In 1996 the Federal Labour Office supported about 165 000 young people who participated in vocational preparation courses or in-company or inter-company vocational training with supplementary social education support.

Highly qualified, trained and specialized counsellors guarantee high professional standards of vocational guidance and orientation

There are specialized counsellors for the various educational and training domains, corresponding to the multifaceted school and training system in the Federal Republic of Germany. General vocational guidance counsellors deal with the concerns of lower and intermediate secondary school pupils and facilitate their vocational integration into in-company training places or full-time specialized vocational schools. Vocational counsellors for college and university-bound young people and those already in higher education are specialists for tertiary education programmes and the academic labour market and advise young people attending grammar schools, university students and graduates. In addition specialists are available at both levels for counselling young handicapped individuals.

Specialists in general vocational counselling are trained in a social science-oriented three-year course at the Department of Labour Management at the Government Institute of Higher Education in Mannheim. University graduates in appropriate fields (economics, social sciences, languages, education and natural sciences) are recruited to provide vocational counselling for persons aspiring to or enrolled in higher education. The recruits are given nine months of in-house training on top of their studies. A wide range of further training opportunities ensures the quality of counselling.

Fig. 1.:
Vocational Counselling Clients in Fall 1996 by Status and Prospective School Certificate



Total pupils in general education 54%

Advice seekers' concerns and information requirements

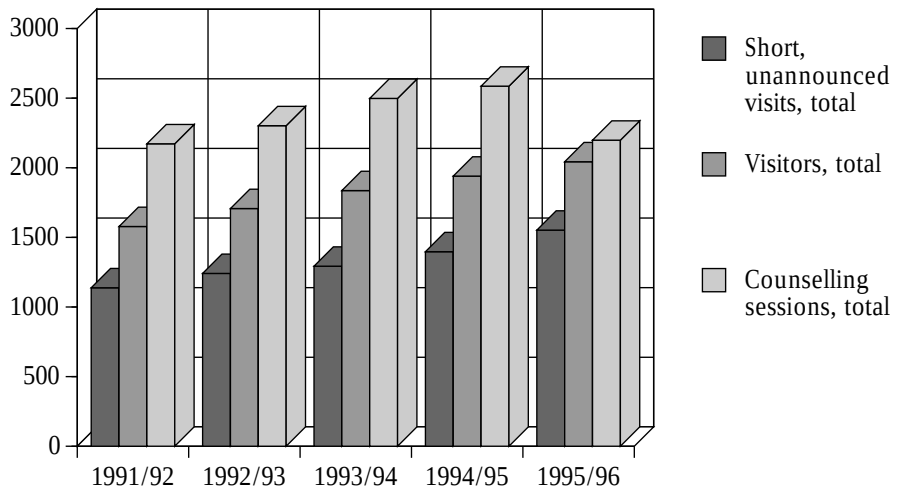
Increased popularity of counselling suggests growing demand, not only from school leavers

The diverse, targeted information and counselling opportunities provided by government vocational counselling services in Germany reach an average of 90% of all school leavers. But they are not the only beneficiaries. As stated above, the law assigns a wider scope to government vocational counselling agencies. A recent survey by the Federal Labour Office[2] shows that only 54% of all persons who visit the counselling offices in the course of the year to obtain personal vocational guidance are enrolled in a general education school and headed for transition to vocational training or higher education. The rest are already participating in vo-

"The diverse, targeted information and counselling opportunities provided by government vocational counselling services in Germany reach an average of 90% of all school leavers."

2) Federal Labour Office (Ed.), Vocational Counselling 1995/96 - Activities. Training Market, Statistics, Nuremberg, March 1997, p. 3ff

Fig. 2:
Trends in vocational counselling



Counselling sessions 95/96, not comparable to previous years due to new system of compiling statistics.

cational training or higher education, employed, doing military or civilian service or, last but not least, unemployed (see Fig. 1).

A total of 2.13 million advice seekers sought personal guidance from German employment office vocational counsellors in the 1996/97 counselling year. Utilization of vocational counselling has increased greatly in recent years both in terms of the number seeking guidance and the number of counselling sessions and visits to offices during the hours they are open to the public (Fig. 2). Due to the limited personnel capacities, unannounced, usually relatively brief office contacts have become more prevalent, while more thorough, pre-arranged counselling sessions have not increased to the same degree.

The number of visitors has also increased at a much greater rate than would have been expected from demographic trends involving school leavers. Whereas the number of advice seekers rose by about 30% from 1992 to 1996, the number of general education school leavers only increased by about 15% during the same period. This means that more and more people who have already left school now seek counselling services. Another indicator of this fact is that the percentage of persons seeking vocational guidance aged 20 and older jumped from 20% of the total in 1986 to 30% in 1996.

Most frequent requests: information, assistance in making decisions, training placement

The heterogeneous clientele approaches vocational counselling with a correspondingly varied set of wishes. Currently around one third of the more than 2 million visitors are interested in placement in an in-company training place. The others either seek advice and information well in advance of their search for training and their decision on an occupation or they have other matters on their minds, e.g. entering university or planning their higher education, their career prospects on completion of training, issues involving discontinuation or change of training.

The survey of vocational counselling clients mentioned above suggests a very diverse spectrum of information and counselling requirements (see Fig. 3). The most sought-after items are information on occupations, particularly “future-orientated occupations“, and concrete assistance in finding a training place. The second type of assistance sought by young people in choosing an occupation is personal assistance in taking decisions. This can be provided in a detailed discussion of the client’s own career aspirations, the opportunities available and questions of personal aptitude for specific training courses and occupational fields. Young people with no concrete vocational preferences, in a very early stage of the process of choosing an occupation, are more likely to need assistance in questions of vocational decisions and aptitude, while guidance seekers with definite career goals seek additional information to focus their aims or aid in achieving their objectives.

As Europeanization progresses, the demand among young people for information on training opportunities abroad also grows. The survey shows that approximately 30% of all those who seek advice from vocational counsellors do so for this reason. However, until now this area has remained a privileged domain of young people with a better scholastic background. Half of those completing upper

secondary school expect employment office vocational counsellors to inform them about training and higher education opportunities outside Germany, but few of those completing intermediate or lower secondary school approach counsellors about this possibility.

Trends in German vocational counselling

The Social Security Code III, which came into force in January 1998, created new foundations for vocational counselling in the Federal Labour Office. The abolition of a monopoly, permitting private competitors to enter the field of individual vocational counselling and training placement, will put the government vocational counselling service to the test. Moreover, the new law points the way to giving the employment office advisors a broader set of tasks, as discussed in Section 1.

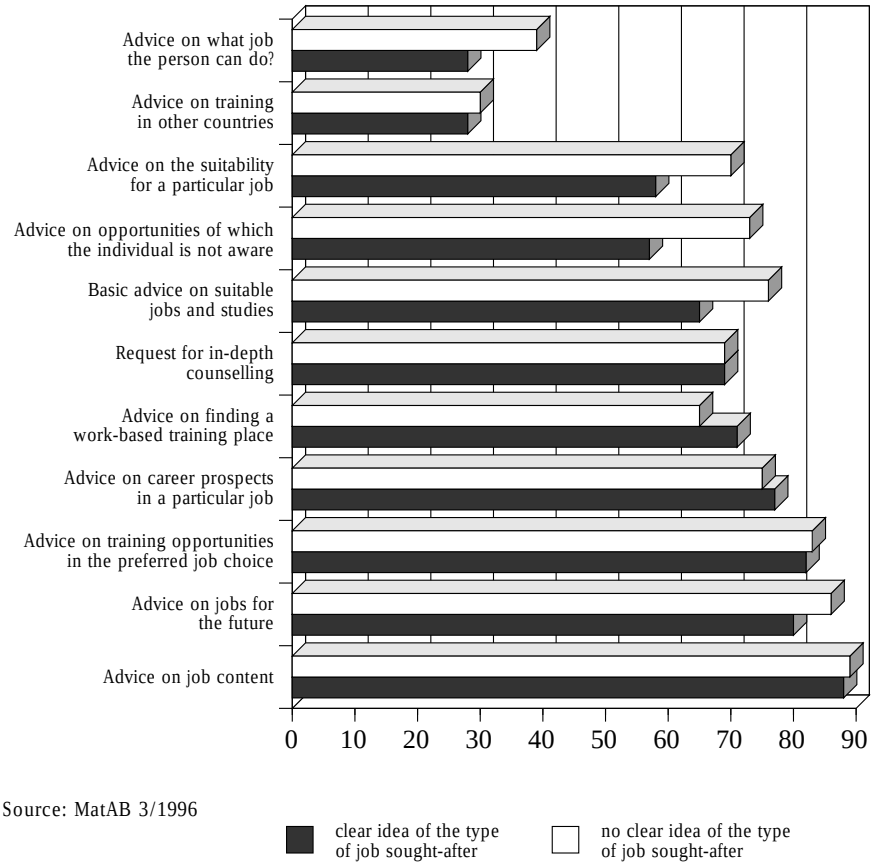
❏ In future more vocational counselling is to be offered to young people and adults - even for those already working. It is to include follow-up monitoring.

❏ Their counselling role expressly extends to labour-market counselling for employers and enterprises, not only in terms of filling training places and job placement, but also in helping to shape jobs and working conditions.

❏ Employment of self-information facilities for those choosing careers, for job-seekers and employers, giving them positions vacant and recruiting tips with no counselling involvement, is to be expanded rapidly to facilitate and accelerate matching processes on the labour and training markets.

