

Nr. 31 January – April 2004/1

ISSN 0378-5068

VOCATIONAL

E u r o p e a n J o u r n a l

TRAINING





**Cedefop
European Centre
for the Development
of Vocational Training**

**Europe 123
GR-570 01 THESSALONIKI
(Pylea)**

**Postal address:
PO Box 22427**

GR-551 02 THESSALONIKI

Tel. (30) 23 10 49 01 11

Fax (30) 23 10 49 00 99

**E-mail:
info@cedefop.eu.int**

Homepage:

www.cedefop.eu.int

Interactive website:

www.trainingvillage.gr

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Johan van Rens, Director

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No de catalogue: TI-AA-04-031-EN-C

Printed in Belgium, 2004

Responsible for translation:

David Crabbe

The publication appears three times a year in Spanish, German, English, French and Portuguese.

Layout: Zühlke Scholz & Partner GmbH, Berlin

A Portuguese version is also published by and is available directly from

Cover: Panos Haramoglou, M. Diamantidi S.A.
Graphic Arts, Thessaloniki

Technical production on DTP: M. Diamantidi S.A.
Graphic Arts, Thessaloniki

The contributions were received in or before March 2004.

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Training as a strategy in value-creation processes



Tahir M. Nisar
Lecturer at the School of Management,
University of Southampton

Workplace arrangements are changing not only with respect to the nature and content of jobs but also in the way organisations use and deploy employee skills. This has resulted in workplaces planning and implementing specific training strategies to augment the skill level of their workforce. However, any training strategy has multi-faceted objectives, and firms adopt training programmes in line with their own particular needs and priorities. What, then, are the factors which make a training programme a success? The issue has assumed great importance owing to the recognition of learning opportunities closely related to work environments and many national training schemes failing in their objective of effectively using the workplace for training purposes.

A startling finding of one recent empirical study, on national training schemes for the long-term unemployed in the United Kingdom, was that such programmes actually reflected and reinforced the processes that lead towards unemployment (Wilkinson, 2001). The study did not question the effectiveness of training as such, but highlighted the difficulties involved in adopting an appropriate framework for the method and application of training strategies. It is worth noting that workplaces in different sectors of the economy routinely make substantial investment in training activity. Many national training programmes also rely on firms to commit themselves to training as part of a policy package, designed to tackle the problem of unemployment, as well as increasing the skill nature of the workforce (Cohen, 2003).

Training and value-added activities

Several factors have been considered relevant for this enhanced role of firms in providing training opportunities. Rapid technological changes, and the wide application of skill-driven productive systems in industrialised countries, including the European Union (EU) Member States, have played

an important role. In particular, high-performance workplaces emphasise flexible rather than narrow job designs, self-managing teams and innovation and problem-solving skills. The realisation of such high-performance productivity outcomes are however critically dependent on employee skills and knowledge. This also suggests that training is only one factor in a myriad of relationships that increase the effectiveness of learning environments.

However, a large amount of anecdotal evidence suggests that for training to be useful, it needs to be carried out in conjunction with measures which augment the effectiveness of training. For instance, multi-skill training will be of little use for improving productivity if work tasks are divided and assigned in small segments; it will auger well if connected with work-related experience. For both these measures to improve the organisation of production, some participation in shop-floor decision-making will be needed. Thus, one measure is more valuable when other complementary variables are also put in place; conversely, less than optimal outcomes may result if various elements of an intervention programme are not well-coordinated (Ichniowski and Shaw, 2003).

Training should thus be seen as part of a value-creation process. A focus on value helps delineate the factors responsible for a successful training programme. Value is derived when different parts of the programme draw on an existing set of capabilities and their interactions are driven by complementarity. Value based strategies are also about tradeoffs; choices from a set of alternatives need to be made to put in place a well-coordinated programme (Porter, 1996). By thinking in terms of tradeoffs, we are able to choose the most relevant capability set necessary for exploiting complementarities between interacting variables. After all, training policies and programmes do not operate within a vacuum. Training requirements are not the same in all jobs, and dif-

Organisations devise training programmes to ensure that employees make an effective contribution to enterprise success. Not all organisations are likely to provide training, however, because there are significant trade-offs involved in terms of both costs and benefits. This article discusses the organisational determinants of training: larger establishments with complementary technological systems, well established internal labour markets and organisations which employ an educated workforce are more likely to adopt a well-defined training strategy. Public policy may also influence micro-institutions of learning and development. The influence of many such factors underlines the need for a value-based analysis to help organisations make optimal decisions about the choice of training.



ferent functional areas have very different job structures. Moreover, broad-brush training strategies are less prone to systematic inquiry into finding the optimal match between the training needs of employees, and how best these needs can be met.

Determinants of training strategy

Much existing theoretical work on training has concentrated on analysing individual choices in making an investment in improving work-related skills. This analysis has generally been couched in terms of how human capital is formed and developed over a period of time. The analysis rarely makes a distinction between the choices of individuals and firms. It is simply assumed that firms will make an investment only in specific types of training which are relevant to their operations, and thus easily recoupable (Becker, 1993). Individuals, on the other hand, will be more interested in making an investment in general types of educational qualifications, which will enhance their bargaining power vis-à-vis firms. We focus here on the determinants of training at the workplace level, reflecting the important role that workplaces now play in creating learning opportunities. Although we make a distinction between employee, organisational and institutional level analyses for delineating the role of training in the value creation process, our primary concern is with determining the ability of workplaces to make optimal training choices.

Employee-level factors

A general empirical observation is that educated workers are more likely to receive training than their relatively less educated counterparts (Lillard and Tan, 1992; Bishop, 1997). It is argued that since educated workers are more likely to benefit from increased training, it is likely that they will get more training. To put this observation in its right economic context, we need to consider the current climate of employment and wage practices.

The last two decades have seen major changes in the demand for skilled workers in European countries. There are three discernible trends, the first of which is the growth in non-manual wages and employment relative to manual workers. This is accompanied by the position of the unskilled relative to the skilled becoming

worse. Using data from the UK Workplace Industrial Relations Survey (WIRS), Chennells and Van Reenen (1997) show that the skill premium has risen since early 1980s. At the same time, the decline in employment among manual workers has been disproportionately concentrated among unskilled workers. Finally, there is the evidence of widening wage inequality within skill categories (including the unskilled) (see Gosling et al., 1994).

Since the number of educated workers in the labour force has increased overall, it should have normally driven down wage differentials. This is obviously not what has happened (Griliches, 1996). It has then been argued that education has become more valuable in periods of rapid technological change; that it takes more education to cope with the constraints imposed by new production systems. This has led many authors to conclude that technology and human capital are relative complements (Kremer and Maskin, 1996; Acemoglu, 1998). Thus, technological innovations always serve to create demands for educated and skilled workers. It is in this sense that a value-based training strategy should target educated workers because they are more likely to benefit from technological advances in production.

Capital skill complementarity also implies that increases in wage inequality will be accompanied by growing segregation of workers by skill. That is, over time, it will become difficult for high- and low-skilled workers to find work in the same workplace. Under these conditions, the economic contribution of archetypical firms such as General Motors, which use both high- and low-skilled workers, has declined relative to firms like Microsoft and Intel, whose workforce are much more homogenous (Kremer and Maskin, 1996). In such an environment, it becomes important that training is targeted at all those employees who are dealing with a related set of tasks, rather than at a select few. Since the skill content of a job complements the expertise of others working on the same set of operations, an all-encompassing training approach will be needed to upgrade organisational capabilities.

Similarly, long-term workers benefit more from their training because they have more time available at their disposal to learn and employ their skills. It is then appropri-



ate that training is provided to those employees who are with the organisation for a long period of time. Although short-term contract workers have sometimes important contributions to make to the life of the organisation, the mere fact that the skills employed by workplaces are homogenous means that it makes more sense to target workers who have long-term commitments to the organisation.

Gender can also play an important role in the firm's decision about who gets training. It is generally accepted that women are more likely to develop their career with the firm that they have started their work with, thus paving the way for long-term career plans. It thus becomes optimal to provide training to women, especially those whose tasks match the work of other employees (Booth and Arulampalam, 1997).

Training is often provided to those who are in middle or high-ranking positions, especially training unrelated to induction programmes. When training is related to new technologies, or when new organisational systems are being introduced, it is more likely that middle-ranking managers will be selected for training. This is likely to happen because of the coordinative nature of the jobs middle-ranking managers often do. They can feed information to their seniors about the potential benefits of new systems, while at the same time organising training required for the lower-level staff. Their net contribution to the value-creation process is enhanced when they undergo training related to the new organisational activities.