The vocational counselling system must reorganize to meet a growing client demand with stagnating or dwindling resources. Nevertheless, the self-information facilities must still be supplemented by an expansion of individual, personal guidance, experience having shown that the introduction of extensive self-information resources in employment office vocational information centres (BIZs) has by no means decreased the demand for personal counselling. Quite the contrary. More information usually creates more questions and more requests for help in structuring and individual evaluation of the information. More and more, vocational counsellors are becoming "information scouts" capable of pointing out a trail through the "information jungle".

Fig. 3:
What assistance do you need in order to be able to decide on the choice of vocation/course of studies?
% (multiple responses were given)



Source: MatAB 3/1996

The expanding requirements must also be met by intensive cooperation with partners and players in these areas of activity. Cooperation with schools, colleges and universities, with vocational training coordinators in the business world, with parents and teachers who guide young people in choosing an occupation, e.g. by supplying information and teaching materials, jointly organizing events, further training, etc, is becoming more and more important. Cooperation is also gaining ground in higher education, where aggravation of graduates' job market problems provides Federal Labour Office counselling and placement services with a

"The abolition of a monopoly, permitting private competitors to enter the field of individual vocational counselling and training placement, will put the government vocational counselling service to the test."

"More information usually creates more questions and more requests for help in structuring and individual evaluation of the information."

growing chore. The establishment of special higher education teams on all major German campuses and increased cooperation with student counsellors, student institutions and business world opportunities is designed to meet the growing demand from students and graduates for vocational orientation, guidance and assistance in launching a career.

The German Federal Labour Office has responded to the increased demand for Europe-oriented information on training and occupations by establishing European Vocational Counselling Centres (EBZs). To date 15 of these have been set up, one for each of the 15 EU countries. The centres engage in a steady exchange of information with their counterparts in the appropriate country. The partners share their experience and support each other in gathering information. Each EBZ has a multimedia Euro PC, which has access to all of the counterpart country's pertinent databases and bulletins. The Euro PCs relay this information via online links to institutions submitting a query. Most of the enquiries deal with opportunities for training and higher education, work experience, certification issues, vacation jobs, financial aid for stays abroad, etc.

Beyond the above-mentioned legal, organizational and informational advances, future vocational counselling must focus more on changes of substance in the world of work and prepare young people in particular to cope with these trends. This means, among other things:

❏ Vocational counselling must, in light of growing job insecurity, provide access to initial vocational training of the highest calibre possible and foster the commitment to ongoing learning following initial training, without which today's vocational qualifications are transient.

❏ Vocational counselling must provide more transparency for its clients in an increasingly fuzzy and intricate education and training world and clarify all entitlements and the labour- market outlets since many young people and their parents are overwhelmed by the multiplicity of choices.

❏ Vocational counselling must encourage young people, parents and teachers to conclude that choice of occupation is an ongoing process instead of a once-in-a-lifetime, irreversible decision. Young people deciding on an occupation must be shown that their choice of initial vocational training is the embarkation on a process of vocational qualification, that they are plotting a general course but should not eliminate future options. They should be made to realize that they are not making a final decision on their subsequent career objective or the type of job they will hold. The flexibility built into the training and employment system permits them to change course at a later date. Contingency planning requires sustained professional guidance, as stated above.

❏ Young people must be prepared to ride labour-market dips and to cope with continued erosion of traditional forms of work without undue anxiety. Changes in the labour environment can also create chances, e.g. individual and flexible life styling and better compatibility of family and job responsibilities for both men and women.

❏ Despite the unfavourable labour-market signals on future employment prospects, young people must be instilled with confidence in their occupational future. Uncertain forecasts are less helpful than encouragement to bank on individual strengths, interests, motivation and ambition - the most important assets for an uncertain vocational future.

Self-directed learning in the world of work

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Self-directed learning is variously defined. Different methods have been used in an attempt to provide an empirical description and explanation of what is involved. Generally speaking, self-directed learning may be seen as a dynamic interplay of interests, motivation, strategies, control and assessment. At the same time, as the results of the studies reported here show, it is apparently also related to environmental circumstances as they are experienced.

Introduction

"Lean production", "Reengineering", and "Learning organisation" occupy a large area in the theory and practice of organisational and personal development. They have led to more competence being shifted back to the place where a workpiece is machined or a service provided. At the same time they imply and indeed demand, though not explicitly, a continuing process of training lasting at least for the whole of working life. In this context self-directed learning would seem to be assuming growing importance as a complement to other forms of further and in-service training - witness such events as the 12th International Self-Directed Learning (SDL) Symposium held in Orlando/FL in 1998, the first Asia Pacific Seminar on Self-directed Learning in Seoul in 1995, the 3ème Colloque Européen sur l'Autoformation held in Bordeaux in 1996 and the First World Conference on Self-Directed Learning that took place in Montreal in 1997.

Self-directed learning variously denominated

While self-directed learning is currently a focal point of discussion worldwide, that in no way signifies that the term is always understood in the same way (Straka, 1996). Philippe Carré (1994), for example, discovered well over 20 different names for self-directed learning while Roger Hiemstra (1996) analysed all the conference proceedings then existing for the 10th International Symposium on self-directed learning and found over 200.

What, then, is self-directed learning and how can one define it? Those seeking an answer to this question will invariably come upon works such as those of Tough (1971) or Knowles (1975). Knowles, who did much to ensure that this type of self-education was accorded the appropriate attention in the theory and practice of adult education, defines self-directed learning as a process in which individuals take the initiative in order with or without the help of others to determine their learning needs, set themselves their learning objectives, discover human and material learning resources, select and implement suitable learning strategies and assess the results of their efforts to learn (Knowles 1975).

However, if we disregard various prescriptive considerations, such as the learning plan and learning contract or reports of successful use of the method (Knowles et al., 1985), no further theoretical derivation or systematic description is given of what initiative means or what activities take place between the time at which a need to learn is ascertained and the time when the results are assessed (Straka & Nenniger, 1995).

Learning

How therefore is the concept of "self-directed learning" to be understood? As the term tells us it is a specific form of learning, that is self-directed. In order to establish a basis of understanding of what learning involves for the purposes of this article we shall begin by quoting a number of related comments by Huber (1972).

"Learning is always an encounter with the object of learning; ... an interaction takes place between the learner and the subject-matter to be learnt. The learner is interested in the subject-matter, he applies himself to it and studies it in depth. The subject-matter, on the other hand, arouses the student's interest, attracts him, grips him and tells him a great deal". (Huber, 1972, p 28, author's underlining).

This view of learning is entirely consonant with the general theoretical under-

"we (...) define self-directed learning as a process which takes place when the relationship between the learner and the subject-matter is one of interest, the learner determines his need to learn on the basis of interest, employs strategies to help him assimilate the content, controls these strategies and assesses his success in learning (...)."

standing of learning as the interaction between an individual and his historically and socially influenced environmental circumstances bringing about lasting changes in the individual (Klauer, 1973). On the basis of Knowles' and Huber's definitions we could therefore define self-directed learning as a process which takes place when the relationship between the learner and the subject-matter is one of interest, the learner determines his need to learn on the basis of interest, employs strategies to help him assimilate the content, controls these strategies and assesses his success in learning (Nenniger et al., 1996).

Concepts and constructs of self-directed learning

It is our intention here to define the terms *interest, strategies, control* and *assessment* more closely by reference to theories and findings in the relevant fields of research. A first interim result is the following constructs which - we assume - characterise motivated self-directed learning (see Fig. 1). As we explain elsewhere and as indicated in the figure, these constructs are given more concrete expression by means of "dimensional scales" (Nenninger et al, 1996).

Let us look first at the construct **implementation** involved within the strategies concept. The differentiation and empirical validity of this construct was and is a focal point of learning research. As explained in more detail elsewhere (Straka et al., 1996) it is used on the one hand to cover activities by means of which information is compressed and ordered (= structured). However, it also involves working out differences and similarities and a process of critical scrutiny (Brookfield, 1989) of information (= elaboration) and even repetition in order to absorb what has been learned.

In self-directed learning activities which may precede implementation have a higher ranking. They are covered by the constructs, sequencing and resource management. Under resource management a distinction can be made between activities for obtaining information, designing the place at which to do the learning and collaboration. Sequencing covers planning of time, stages of learning and periods of relaxation.

Implementation, resource management and sequencing are subject to **control** by the person concerned. Control may be broken down into its cognitive aspect (eg. when I learn I don't allow myself to be distracted), its metacognitive aspect (eg. I sometimes interrupt my learning to think back over what I have done so far) and its motivational aspect (eg. it is important for me to achieve my learning objective).

Evaluation is made up of the two constructs, diagnosis and attribution. Diagnosis relates to the final individual and hence subjective assessment of the result of learning as the difference between the original theoretical objective and what has actually been learnt. Attribution is the process of determining reasons for the learning result as it is diagnosed.

Carrying out the various activities we have described presupposes that the learner has already geared himself to learning and is, one might say, "switched on". Knowles defines this as initiative. In line with traditional didactic thinking (see Huber, 1972) this aspect has been termed interest. Referring back to theoretical studies of interest (Deci and Flaste, 1995; Prenzel, 1986) and reflections and findings on the subject of performance (Heckhausen and Rheinberg, 1980) a distinction is made between interest in content and procedural interest. Both types of interest are defined on the basis of the value *x* expectations-model (Atkinson, 1964).