Organisational-level factors

In many industrial sectors, different firms hire different quality workers. The catering industry can be cited as a relevant example in that restaurants come in a range of quality levels. McDonald's will not hire famous chefs, and Maxim's will not hire teenage waiters. Systematic differences in product quality, associated with differences in employee skills, are a plausible explanation of why different types of restaurants employ workers with different levels of skill. Similarly, one finds a positive correlation among the wages of workers in different occupations within a firm (Abowd et al, 1999). Secretaries working for investment banks earn more than their counterparts in retail banks. This happens because the secretary's wage

in an investment bank correlates with the investment manager's.

This suggests that workers of different skill-levels are imperfect substitutes, and that output is more sensitive to skill in some tasks than in others. As a result, firms tend to specialise in one skill level or the other, rather than employing workers with all skill types. This then creates the incentives for the segregation of workers in different sets of workplaces, as the complementarity between the tasks promotes self- (i.e. assortative) matching (consider, for example, the case of Microsoft). New information technology has spurred the move to complementarity of tasks. Strategies such as flat hierarchies, restructuring, horizontal networking and team-building have been designed to respond to these changes. This has important implications for training strategies.

Training needs to cater for the requirements of a workplace, in order to specialise in a complementary set of skills (e.g. mastering several related skills such as various systems of information technology) will enhance the ability of an employee to perform a particular task more efficiently. Greater benefit will also accrue if training enhances the ability of employees to interpret information (i.e. the development of intellectual skills) relating to a particular set of tasks. This will facilitate their learning of multi-task skills. Further, the development and effective use of multi-level skills would require complementary human resource management strategies such as employee participation, team operation and employee involvement in decision-making. It is because of these effects that measures such as flatter hierarchies, decentralised supplier operations, and information sharing have become common practice.

Intra-firm learning in teams and work groups would also follow from organisational change, especially when skill-intensive operations are involved. The focus then would be to provide training in areas such as quality, product development and flexibility, often in combination with broad-based technological skills. In skill-intensive organisations, such as flexible manufacturing systems, line managers are assigned a higher degree of responsibility for developing human capital. Managing human resources is no longer seen as an exclusive domain of the human resources department. Human resource issues, in a decentralised environment such



as that relating to skill-intensive operations, are then essentially the key tasks of line managers. The multi-skilling nature of jobs is another characteristic feature of these environments. The assumption is that multi-skilling is found to a higher extent in skill-intensive organisations, than in low-skill organisational categories. Jobs not only become flexible and more skill intensive for managers, but also for lower-level employees. As a consequence, training is not best managed by centrally structured units, but caters to, and draws heavily on, feedback from line managers and workers.

A number of empirical studies show that establishment size is an important determinant of training incidence (Acemoglu and Pischke, 1999). This is understandable because it is more likely that larger establishments are engaged in several technologically-intensive operations. Thus, they will need to provide training to workers who are engaged in all these operations. Small workplaces that are part of a chain of larger establishments will also provide greater training opportunities to their workers than in individual smaller establishments.

Another possible reason is that larger establishments employ a wide range of occupations and are more likely to experience one or more of the occupations characterised by skill shortages. Some occupations are in short supply, and the establishments employing them can be expected to report higher training incidence. Occupations such as managers and administrators, professional occupations, craft and skilled manual workers, associate professional, sales occupations, and plant and machine operatives are often targeted for training. This is because these occupations are likely to experience shortages at one stage or another.

The type of establishment also affects the degree to which training can contribute to value creation. Hospitals and health establishments have one of the highest probabilities of experiencing a shortage of skilled employees. Also significant are hotels, catering and entertainment establishments. This is partly due to the fact that technologically-intensive operations require more training as opposed to those with less demanding technical needs.

Single location establishment types often emerge as being significantly higher recip-

ients of training. This is because establishments with multi-locational links are able to transfer individuals with key skills and expertise between locations. The intensity of training incidences may also vary among different industrial sectors. Sectors such as agriculture, metal goods (including engineering), construction, mineral products and transport are more likely to suffer from a shortage of skilled employees, and thus the need for training is observed in these particular areas.

Other organisational factors may also be responsible for determining the outcome of training. Organisations with established internal labour markets are more likely to provide training to their staff because vacancies are often filled from within. The industrial relations system may also influence training investments. Unions tend to promote measures which act to stabilise employment and so may strengthen incentives to provide training. Several other explanations can also be offered to explain the link between union and training incidence. Unions may be a conduit for an equitable provision of training opportunities. In addition, the propensity of employees working for a firm providing training increases with stronger links with trade unions. Whatever the case, there are indications that there is a positive relationship between trade unions and the incidence of training.

Institutional-level factors

It is generally understood that the collective good features of training increase the probability of training incidence in situations in which there are strong institutions, like industry consortia, intra-firm cooperation and government training agencies (Crouch, 1999). The institutional context of training is, therefore, often explored in determining the efficacy of training. More significantly, the way in which training is organised, financed and conducted can influence the way employee relations become an important part of internal labour markets (Arulampalam and Booth, 1998). This in turn affects institutional features such as seniority rights, compensation systems, pension-vesting rules, and legal or collectively bargained restrictions on layoffs, which provide the foundations to develop internal labour markets (or alternatively increase the cost of changing employers). Internal labour markets are a source of employment security, and thus give es-



established workers more incentive to make investment in human capital (compared with a situation where no such guarantees are available).

It is precisely because of this reason that employee tenure becomes an important indicator of the relationship between the firm and the employee's commitment to training. It is suggested that higher levels of training provided by firms translate into longer tenure for employees, an observation closely linked to the 'voice' concept of Hirshman (1970). A caveat is to be made here. Tenure is also positively associated with work design, compensation systems, career development and job rotation programmes, which may also be related to each other. There is then a need to emphasise a set of complementary practices which link a value-based training programme with other related organisational practices.

At a broader level, education and training programmes should allow different stakeholders to share the costs and benefits more equitably. Individuals, industry, community, government and other learning stakeholders would, ideally, assume responsibility for investing in learning in accordance with the particular need of establishing a sustainable learning culture. For instance, wider interest in developing a learning culture led Denmark to pioneer a learner-centred approach to vocational education and training (the National action plan for employment in Denmark has been instrumental in reducing unemployment between 1992 and 2000 by almost half). Similarly, to make vocational higher education more flexible, the Netherlands recently introduced a system of vouchers. This permits students embarking on a particular programme of courses in higher education to receive a certain number of 'right to learn' vouchers exchangeable at higher education institutions. Individual learning accounts have been introduced by Austria and the United Kingdom to enable hitherto underrepresented groups of workers, such as those with low incomes and little education, to access lifelong learning opportunities.

Social dialogue and participation have also spurred the growth of new institutions, particularly in areas such as employment and human resources development. Government and employers' and workers' organisations are engaged in a continuous process of eval-

uating and reforming their education and training systems. Lifelong learning for work is central to these reforms. Many countries, including Ireland, the United Kingdom, the Netherlands and the Nordic countries are introducing their own institutional models for competence standards and mechanisms for recognising and certifying skills (e.g. NVQs in the UK, AQTF in Australia, etc).

Lifelong learning and training strategies call for an integrated vision of education and training pathways. For instance, in Finland the Government's development plan for the 1999-04 period looks to help more young people apply for vocational education and complete their studies. The plan also envisages expanding opportunities for adults to pursue studies that improve their employability and capacity for further learning.

Such an approach permits training objectives and strategies to be formulated at various levels (national, enterprise, training institution, individual, etc). At the national level, human resource development and training objectives are generally aimed at ensuring that their training policies and systems better meet contemporary economic and social needs. For instance, Ireland was the first EU country to set specific targets for poverty reduction. Its human resource development objectives clearly identify poverty reduction and social inclusion of disadvantaged groups, including women, as explicit objectives.

At enterprise level, specific strategies can be formulated to encourage investment in employees' human capital. Because work-related training contributes to improved productivity in the economy, reduces skill mismatches in the labour market, and promotes a country's international competitiveness, special emphasis needs to be placed on providing work-related training opportunities. A comparison of the apprenticeship systems in England and Germany found lower coverage and qualification and completion rates in England, contributing to inadequate skill supplies reflected in the country's poorer productivity and trade performance (Ryan and Unwin, 2000). These considerations prompted the UK Government to introduce the work-based Investors in People training programme.

There has also been a shift away from state-controlled, centralised and supply driven de-



Table 1

Training approaches and their outcomes				
Training approaches	Strategy	Principles of organisational design	Examples	Training delivery
Stand-alone training policy	Broad-brush choice of training instruments	Design and management of capabilities through planning and control	Delivery of services in separate areas (training for project planning)	'Packaged' training
Value-based approach	Making trade-offs from a set of alternatives	Coordination of value-maximising complementary resources (i.e. technical and human)	Multi-skill training (training for project planning and implementation)	Continuous training as part of human resource development strategy

livery of training towards a diversified, flexible system of public and private institutions and enterprise-based supply. The goal is to make training supply respond better to economic and social needs and make it more flexible in the face of rapid demand shifts. Cutting training costs and encouraging competition between training providers is another concern. Quality assurance from private industry is also considered vital in improving the public infrastructure (e.g. vocational schools, colleges, etc). For instance, Sweden opened up the market for labour market training to private providers and invited them to compete for public tenders in the 1980s. The United Kingdom and the United States commonly use quasi-markets to deliver training packages. By expanding the range of partners in training provision, including private providers, policy makers hope to widen the training choices available to labour market participants.