In the case of **interest in content** the value component relates to the significance attributed to the subject-matter being learned, hence the content aspect of the learning objective. The expectation component relates to the individual's assessment of his ability to grasp the content of what it is desired to learn (eg. I consider it important to know the responsibilities of the various departments (= value) and I feel confident of my ability to do so (= expectation)).

In the case of **procedural interest** the value component is the importance attributed by the learner to certain modes of behaviour or behavioural strategies in

order to achieve the learning objective. Here the expectation component relates to the individual's assessment of his ability to implement such behavioural strategies. The considerations from the procedural point of view are, looking ahead, the activities that have been grouped under the strategies, control and assessment concepts. One example of procedural interest as regards resource management would be: I consider it important to ask colleagues for information when necessary (= value): I find it easy to ask colleagues for information when necessary (= expectation) (Straka et al., 1996).

The two-shell model of motivated self-directed learning

If the concepts are ordered we obtain what we call the "Two-shell model of motivated self-directed learning". This distinguishes between socially and historically influenced circumstances, internal circumstances (such as the knowledge and values already existing when learning begins) and present events, which are grouped together under interest, learning strategies, control and assessment (see Fig.2).

On the basis of this model self-directed learning may be conceived as a process in which a person approaches the subject matter to be learnt with content and procedural interest and employs strategies of resource management, sequencing and implementation, controls his working cognitively, metacognitively and motivationally, assesses the result of learning and attributes reasons for it.

Environmental circumstances

Learning is subject to the sense of responsibility of the learner, since no one can learn for someone else. At the same time the process of learning is closely linked to the general environment and in the world of work to environmental circumstances that are the result of historical and social factors. As a result the conditions prevailing differ from one specific workplace to another and may also be differently perceived by the people working there. This gives rise to the question of what conditions at the workplace may be important for self-directed learning by those employed there. An attempt was made to answer it with the "self- determination theory of motivation" (Deci and Ryan, 1985: Deci and Flaste, 1995), whose authors postulate and demonstrate empirically that interest-driven behaviour is linked to an individual's sense of autonomy, competence and social integration. These, so far as conditions at the workplace are concerned, may be defined as follows:

Fig. 1:
Concepts and constructs of motivated self-directed learning

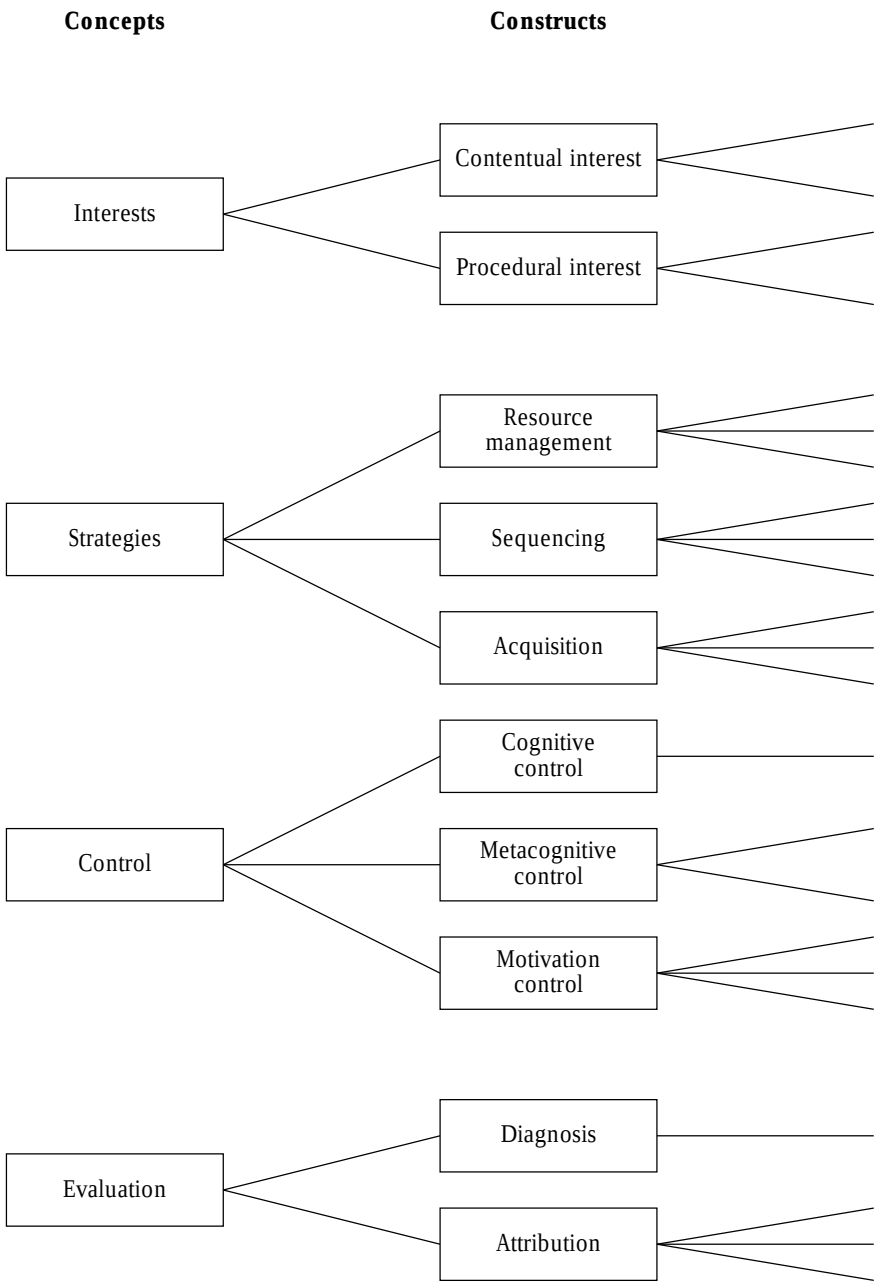
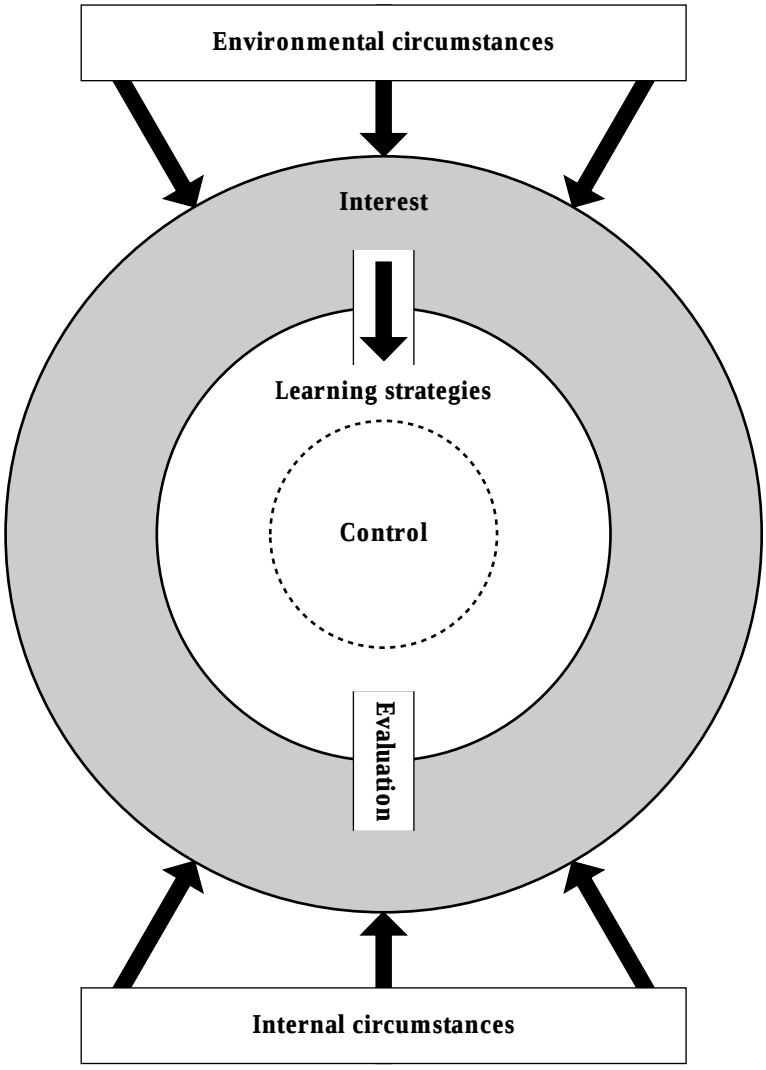


Fig.2

Concept-based representation of the two-shell model of motivated self-directed learning



❑ **autonomy** is experienced at the workplace when a person has the impression of having scope to act on their own initiative and of being able to perform various tasks as they determine;

❑ **competence** is experienced at the workplace once a person has the impression that they work competently and successfully and thus experiences effectiveness;

❑ **social integration** experienced at the workplace is when a person's work is appreciated and accepted by superiors and colleagues and they consider themselves part of the work community.

These three types of experience at the workplace are - it is assumed - linked to interest which - it is again assumed - is related to strategies, control and assessment.

Empirical findings

The "Two-shell model of motivated self-directed learning" has so far been emprically validated using the example of a trainee in industry or local government administration (Straka et al., 1996; Nenniger et al, 1996). On the basis of new data we shall now discuss the connection between conditions as experienced at the workplace and selected dimensions of self-directed learning.