Training approaches

An approach to training, which relies on complementarity between technology and skills, locates the analysis of training in a wider context. It argues that economic and technological conditions have the potential to influence managers to use complementarity as a means of developing a new kind of training approach. These conditions are seen as creating new possibilities for managers to combine new technology with a skilled labour force. Managers can employ training with a new technological system in ways that create conditions for upgrading the skill level of employees and also favours the adoption of skill-intensive productive systems.

Training is seen as an integral part of a comprehensive set of policies and programmes for economic and social development. For instance, an approach to flexible lifelong learning, which is coordinated collaboratively between commercial sectors and social partners, is required to support transitions through basic education to further education and training. The policy also encourages governments to focus on education, training and development acquired in environments other than traditional forms of delivery. Workplace learning opportunities are central to these priorities.

Training becomes, within this context, an important strategy because an improvement in the abilities of employees to interpret information, make decisions and solve problems allows greater exploitation of new technology. Questions about the role played by agents such as managers and employees (regarding the training outcome associated with technological and skill change) become paramount. What role do employees play in decisions regarding the type of training made available? How do managers respond to the skill requirements of new technological innovations? Or to what extent do the existing skills bases of organisations determine the adoption of new technological systems? These questions are answered only by taking a value-based approach to training. Some of these issues are summarised in Table 1.

Conclusion

To produce a variety of quality goods, productive systems often have to encourage the bundling of a large number of tasks. The performance of these tasks then requires a



skill configuration which goes beyond the practice of specialising in one particular job (e.g. high-performance productive systems). These changes, coupled with new technological innovations, have meant that the skill content of most operations have significantly increased, resulting in the need to increase training outlays for upgrading the skill level of the firm's employees.

Because of this complementarity between skills and technology, it becomes appropriate that firms' decisions about training are treated as part of a corporate strategy. Though firms make training choices in ac-

cordance with their strategic objectives, they are also fundamentally influenced by many other constraints. These constraints are related to the firm's production function, but factors such as the existing capabilities of employees, organisational preferences for skill and knowledge and internal labour market practices, are equally important in determining the role of training in the value-creation process. Such a training approach is particularly relevant to European workplaces as discussed above. This article has pointed out important trade-offs which need to be made in order to obtain such an outcome.

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Key words

*Training needs;
cost of training;
learning;
economics of education;
work organisation;
skill development*



Vincent Troger

Senior lecturer at the University Institute of Teacher Training of Versailles, Researcher at the Pierre Naville Industrial Sociology Unit, University of Evry.



In France today most initial vocational training is delivered within the school system, in the lycées professionnels (vocational lycées) and the technological streams of general lycées. Historically this characteristic feature of the French system came about at the end of the 19th century as a result of the educational policy of the Third Republic in conjunction with the needs of the mechanical engineering and electrical engineering industries. From the 1960s on, the standing of this training system suffered as it systematically took in pupils who had failed in general secondary education. For their part, employers who originally supported the State's efforts when there was a shortage of skilled labour have sought to regain control over training in a contemporary situation where labour is plentiful and flexibility desired. The future of such training is uncertain and new forms of collaboration between enterprises and vocational and technical training establishments are gradually emerging.

Vocational training in French schools: the State/employer alliance

A feature of the system of vocational training in France today is the extent to which training is provided in State school and colleges. Two types of establishment – the lycées professionnels (vocational lycées) and the technological pathways of general lycées – account for almost half of the young people in France coming to the end of compulsory schooling: one million go on to these establishments and pathways, compared with another million going on to the general educational lycées. In contrast, relatively few youngsters of the same age – approximately 300 000 – are accepted for apprenticeship in the workplace.

The purpose of this paper is to describe the thinking that led to this system, starting at the end of the 19th century. The first part outlines the main trends in the history of vocational training since the French Revolution up to the major reforms of the 1960s. The second is a more detailed analysis of what has happened since then.

Technical and vocational education from the French Revolution to the Fifth Republic

The history leading to the contemporary organisation of vocational training for young people in France starts with the abolition of corporations – in other words, guilds – in 1791. The disappearance of this traditional setting for organising apprenticeship triggered off what was called a 'crisis of apprenticeship', one that was to last throughout the 19th century and up to the First World War. In fact the term described three different situations:

□ the decline of traditional apprenticeship in craft trades, in line with the decline of the trades themselves. This is still a topical issue today: the sectors that have preserved the traditional apprenticeship arrangement, such as the food trades, hotel and catering and part of the building industry,

still complain about the shortage of apprentices.

□ the deterioration in the working conditions of young people, and sometimes of children, who were exploited in the industries using manual labour, essentially textiles and mining.

□ the shortage of skilled labour in the more modern industries, i.e. mechanical engineering and, from the end of the 19th century, electrical engineering.

The exploitation of child labour and the shortage of skilled manpower were the focus of concern for the political and economic elites throughout the 19th century. They responded in two ways: by developing primary education to teach and protect children, and by starting up technical schools and evening classes. Up to the late 1870s, France was not very different from other leading industrial countries in this respect. Many evening courses, either private or provided by philanthropic associations, workplace schools such as those set up by the Schneider or De Wendel factories, municipal schools (Paris, Le Havre, Lyons, Nantes, etc.) and schools financed by trade organisations (Besançon), offered technical training at varied levels. International exhibitions attracted several international congresses on technical education, especially at the end of the 19th century, providing an opportunity to show how more or less similar schemes were being introduced in Germany, Great Britain, Belgium, Russia and even South America. One of the common features of those initiatives was the low level of involvement of the State and the vital role performed by private and municipal bodies (Charlot and Figeat, 1985).

But two events were to bring about a lasting change in the status of vocational training for young people in France in the last quarter of the 19th century.



The first was the arrival of the Republicans in power in 1879. To stabilise what was initially a fragile regime they put their faith in compulsory schooling, with the aim of educating French youth in the spirit and values of the Third Republic and counteracting the Catholic church's hold over elementary education. But the Republicans had a problem: how to control working class youngsters, especially boys, once they had come to the end of compulsory schooling at the age of 13 and up to the age of military service at 18, or until marriage in the case of girls. Violence among working class youth was not a new issue: from the start of the century successive governments had been concerned with the problem. They feared that the youngsters would fall prey to idleness and crime or to revolutionary ideas. Initial vocational training was thus seen as a way of maintaining order among these young people while meeting the needs of industry and trade.

This project was to provide a solution to the concerns of some of the employers, those at the head of the more modern companies. Mechanical and electrical engineering were at the height of a boom, with the development of the petrol engine and the electric motor and the consequences for road vehicles, aircraft, the navy and railways. As a result they needed skilled manpower in domains calling for new and hard-to-find skills. These sectors were also strategic, since they supplied the armed forces with equipment at a time when the first great world conflict was looming.

Part of the Republican political elite and some of the employers were to form an alliance and create what historians in the English-speaking world who have studied this question have called a lobby ⁽¹⁾. This was to work towards establishing a vocational training policy with two objectives (Pepel and Troger, 2001).

The first was the development of technical schools funded jointly by the State and by local authorities. The schools selected from among the best pupils in elementary school those whose social origins meant that they would opt for a short period of training leading straight to stable occupations. They trained highly skilled workers for industrial concerns, who then rose rapidly to become foremen or skilled technicians, the best among them acquiring the status of engineers (Legoux, 1972).

The second objective was to bring in legislation to regulate the training of blue- and white-collar workers and to ensure that those employers bearing the cost of apprenticeship would not be at a disadvantage compared to others not making the effort to train their workers. For example, a diploma attesting occupational skills, the Certificat d'Apprentissage Professionnelle (CAP), was created in 1919 (Brucy, 1998), theoretical training courses were made compulsory for apprentices, and in 1925 an apprenticeship tax ⁽²⁾ was levied on enterprises that did not train apprentices.

The first objective was successfully achieved: by the eve of the Second World War, several dozen technical schools were catering for nearly 100 000 pupils, a school population almost as large as that of the lycées. The second objective, however, was not attained at the same time. Very few apprentices enrolled for the vocational courses or sat the CAP.