Conditions at the workplace and interest in self-directed vocational learning

A potential analysis was used to study the connection between interest in self-directed vocational learning and conditions at the workplace as defined by Deci and Ryan. To this end 194 employees of a north German branch of the German health insurance authority were questioned, 53% of whom were female and 47% male, and 64% under and 35% over the age of 40. 68% had attended the Real- or Hauptschule (approximately equivalent to secondary modern school), while 32% had passed higher school exams**.** The following correlations[1] significant at least at the 5% level, were obtained for the previously postulated assumptions (see table 1).

Experiencing social integration correlates positively with interest. This leads us to assume that colleagues and superiors tend to comment on the results of work rather than on working procedures. There is a stronger correlation between the degree of autonomy experienced and interest in work content. Respondents who claimed to experience autonomy at the workplace would seem particularly to link this to interest in work content. Experiencing competence at the workplace would seem to be of crucial importance in the case of this random sample since - unlike the other types of experience - it correlates positively both with interest in content and with interest in procedure.

1) We would point out that only the content and procedural value components of interest were taken into account.

Table 1

	Experiencing autonomy	Experiencing competence	Social integration
Procedural interest	0.23	0.30	-
Interest in content	0.54	0.49	0.38

Conditions at the workplace, interest, strategies and control

The first phase of the "Self-organised learning at the workplace" (SELA) model experiment currently being conducted in cooperation with the industrial training centre for the Lower Weser (BWU) and the organised and self-directed learning (LOS) research group is concerned inter alia with developing and testing survey tools to be used later to evaluate continuing training. These tools were tried out on 67 employees in the fish processing industry. 46% of whom had completed Realschule and 54% had a higher school certificate, 58% were female and 73% under 40. Although it was not the purpose of the study - which was actually designed to validate the instruments - the opportunity was taken to look into the second assumption referred to above by means of correlation analyses. The correlations which are significant at least at the 5% level are given in Table 2 below.

According to the respondents, experiencing autonomy and competence correlates both with strategies (0.28 and 0.37) and control (0.25 and 0.34), as also with procedural interest (0.44 and 0.53). Experiencing social integration correlates positively with control (0.28) and with strategies (0.42). Procedural interest itself correlates with strategies (0.42) and control (0.52), which in turn correlate positively with assessment (0.31 and 0.61).

Summary and outlook

Self-directed learning is differently defined (Straka, 1996). Various methods have been used in an attempt to provide an empirical description and explanation of what

Table 2

	Experiencing autonomy	Experiencing competence	Experiencing social integration	Procedural interest	Strategies	Control	Assessment
Experiencing autonomy	1.00						
Experiencing competence	0.73	1.00					
Experiencing social integration	–	0.38	1.00				
Procedural interest	0.44	0.53	–	1.00			
Strategies	0.28	0.37	0.25	0.42	1.00		
Control	0.25	0.34	0.28	0.52	0.61	1.00	
Assessment	–	–	–	–	0.31	0.25	1.00

is involved (Brockett and Hiemstra, 1991). Generally speaking, self-directed learning may be seen as a dynamic interplay of interests, motivation, strategies, control and assessment (Straka et al., 1996). At the same time, as the results of the studies reported here show, it is apparently also related to environmental circumstances as they are experienced. Without wishing to give undue weight to these findings - more detailed analyses based on other and larger random samples will have to be conducted - they do indicate that quoting plausible but rather undifferentiated activities and/or personal characteristics (as determined, for example, by means of a Delphi study (Guglielmino, 1977)) lead nowhere (see also Straka and Hinz, 1996) unless there is also recourse to strong theories from related disciplines. If these should prove valid for the self-directed learning of adults and the specific conditions of their working environment, they should permit well founded, promising and specific recommendations to be made for tailored personal and organisational development in firms in the third millennium.

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Straka, G. A., Nenniger, P., Spevacek, G. and Wosnitza, M. (1996): Motiviertes selbstgesteuertes Lernen in der kaufmännischen Erstausbildung - Entwicklung und Validierung eines Zwei-Schalen-Modells. In: Zeitschrift für Berufs- und Wirtschaftspädagogik, Beiheft 13, 150-162

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Europe - International

Information, comparative studies.

Identification and validation of prior and informal learning : experiences, innovations and dilemmas.
Identification et validation de l'apprentissage antérieur et informel : expériences, innovations et problèmes.
Ermittlung und Validierung von früher bzw. informell erworbenen Kenntnissen : Erfahrungen, Innovationen, Probleme.
BJORNAVOLD J
European Centre for the Development of Vocational Training, CEDEFOP
Thessaloniki: CEDEFOP, 1997, 61 p.
(CEDEFOP Panorama, 67)
Availability:
CEDEFOP P.O.B. 27-Finikas,
GR-55102 Thessaloniki,
info@cedefop.gr
EN FR DE

During the last 5-10 years, a number of countries, European and non-European, have introduced methodologies and systems for the identification, validation and certification of prior learning. At the European Union level, several suggestions relating to a European Skills Accreditation System and a Personal Skills Card have been made. It is believed that the recognition of prior learning will improve the transparency and transfer of skills. As most of the existing methodologies and systems have been in operation for a comparatively short period of time, it is difficult to decide whether this expectation is justified or not. Existing information is incoherent, and in most countries, of a rather limited scope. With some exceptions, descriptions are based on assumptions of certain potentials, not on de facto evaluations of experiences so far. The aim of this CEDEFOP Panorama is to present and discuss some of the experiences and dilemmas related to these tendencies.

Forecasting sectors, occupational activities and qualifications in the Federal Repubic of Germany : a survey on research activities and recent findings: contribution to the Ciretoq meeting, Marseilles, 20 and 21 November 1995.
European Centre for the Development of Vocational Training, CEDEFOP; Institut fuerArbeitsmarkt- und Berufsforschung der Bundesanstalt fuer Arbeit, BIBB
Thessaloniki: CEDEFOP, 1997, 82 p.
(CEDEFOP Document)
ISBN 92-828-1172-7
Availability:
CEDEFOP,
Marinou Antipa 12,
GR-57001 Thessaloniki
EN

This paper deals with topical long-term projections of the structure of the labour force in West Germany and their main results and implications. Three different macroeconomic approaches to manpower forecasting are distinguished: 1) econometric forecasts of global manpower demand and projections of labour force potential; 2) structural approaches to manpower demand by sectors qualifications, and job activities; and 3) projections of manpower supply by levels of qualifications, including new supply and replacement demand.

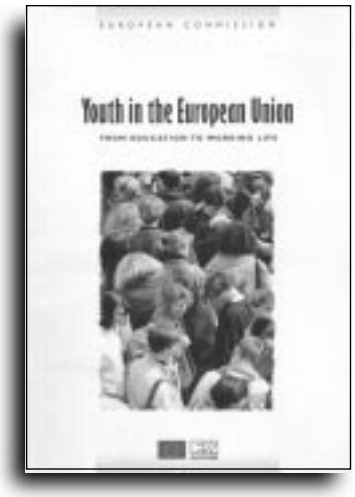
Work organisation and qualifications in the retail sector : The case of the micro-enterprise, synthesis report.
KRUSE W et al
European Centre for the Development of Vocational Training, CEDEFOP
Luxembourg: EUR-OP, 1997, 99 p.
(CEDEFOP Document)
ISBN 92-828-1574-9, en
Availability:
EUR-OP,
L-2985 Luxembourg,
or from its national sales offices
EN

The present study investigates the relations between work organization and qualifications in the retail sector. Work

Reading selection

This section has been prepared by ***Martina Ní Cheallaigh,*** *and the Documentation Service with the help of members of the national documentation network*

This section lists the most important and recent publications on developments in training and qualifications at an international and European level. Giving preference to comparative works, it also lists national studies carried out as part of international and European programmes, analyses of the impact of Community action on the Member States and national studies seen from an external perspective.



organization is in constant transformation, having an important impact on job content and tasks to be performed. New work requirements are emerging with both technical and social dimensions. Traditional qualifications and work hierarchy are thus put into question. The retail trade is one of the sectors which are under constant change due to various factors such as automation, the Single Market and the globalisation of the economy, the shortening of product life cycles and extremely diversified customer needs. This study looks at microenterprises, a rather rare target group for research at European level. Twenty enterprises, each employing up to ten people from Greece, Portugal, Ireland and the Netherlands have been examined and their processes of internal changes, results and relationship to qualifications, analysed.

Key data on vocational training in the European Union.
European Commission - DG XXII
Luxembourg: EUR-OP, 1997, 132 p.
ISBN 92-828-1322-3, en
Availability:
EUR-OP,
L-2985 Luxembourg
or from its national sales agents
EN FR DE

This report has been produced in response to the growing awareness of the important role to be played by vocational training in helping to improve the competitiveness of the EU and its Member States. It is divided into five chapters. Chapter 1 looks at the demographic and labour market situation to which developments in vocational education and training are having to respond. Chapter 2 provides a statistical description of the initial vocational training programmes in place in each of the Member States. Chapter 3 gives indicators on the continuing vocational training provided by enterprises for their employees. Chapter 4 covers the training experiences of very small enterprises and of the self-employed, and finally, chapter 5 presents information on the European Community programmes and initiatives financed through the European Social Fund (ESF) and the Leonardo da Vinci Programme in order to promote vocational training.

Youth in the European Union : from education to working life.
European Commission; Statistical Office of the European Communities, EUROSTAT
Luxembourg: EUR-OP, 1997, 111 p.
ISBN 92-828-0438-0, en
Availability:
EUR-OP, L-2985 Luxembourg
or from its national sales agents
EN FR DE

This study describe the major trends, similarities and contrasts which exist between Member States in such areas as education, training, transition to the labour market, family life and living conditions. It highlights two points: firstly, regardless of how youth is defined, the percentage of "young" people in the population is slowly but surely falling in every Member State of the European Union. Secondly, the characteristic stages in the transition from full-time education to employment are slowing down: young people are staying longer in education, taking more time to cross over from training to work, and waiting longer before starting families of their own.

Training after 30 years of age.
Statistical Office of the European Communities, EUROSTAT
Statistics in focus, population and social conditions (Luxembourg) 11, 1997, p. 1-6
ISSN: 1024-4352, en
Availability:
EUR-OP, L-2985 Luxembourg
or from its national sales agents
EN FR DE

According to the results of the Labour Force Survey, just over 8 million Europeans over 30 years of age declared in Spring 1996 that they had received teaching or training in the four weeks preceding the interview. Training rates are higher in northern Europe: 11.8% in Denmark, 11.7% in Sweden, 10.7% in Finland, 8.6% in the Netherlands and 7.4% in the United Kingdom, as against an EU average of 3.6%. Current statistical tools do not permit all training measures aimed at the unemployed to be identified. Thus, this study focuses on the 6.3 million people in employment following training. It emerges that being new to the job and having qualifications are important factors in increasing training opportunities.

Secondary education in the European Union: structures, organisation and administration.
The European Education Information Network, EURYDICE
Brussels: EURYDICE, 1997, 141 p.
ISBN 2-87116-263-8, en
Availability:
European U-nit of EURYDICE,
rue d'Arlon 15,
B-1050 Brussels,
Tel. 32-2-238-30-11,
Fax. 32-2-230-65-62,
EURYDICE.UEE@euronet.be
EN FR

At the end of the twentieth century, secondary education has a major role to play in training young people and providing for their future development. The challenge to be met is no longer so much a matter of democratising access to this level of education as of adapting teaching methods and course content. This study aims to answer many of the questions raised by those people who would like to understand the organisation and main tasks involved at this stage of the education process. This report is divided into four main chapters: existing education structures; the organisation of education; teacher training; and the way in which secondary education is administered nowadays. It highlights the main trends that emerge as well as the structural diversity between countries. This study covers the EU Member States as well as the EFTA/EEA countries.

Qualification challenges in the partner countries and Member States.
European Training Foundation, ETF
Luxembourg: EUR-OP, 1997, 146 p.
ISBN 92-9157-067-2
Availability:
EUR-OP, L-2985 Luxembourg
or from its national sales agents
EN

This document brings together the papers presented to the two-day workshop organised by ETF on curriculum innovation whose aim was to bring experts from the partner countries and the Member States together to discuss challenges and consequences of curriculum development for the partner countries. Curriculum innovation is a complex process that must take into account overall changes in society, in the economy and in the field of science and technology. The main outcome was an increased awareness that there is a difference between a curriculum that is aimed at producing skills and knowledge and one that is oriented to the ability to solve problems.

Vocational education and training reform
- ❑ **in Bulgaria.**
  25p., ISBN 92-9157-128-8, en
- ❑ **in Romania.**
  27 p., ISBN 92-9157-149-0, en
- ❑ **in Slovenia.**
  26 p., ISBN 92-9157-152-0, en
- ❑ **in the Czech Republic.**
  31 p., ISBN 92-9157-131-8, en
- ❑ **in Poland.**
  26 p., ISBN 92-9157-146-6, en
- ❑ **in Latvia.**
  27 p., ISBN 92-9157-140-7, en
- ❑ **in Lithuania.**
  30 p., ISBN 92-9157-143-1, en
- ❑ **in Estonia.**
  27 p., ISBN 92-9157-134-2, en
- ❑ **in Hungary.**
  34 p., ISBN 92-9157-137-7, en

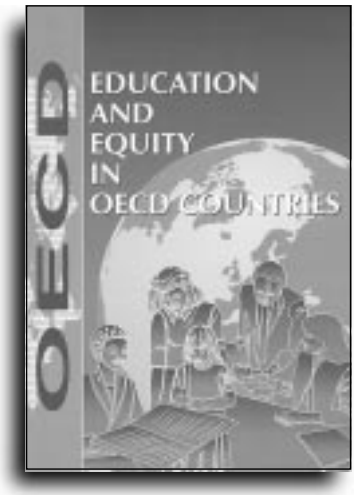
European Training Foundation, ETF
Luxembourg: EUR-OP, 199
Availability:
EUR-OP, L-2985 Luxembourg
or from its national sales agents
EN

This report on vocational education and training reform has been produced by the European Training Foundation based mainly on information provided by the national Observatory. It consists of a condensed description of the present situation in vocational education and training and analysis of the main challenges facing vocational education and training reform in Bulgaria. It also outlines possible priorities for future assistance to sustain and further the reform process. The report will be updated in 1998. This document can be download at: www.etf.it/FTP/\/ET/\/ETREP/

Promoting vocational education and training: European perspectives.
BROWN A ed.
European Commission - LEONARDO programme; EUROPROF;

Tampere: Tampereen yliopiston opettajankoulutuslaitos, 1997, 137 p.
(Ammattikasvatussarja, 17)
ISBN 951-44-4193-1;
Availability: University of Tampere, P.O.Box 617, FIN-33 101 Tampere
EN

This book is one outcome of a major European research and development project on "New forms of education of professionals for vocational education and training". The research project was sponsored as part of the European Commission's LEONARDO programme. The aim of the project was to conduct transnational research leading to the identification of new occupational profiles for vocational education and training professionals, for trainers, planners and managers of VET in Europe, and the establishment of new curricula, and training programmes for those professionals. The project design adopted an interdisciplinary approach with the intention of developing a close interaction between research questions and development tasks.



Convention on the recognition of qualifications concerning higher education in the European region : Lisbon 1997.
Council of Europe; United Nations Educational Scientific Cultural Organization, UNESCO
Strasbourg: Council of Europe, 1997, 17 p.
(DECS-HE, 97/3)
Availability: Council of Europe, B.P. 431 R6, F-67006 Strasbourg Cedex
EN FR

The joint Council of Europe/UNESCO convention [Lisbon Recognition Convention] lays down principles for assessment and recognition of qualifications acquired in the countries of the UNESCO-Europe Region (European continent and some non-European countries, such as Canada, Israel and the USA). Recognition comprises the recognition of qualifications earned through higher education, of qualifications giving access to higher education and, also, recognition of periods of study. Countries who will sign this convention are obliged to adhere to the outlined principles.

Education and equity in OECD countries.
Organisation for Economic Co-operation and Development, OECD
Paris: OECD, 1997, 131 p.
ISBN 92-64-15478-7, en
Availability: OECD, 2 rue André Pascal, 75775 Paris Cedex 16
EN FR

This publication provides a broad review of education and equity in OECD countries, placing the challenges and policy orientations in their social and economic context and delineates key policy principles. It is divided into three parts. Part one deals with economic, social, and educational developments. Part two examines patterns of access and participation in education and training systems, and the policy questions and approaches to which these give rise. Part three draws together the main implications in a policy orientation statement based on the patterns, arguments, and conclusions.

Education at a glance: OECD indicators 1997.
Centre for Educational Research and Innovation, CERI; Organisation for Economic Co-operation and Development, OECD;
Paris: OECD, 1997, 415 p.
ISBN 92-64-15622-4, en
Availability: OECD, Head of publications, 2, rue André-Pascal, F-75775 Paris cedex 16
EN FR DE

The OECD education indicators provide an insight into the comparative functioning of education systems- reflecting both on the resources invested as well as on the returns. The 41 indicators can assist policy-makers in evaluating student and school performance, monitoring the functioning of education systems, and planning and managing resources and educational services. Directly and indirectly they can influence the process of policy formation and contribute to the public accountability of education systems. Education policy analysis 1997 accompanies this edition

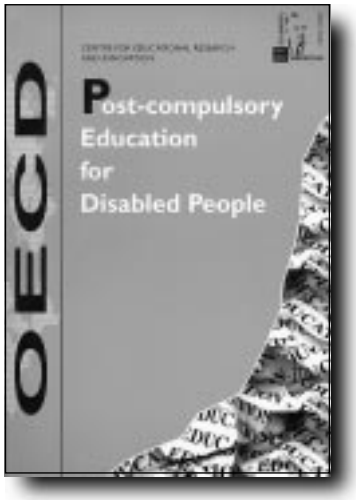
Literacy skills for the knowledge society: further results from the international adult literacy survey.
Organisation for Economic Co-operation and Development, OECD; Human Resources Development Canada
Paris: OECD, 1997, 195 p.
ISBN 92-64-15624-0, en
Availability:
OECD Head of Publications Service,
2 rue André-Pascal, 7
5775 Paris Cedex 16
EN FR

There are significant differences among Member countries in how literacy skills are distributed in the population. In some, performance is skewed towards exceptional achievement among a minority in the work force; in others, skills are more evenly distributed, with less people on the lowest level. Differences in the skill profiles of nations have implications for continued economic prosperity, democracy and social cohesion because jobs in knowledge societies require high levels of skills. Improving the literacy skills of a large number of adults is a high priority everywhere, but how can this be done? This report suggests that active and daily practice at work and at home is the key. Employers in particular have a large role to play, because of the importance of the work environment to much adult learning.