It was the failure of the second objective that was to lead to the creation of a second type of vocational school, what are now called lycées professionnels, with the aim of training not technicians or foremen but shop-floor and clerical workers. During the Second World War, the Vichy Government had set up training centres to take in unemployed people from the working classes and inculcate in them a Pétainist ideology. In 1944, these centres were taken over by the new government and, with the support of the employers in the metallurgical industry, represented by a powerful employers' association, the Union des Industries Métallurgiques et Minières, they became public vocational education establishments (Pepel and Troger 2001). This time, there were two factors motivating the agreement between the State and the employers: post-war manpower shortages, since the generations now arriving in the labour market reflected the low birth rate in the first half of the century; and the need for national reconstruction after most of the country's infrastructure had been destroyed by bombing.

From this date on, there were two parallel categories of public-sector technical schools in France: one providing training for those who would go on to work as middle management in enterprises, the other training future blue- and white-collar workers.

⁽¹⁾ This lobby has been described in particular by two British historians, R. Fox and G. Weisz, in *The organization of science and technology in France, 1908-1914*, Cambridge University Press, 1980.

⁽²⁾ This tax, calculated as a proportion of each enterprise's wage bill, is still levied today and represents a not insignificant source of funding for many vocational and technical education establishments.



Up to the 1960s this system worked very well. It provided employers with shop-floor and clerical workers and with junior managerial staff who could be put to immediate use on leaving school. This meant that enterprises did not have to fund and organise the training effort themselves. The system offered students a rapid route to qualifications, at a time when post-compulsory school education was still not very well developed. A historian has called the vocational education of the time a 'lifebelt thrown to the working class'. Technical education or vocational education diplomas had little competition in the labour market from other diplomas; because of this, ordinary people held such education in high regard.

The devaluation of technical and vocational education

In 1959, General De Gaulle returned to power and embarked on a policy of modernisation in France. From the educational viewpoint, this policy was based on the assumption that there should be investment in human capital and, therefore, that the school population should be proportionately higher. From 1959 to 1975, a series of reforms pursued a twofold objective. The first was to defer the point at which individuals made their final career choice by raising the school-leaving age for all: the culmination of this objective was the comprehensive school and a school-leaving age of 16. The second was to expand scientific and technical education: the scientific baccalaureate became a highly valued secondary education diploma; there was a proliferation of engineering schools; and technical and vocational education was developed.

At first, technical and vocational courses benefited from these reforms, since they expanded to the point they have reached today, accounting for half of all lycée pupils. But very soon they also started to suffer from several side effects that were rapidly to transform them into what came to be regarded as the second-best stream of the French educational system.

The first factor was demographic. With the arrival in the labour market of the baby-boom generations at a time when few people in the older generations were reaching retirement age, it automatically became harder for young people to enter the working

world. Far more people were seeking their first jobs than there were jobs released by retirements. The slowdown in economic growth following the oil crises of 1973 and 1975 considerably aggravated the problem: the resulting unemployment, combined with the relative scarcity of jobs created by retirement, made it very difficult for young people to find work.

Simultaneously, another process more closely linked to the development of the school system was to have adverse effects on technical and vocational education. The proliferation of engineering and commercial colleges and the development of university-level technological education meant that enterprises and the administration could increasingly look to these sources for the future managerial staff and senior executives they needed. But the effectiveness of this system had a negative effect on the technical, and above all vocational, diplomas acquired in technical education, by making it increasingly difficult for skilled blue- and white-collar workers to gain access to senior jobs through internal promotion^(*). Increasingly, middle-ranking or higher-level jobs were being taken directly by graduates from the engineering and commercial colleges or the universities. When combined with the automatic effects of population trends, this process gradually created a bottleneck in internal workplace promotion, creating competition between the internal recruitment market (promotion) and the external recruitment market (the hiring of young diploma-holders). To opt for technical and vocational education meant taking the risk of being locked into lower-ranking social status for the remainder of one's life.

From the late 1970s, despite the rise in the number of people in technical and vocational education, this became the 'second-best' stream of schooling (Troger, 1996). As a result, families systematically tried to avoid the pathways that might keep their children down at a lower-level working status, and a majority rejected guidance suggesting that this direction be taken, especially vocational education. Youngsters threw themselves into the race for diplomas, with the obvious multiplying effect. The more diplomas there were, the more each individual felt that a more advanced diploma should be sought.

Because of this, the intake of vocational education schools now consisted only of pupils

(*) A law that was in effect in 1971 made it compulsory for employers to fund their employees' continuing training. But surveys have shown that it was mainly the managerial staff who benefited from such training.



who had reached school-leaving age but had failed at school, whereas the technological pathways took the pupils who, at the end of their secondary education, had not reached a high enough standard to continue their general education in the humanities, science or economics. There were only rare exceptions to this process: the courses preparing young people for careers that were still held in regard, such as the hotel and catering trades or applied arts for industry (industrial design). The situation has changed since the 1950s, when vocational education was relatively selective and took good or average-level working class pupils; today its intake consists of the group of youngsters who have encountered setbacks in their general school education.