Manual for better training statistics : conceptual, measurement and survey issues.
Organisation for Economic Co-operation and Development, OECD
Paris: OECD, 1997, 275 p.
ISBN 92-64-15566-X, en
Availability: OECD, 2 rue André Pascal, 75775 Paris Cedex 16
EN FR

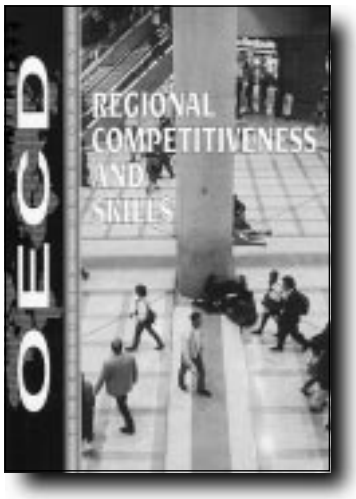
The stock and accumulation of a country's or firm's human capital is widely considered one key to economic performance. But, unlike investments in formal education, the best ways to collect, measure and cost the skills acquired through post-schooling training remain uncertain. This manual addresses these issues. It has been prepared to help improve the availability, transparency, accuracy, and reliability of information on training - particularly that linked to the enterprise - and its impacts. The manual should prove of use to all those interested in furthering their understanding of the issues, especially so for national statistical agencies who are responsible for undertaking training surveys.

Post-compulsory education for disabled people.
Organisation for Economic Co-operation and Development, OECD
Paris: OECD, 1997, 88 p.
ISBN 92-64-15601-1, en
Availability: OECD Head of Publications Service, 2 rue Andre-Pascal, 75775 Paris Cedex 16
EN FR



Post compulsory education and training is now essential for employment in all but the lowest paying jobs. This conclusion applies as much to disabled people as it does to the non-disabled, and countries are now recognizing the need to extend the current provision to meet the needs of disabled students. This development is of particular importance since disabled people are proportionally under-represented in post-compulsory education and in employment. Recent developments in both policy and practice in this field are described in this book based on reports provided by 12 countries: Australia, Canada, Finland, France, Iceland, Ireland, Italy, the Netherlands, Norway, Spain, Sweden, and the United Kingdom.

Regional competitiveness and skills.
Organisation for Economic Co-operation and Development, OECD
Paris: OECD, 1997, 207 p.
ISBN 92-64-15684-4, en
Availability:
OECD Head of Publications Service,
2 rue Andre-Pascal,
75775 Paris Cedex 16
EN FR



Human resources, training, qualifications and skills play an essential part in the development of regional economies. The notion of "learning" regions which has now become self-evident has yet to be translated into practice: but under which conditions and what are the priorities? Regional policies are increasingly focus-

ing on human resources and their orientation towards market demand and improvement of partnerships. The great diversity of regional approaches to human resource development in industrialised countries shows that an efficient regional governance, coupled with concern for equity, can reinforce and consolidate national policies. This volume casts a new light on these issues, providing a useful source of information and inspiration for regional actors and their national partners.

Technical and vocational education in Azerbaijan.
International Project on Technical and Vocational education, UNESCO, UNEVOC
Berlin: UNEVOC, 1997, 14 p.
Availability: UNEVOC,
Fehrbelliner Platz 3,
D-10707 Berlin,
email: uhber@unesco.org
EN

This study is the first comprehensive document on technical and vocational education in Azerbaijan that has become available in a Western European language. It describes the institutional structure of technical and vocational education in Azerbaijan, its problems related to the situation of the labour market and to forced migration, and ends with recommendations regarding further international cooperation.

La mise en place de formations initiales en alternance : enjeux, problèmes et solutions.
GREFFE X
International Institute for Educational Planning, IIEP
Paris: International Institute for Educational Planning, 1997, 85 p.
(IIEP research and studies programme)
Availability: IIEP,
7-9 rue Eugène-Delacroix,
75116 Paris
FR

Firstly, the objectives of alternating training (or alternance) and its different forms are discussed. Secondly, the alternating training systems of some developed countries are presented (Germany, France, United Kingdom, Denmark, Spain, Switzerland, United States, Canada) and their results and efficiency are assessed. Finally, the author presents possibilities for further development and improvement of alternating training.

Evaluation et certification des compétences et qualifications professionnelles.
BERTRAND O
International Institute for Educational Planning, IIEP
Paris: International Institute for Educational Planning, 1997, 128 p.
(IIEP research and studies programme)
Availability: IIEP,
7-9 Rue Eugène-Delacroix,
F-75116 Paris
FR

This study has been prepared within the context of the project on new tendencies in technical and vocational training. In the first part, the author discusses the problems related to the evaluation and certification of individual skills and experiences and of occupational qualifications. He highlights the aspect of educational planning and management of training. In the second part, three typical certification systems of industrialized countries (France, Portugal, Germany, United Kingdom, Australia, New Zealand and USA) are presented and compared. The extent to which regulation of training and certification is State governed or left to market forces is the criterion for all three certification models. In the third part, the author discusses different certification systems and their problems in the former communist and developing countries. In part four, the different approaches to certification, as well as their advantages and shortcomings are compared.

Instruments, tools and policies to anticipate the effects of industrial change on employment and vocational qualifications: European report, study for the European Commission DG V.
FEIJEN T; REUBSAET T;
VAN OOTEGEM L
Institut voor Toegepaste Sociale wetenschappen, ITS; Hoger Instituut voor de Arbeid, HIVA
Nijmegen: ITS, 1996, vii, 160 p.
Availability: ITS,

P.O. Box 9048, NL-6500 KJ/Nijmegen
EN

This report summarises the findings of a study commissioned by the European Commission on how shifts in employment and vocational qualifications are anticipated in 12 EU Member States. These shifts result from developments in markets, technology, organisational structures, and regulations. The anticipatory structures, methods and practices both at national and at company level are examined. After the forecasting aspect, the action aspect is also reviewed, namely the adaptation of training programmes - initial vocational training and continuing vocational training -, the role of vocational guidance, the role of employment agencies and, the role of decision makers at sectoral level. At company level, the impact of industrial change has repercussions on training policy and recruitment policy.

Convergence and fragmentation? : vocational training within the EU.
SCOTT P F; KELLEHER M ((ed))
European Journal of Education (Paris) 31 (4), 1996, p. 463-482
ISSN: 0141-8211
Availability:
Carfax Publishing Company,
P.O. Box 25, Abingdon,
UK-Oxfordshire OX14 3UE
EN

Vocational training has historically been one of the spheres in which national subsidiarity is to the forefront. This article presents the results of a 16-nation survey and indicates that certain overlapping sets of pressures are now developing among EU countries, although some of these are mutually exclusive. Equally, there are certain common policy and structural impetuses, but the nature of these provide no greater reassurance that any process is occurring which we could genuinely characterise as convergence.

Education and work in Great Britain, Germany and Italy.
JOBERT A; MARRY C
London: Routledge, 1997, 320 p.
ISBN 0-4151-5333-6;
EN

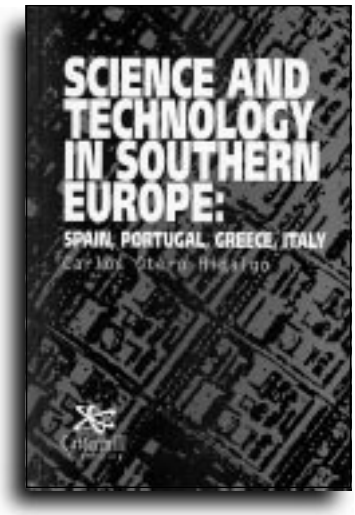
This volume examines the multiple connections between education, broadly defined, and work, through an analysis of the literature on the transition from school to work, on vocational training and on the labour market

International student mobility : The Nordic experience.
NYBORG P
European Journal of Education (Amsterdam) 31(2), 1996, p. 193-203
ISSN: 0078-7787;
Availability:
Carfax Publishing,
P.O: Box 25,
Abingdon,
Oxon OX14 1RW
EN

Patterns in college student mobility between Denmark, Finland, Iceland, Norway and Sweden are examined, with attention given to challenges posed by having three of these countries within the European Union and two outside it. The role of several formal agreements is discussed, and implications for policy needs concerning interinstitutional and/or international cooperation are considered.

'You're never too old to learn!': third-age perspectives on lifelong learning.
WILLIAMSON A
International Journal of Lifelong Education (London) 16(3), 1997, p. 173-184
ISSN 0260-1370
Availability:
1, Gunpowder Square,
London EC4A 3DE, UK
EN

The demographics of an ageing society have posed new educational challenges which, the article argues, can be best met through bringing Third-Age perspectives to bear on lifelong learning. A review of current definitions of lifelong learning reveals minimal recognition of the Third-Age. It concludes that age-integrated rather than age-segregated educational programmes ought to be the basis of lifelong learning. Such programmes might better prepare people at all stages in the human life span for their responsibilities.



Science and Technology in Southern Europe: Spain, Portugal, Greece and Italy.
OTERO HIDALGO C
London: Cartermill, 1997, 308 p.
ISBN 1-86067-185-3, en
EN

In the last decade, the countries of southern Europe have profited from their highly active national R&D policies in addition to the R&D Framework and other programmes of the European Union. This has enabled rapid growth in R&D related indicators and an important evolution of the science and technology systems in these countries. This book presents the S&T systems of Spain, Portugal, Greece and Italy in detail and answers such questions as: the legal framework of the institutions responsible for laying down scientific policy; national research plans; the role of the university and private enterprise in research; innovation and technological development; research programmes promoted by public institutions; main public research centres; the weight of a nation's research in the international context and dissemination of the results of scientific production.

Where can one get training with multimedia in Europe?
Institut National de l'Audiovisuel, INA
Bry-sur-Marne: INA, 1997, 176p.
ISBN 2-86938-136-0
http://www.ina.fr/INA/Media/guide.fr.html
EN FR NL

This monograph, produced with the assistance of the European Community as part of the MEDIA programme provides a survey of multimedia training courses available in the various Member States. Information given includes the training body, starting level, software and hardware used, course duration, price and the certificate or qualification to be gained.

Vocational education and training today: challenges and responses.
PSACHAROPOULOS G
Journal of Vocational Education and Training (Wallingford, Oxfordshire) 49(3), 1997, p. 385-394 ISSN: 1363-6820;
EN

Vocational education and training (VET) continues to be a favoured instrument of social engineering for achieving a series of objectives, such as accelerating economic growth, reducing youth unemployment and benefiting from economic globalisation. This in spite of a great deal of scepticism regarding its effectiveness. The article examines the arguments underpinning the great hope on VET as a panacea for many social ills, and offers a series of alternative or complementary actions that would make VET more relevant to the world of work and increase its effectiveness. Many of such actions lie outside the sphere of traditional VET provision, pertaining to the macro-economic environment, the general demand for labour and, paradoxically, to general (rather than specialized) education and training.

Policies, programmes, participants

Final evaluation of the FORCE programme.
European Commission;
Luxembourg: EUR-OP, 1997, 288 p.
ISBN 92-828-1391-6, en
Availability: EUR-OP, L-2985 Luxembourg or from its national sales agents
EN

The final evaluation of the FORCE Programme for Continuing Vocational Training (CVT) was undertaken in 1995/6 by a consortium led by the Tavistock Institute (UK) with two 'lead' partners, Bernard Brunhes Consultants (FR) and the Danish Technological Institute (DK) together with a network of national correspondents. This evaluation, unlike the Interim Evaluation undertaken by a largely similar consortium in 1993/94, was intended to concentrate on programme results and impacts. It did not, therefore, emphasise project election, management, and implementation which are covered in the Interim Evaluation Report. This evaluation also concentrated on the latter stages of the programme not covered in the earlier evaluation, i.e. the Third Call for Projects (1993); and the FORCE/EUROSTAT CVT Survey and so-called Article 11 reports on national CVT policies and arrangements. A sum-

mary of the report is published in the European Commission's Documetns Com 97(384) final.

Leonardo da Vinci 1995 studies on vocational training in Europe: directory of publications of the COMMETT, EUROTECNET, FORCE, LINGUA, PETRA programmes.
European Commission - DG XXII
Luxembourg: EUR-OP, 1997, 246 p.
ISBN 92-826-0444-5, en
Availability: EUR-OP, L-2985 Luxembourg, or from its national sales agents
EN

This directory contains summaries of over 100 monographs published between the late 1980's and the mid 1990's in the framework of the former programmes. The purpose of the research measures in those programmes was, first, to carry out studies to promote an understanding of issues related to the specific objectives of the different programmes, and second, to contribute towards building a European tradition of policy-oriented and action-oriented research in vocational training.

Leonardo da Vinci : compendium 1996 projects.
European Commission - DG XXII
Luxembourg: EUR-OP, 1997, 928 p.
ISBN 92-828-0330-9, en
Availability: EUR-OP, L-2985 Luxembourg or from its national sales agents
EN FR DE

This compendium contains descriptions of the Leonardo da Vinci projects selected by the European Commission during the 1996 call for proposals. 793 projects were selected including 582 pilot projects, 170 placement and exchange programmes and 41 surveys and analyses from all fifteen Member States as well as from Iceland, Norway and Liechtenstein. The projects described have been listed by country, by strand and by measure within each strand.
URL: http://europa.eu.int/ en/comm/dg22/ leonardo/comp-en/homen.html
Note: The electronic address is for Compendium 1995.

Employment - Youthstart : new paths to employment for young people.
Emploi - Youthstart : de nouvelles pistes pour l'emploi des jeunes.
Beschäftigung - Youthstart : Neue Wege für die Beschäftigung von Jugendlichen.
European Commission - DG V
Luxembourg: EUR-OP, 1997, 24 p
ISBN 92-827-8198-4, en
Availability: EUR-OP, L-2985 Luxembourg, or from its national sales offices
EN FR DE

This publication is a special report focusing on the Youthstart strand of the Employment initiative, a strand that aims to tackle the problems of the exclusion of young people without qualifications from the labour market.

Meeting the challenge of change at work : ESF project examples.
European Commission - DG V
Luxembourg: EUR-OP, 1997, 123 p.
(European Social Fund)
ISBN 92-828-1389-4, en
Availability: EUR-OP, L-2985 Luxembourg, or from its national sales offices
EN FR DE

The European Social Fund (ESF) invests in people. It provides funding on a major scale for programmes which develop or regenerate people's "employability". This vital task centres on providing people with the right work skills, thereby improving their self-confidence and adaptability in the job market. Thus, based on case studies this publication gives examples of industrial change, anticipating job market trends; vocational training and skill needs; training, retraining, guidance and counselling; and improving and developing training systems.

The ERASMUS experience : major findings of the ERASMUS evaluation research report.
TEICHLER U; MAIWORM F
Wissenschaftliches Zentrum für Berufs- und Hochschulforschung der Universität Gesamthochschule Kassel
Luxembourg: EUR-OP, 1997, 209 p.
ISBN 92-828-0666-9, en
Availability: EUR-OP, L-2985 Luxembourg or from its national sales agents
EN

The main aim of ERASMUS, the European Community Action Scheme for the Mobility of University Students, was to enable a significant number of students to undertake part of their higher education courses in another European country, with formal academic recognition for the period spent abroad. The present study is concerned with its formative period, from its inception in 1987 to its integration within the more broadly-based SOCRATES programme in 1995. The issues covered are grouped into main categories, including participation, administration, finance, study abroad and activites to support it, the results of foreign study and matters affecting ECTS students (European Credit Transfer System).

Combating age barriers in employment: European research report
WALKER A.
European Foundation for the Improvement of Living and Working Conditions
Luxembourg: EUR-OP, 1997, 157 p.
ISBN 92-826-0314-7, fr
Available from: EUR-OP, L-2985 Luxembourg or in the national sales offices
EN FR NL

Governments and the social partners in Europe have begun to rethink the trend to exit from the labour market at earlier ages, and to re-evaluate the management of the ageing workforce. This report documents the rationale for changing attitudes to the older worker, and assesses initiatives, in both public and private sectors, to combat age barriers in employment. The analysis of good practice is based upon extensive interviews and detailed case studies in seven Member States of the EU. The conclusions and proposals for action are directed to all those concerned with the retention, retraining and reintegration of workers as they age.

Book of good practice: "Training young people in social competencies - some ideas".
VOCHTEN A
Vlaamse Dienst voor Arbeidsbemiddeling en Beroepsopleiding, VDAB
Brussels:VDAB, 1997, 28p.
Available from: VDAB, CPOS, Keizerslaan 11, 1000 Brussels
NL

This paper relates to NUORI, a transnational project of the Flemish Office for Employment and Vocational Training (VDAB) and the Flemish Institute for Private Enterprise (VIZO) representing input for the European EMPLOYMENT-YOUTHSTART programme. It contains useful practical information concerning training courses for young people displaying an aptitude for interpersonal relations. The author stresses inter alia cultural differences, conflict management, training in vocational skills and the ability to communicate. Useful references on the subject of interpersonal skills will be found on the current websites.

The development of secondary vocational education, supported by Phare studies.
FEDOR M; REZMUVES J (eds.)
Budapest: Ministry of Labour,
1997, 198 p.
Availability: Ministry of Labour, Nepfürdö n.21/d, 1138 Budapest, Tel: 36 1 3310991, Fax: 36 1 3120426
EN

This study is a review of the main objectives of the Phare programme implemented in Hungary. It concentrates on vocational education and on the relationship of these projects with vocational education policy in Hungary. It is divided into three parts. Part 1 looks at the system of vocational education and some issues concerning the further training of vocational teachers. Part 2 describes some studies under the Phare vocational education programmes such as curriculum development, environmental education and foreign language training. Part 3 summarises conferences and training activities.

The role of apprenticeship in enhancing employability and job creation : the significance of apprenticeship training for the labour market.
GELDERBLOM A; DE KONING J; STRONACH J
Netherland Economic Institute, NEI;
Rotterdam, 1997, 120 p.
Availability:
NEI, P.O. Box 4175, NL-3006 Rotterdam
EN

This study was carried out on behalf of the European Commission as an input for the meeting of the European Council in Amsterdam on the 17th of June 1997. It is divided into 5 parts: 1) definition of apprenticeship training and its relation with job creation; 2) types of apprenticeship training; 3) distribution over sectors and occupations; 4) labour market effects and 5) extended summary and conclusions

From the Member States

D Berichtssystem Weiterbildung VI: erste Ergebnisse der Repräsentativbefragung zur Weiterbildungssituation in den alten und neuen Bundesländern.
KUWAN H
Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie, BMBF
Bonn: Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie, 1996, 72 p.
Availability: Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie,
Heinemannstr. 2, D-53175 Bonn,
information@bmbf.bund400.de
DE

This is the report of the 6th survey on the topic of trends in continuing education and training in the Federal Republic of Germany which is conducted every three years. The subjects of the oral representative poll were between 19 and 64 years of age. The objective was to ascertain trends in continuing education and training behaviour among Germans. The topics investigated included: time spent in continuing education, factors influencing participation and the structure of informal continuing education. The results: participation in continuing education and training is increasing in Western Germany, whereas in the former GDR continuing education is decreasing, but continuing vocational training is increasing.

Vocational education and training in Germany.
COCKRILL A
Journal of Vocational Education and Training (Wallingford, Oxfordshire) 49(3), 1997, p. 337-350
ISSN: 1363-6820;
EN

This article provides a detailed and accessible account of the contemporary structure of the German system for vocational education and training and of some of the main issues and concerns causing current stresses within it. First, it outlines the so-called dual system for initial vocational training and the manner in which it is underpinned by the general education system. A number of difficulties threaten the continuation of the dual system in its present form, the most important of which are increasing pressures for the differentiation of, and for greater flexibility in, training provision, and also for restructuring of the system's costs and funding. Secondly, the article describes the much less regulated and discussed field of provision for continuing vocational training and identifies further current troubles affecting this sphere, such as imperfect knowledge and quality, access problems, and - again - the funding of such training.

E The Spanish VET system at the turn of the century : modernization and reform.
MARTINEZ CELORRIO X
Journal of European Industrial Training (Bradford) 21(6-7), 1997, p. 220-228
ISSN: 0309-0590
EN

This article places the reform of the Spanish vocational education and training (VET) system in context, identifying the salient events and deficiencies in this modernization process. The most significant reaction to the need for improving, rationalizing and modernizing the former vocational training system was the development of the National Programme for Vocational Training in 1993. After several year's negotiations, in 1992 the employ-

ers' associations and trade unions signed the National Agreement on Continuing Training which has given a notable impulse to this type of training in the last four years. It has been the first opportunity to set up a regulatory framework for the allocation of public funds to promote open access to continuing training for the employed populations. In 1996 the second plan was agreed, shoring up a sectoral model organized through collective agreements which aims to enrich the Spanish industrial relation model.

F **Work-based training - a project to be constructed**
MAUBANT P
Pour (Paris) 154, 1997, 181p.
ISBN 0245-9442
FR

What are the issues and talking points concerning work-based (alternating on-the-job/off-the-job) training in France? What are the specific teaching problems involved? Does alternating theory and practice help to improve the learning process? How can one define and produce a new design for work-based training? What are the competences resulting from this type of training and how are they generated? How do people trained by this method rank in terms of employability? What is the position and what are the issues for tutors, trainers and the firm? What forms of work-based training should be developed to ensure that they generate the type of skills needed? What theories and methods of teaching need to be evolved to ensure optimum training results? This issue of the periodical includes contributions from those involved with these problems in research and practice.

A brief outline of the practical design of certificates of qualification
CHARRAUD A-M
Centre d'études et de recherches sur les qualifications, CEREQ
Marseilles: CEREQ, 1997, no page numbering
Available from:
CEREQ,
13 Place de la Joliette,
F-13 000 Marseilles

This paper reviews the role of the *Commissions professionnelles consultatives* in the designing of vocational qualifications under the French education system. It then surveys the tasks of the *Commission technique d'homologation* (CTH) and the *Certificats de Qualification professionnelle* (CQP) of the commissions paritaires nationales de l'emploi (CPNE) - the joint national employment committees. It explains the function of the various certificates for classification purposes and provides references to the regulations concerned with the different points dealt with.

FIN **Finnish Education in Focus.**
National Board of Education, NBE;
Helsinki: NBE, 1997, 58 p.
ISBN 951-719-996-1, en
Availability:
National Board of Education,
P.O.Box 380,
FIN-00531 Helsinki, Finland
FI EN SV

Finnish Education in Focus 1997 provides statistical overview of education in Finland. Compiled by the National Board of Education, the report is intended for experts who need up-to date statistics on education. It provides information on educational institutions, students, the financing of education, the population and research activities. Most of the data is based on statistics for 1993 and 1995.

GR **The development of vocational education policy in Greece.**
PATINIOTIS N; STAVROULAKIS D
Journal of European Industrial Training (Bradford) 21(6-7), 1997, p. 192-202
ISSN: 0309-0590
EN

Vocational education in Greece has been developed only recently, mainly through foreign influences. Delay is largely attributed to idiomorphic employment patterns, favouring low-skilled labour, and to culture, prompting youths to university education. Traditional lack of continuity of the national education policy, as well as persistent low financing of vocational education by the state, has

resulted in the accumulation of long-standing problems. This situation has added up to a sluggish vocational education organization, more or less incapable of effectively tackling crucial social issues like unemployment and the challenge of new technologies.

NL Vocational education in the Netherlands : developments in initial and continuing vocational education.
WESTERHUIS A; HENDRIKS L
Dutch Centre for the Innovation of Education and Training, CINOP
's-Hertogenbosch: CINOP, 1997, 94 p.
ISBN 90-5463-062-0, en
EN NL

This publication is the Dutch report on the implementation and impact of the Leonardo da Vinci programme and the existing national VET system, requested in Article 10 of the Council Decision establishing the programme. To enable comparison with the systems in the other countries of the European Union, two subcategories are distinguished in the Dutch vocational education system: initial and continuing vocational education and training. A summary is given of the Dutch educational system and educational policy in general, with a focus on initial and continuing vocational education. Other subjects that are addressed include: the role of the social partners in the planning and implementation of educational legislation, the costs associated with vocational education, the different organizations and institutes that provide vocational education and the entry requirements and numbers of participants in the different types of vocational education.

UK GNVQs 1993-97 a national survey report: the evolution of GNVQs : enrolment and delivery patterns and their policy implications.
Further Education Development Agency, FEDA
Bristol : Taylor Brothers Bristol,
1997, 140 p.
ISBN 1-85338-446-1
EN

This document is the final report of a major research project supported by the Further Education Development Agency and The Nuffield Foundation. The project's purpose has been to examine how GNVQs (General National Vocational Qualifications) are evolving, and how far their development is in line with the objectives originally set out for them by the government. It covers the period 1993-1997, and provides extensive national and longitudinal data relating to Intermediate and Intermediate and Advanced GNVQs.

Skill needs in Britain 1997
Department for Education and Employment, DfEE
London: IFF Research, 1997, unpaged.
ISBN 0951-6802-77

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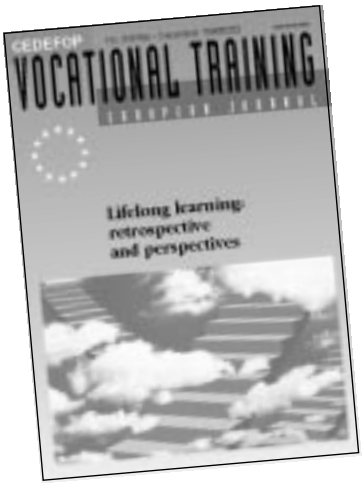

No. 8-9/96 Lifelong learning: retrospective and perspectives (double issue)

The advance of an idea
- Towards a policy of lifelong learning (Edith Cresson)
- Initial and continuing training in Portugal: Present situation and future outlook. Interview with Eduardo Marçal Grilo, Minister of Education
- Lifelong-learning in retrospect (Denis Kallen)
- A discussion of the paradigms of the White Paper on education and training: a contribution to the debate (Alain d'Iribarne)

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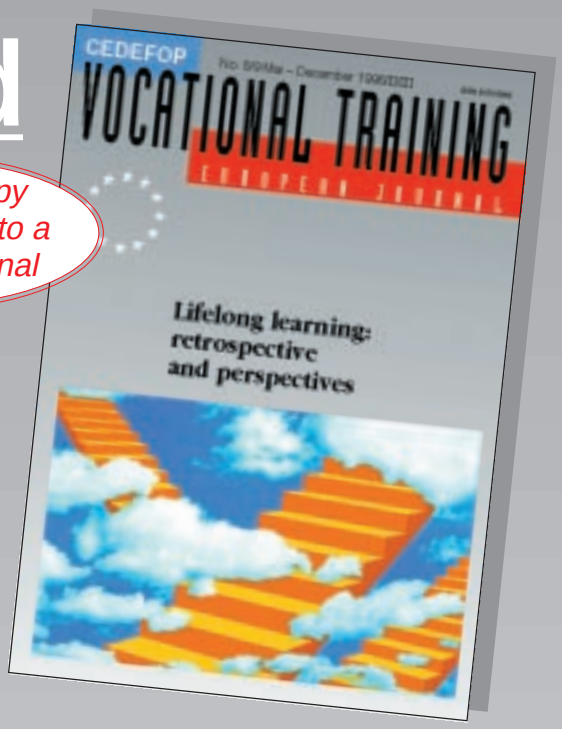

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