This changing pattern of recruitment, however, has conflicted with another trend, the changes in the skills required in the labour market. Since the early 1980s, production of goods and services has been increasingly influenced by the demand for quality. The organisation of work is less determined by the material constraints of production, and increasingly by consumer demand. Commercial and marketing departments now dictate requirements to production departments, a situation that is a reversal of 30 years ago. Public-sector services, which are highly developed in France, refer less to 'users' and more to 'clients'. For shop-floor and clerical workers and for junior and middle managerial staff this means that they are expected to have new skills in addition to essential technical skills. They are required to communicate better, to adapt quickly to new situations, to master elementary computer skills, to take over responsibility for some customer relations, etc.

Because of this, technical and vocational education has been forced to bring about a minor internal revolution. It has adapted its teaching methods to these new demands at a time when the standard of their pupils has been in decline. This evolution is evident in two fields.

The first has been the development of alternance training (Aguilhon, 2001). From now on, all pupils in vocational education and some of the pupils in technical education spend part of their period of schooling in work placements, which are taken into account in awarding their diploma. This applies in particular to a diploma created in

1985, the *baccalauréat professionnel* or vocational diploma. It has helped to narrow the gap between the training delivered in technical and vocational education and apprenticeship training, since apprentices receive theoretical training as well as working in their enterprise. Serious thought is also being given to combining this training as often as possible in the same establishments, which might be called *lycées des métiers* (trade lycées).

The second area of change has been the development of thinking on the content of training, taking into account the changing requirements of employers. What are called 'job standard' documents have been drawn up together with the representatives of employers and employees' unions, defining the set of skills sought by employers in each trade (Eckert and Veneau, 2001). These 'référentiels d'emplois' are then converted into 'référentiels de formation', or 'training standard' documents, that are used as a basis for implementing teachers' educational methods. They are often criticised for being too detailed, which sometimes make them difficult to apply to the letter. However, there is no doubt that the new approach has breathed fresh life into teaching methods in technical and vocational education and to an extent has helped to bridge the gap between the standard attained by pupils and level of the skills they need to acquire.

In conclusion, I would say that technical and vocational education has today become a sort of 'safety valve' for the French educational system. It takes in over half of French youngsters who have more or less failed in comprehensive school, and its teachers have displayed imagination, determination and patience in offering them the training and additional education that will help them to obtain a diploma and enter the labour market on the best possible terms. In this, they are rendering service to the employers by relieving them of most of the cost of training.

Over the past few years, this system has been criticised partly for its cost and partly for its relative slowness in reacting to the changing demands of the labour market. Today, these criticisms are muted because technical and vocational education has achieved progress in its practices. Also, the model of apprenticeship, which has developed significantly in certain sectors in competition



with school-based training, has nonetheless reached a certain limit: most enterprises and the French Administration have not acquired a true 'training mindset', unlike what has been happening in Germany. As a result there are often problems with taking on apprentices, as there are with the placements of young people from vocational education.

This is why we now feel we should be moving towards a sort of compromise: initial vocational education and training will no doubt continue to be provided in the school for a long time to come, but its practices will tend to move closer to those of apprenticeship, without making the heavy demands on enterprises of traditional apprenticeship.

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Key words

Vocational training,
training institution,
training policy,
education system,
industry,
educational policy



From overeducation to underlearning: a survey of Swedish research on the interplay between education, work and learning

The aim of this paper is to give an overview of Swedish research on the interplay between education, work and learning ⁽¹⁾. The intention is also to bridge the gap between education research and research where the emphasis is on learning, development and change in the workplace. Our focus is on competence supply, both to and within working life and attention is given to overeducation and underlearning and the age old question of balancing supply and demand. The paper illustrates how occupations, professions and job skill requirements change or remain stable and the different obstacles and conditions that exist for workplace learning.

Overeducation, underlearning and educational inflation: an introduction

This introduction focuses on the current political demand for education expansion, the efforts being made to bridge the gap between work and education and the need for workplace learning strategies. The 'education, education, education' priority for Britain launched by Tony Blair reflects the level of importance attached to this area by politicians and policy-makers all around the world. Another seemingly united policy field covers ideas and strategies for lifelong learning, which has been promoted by the European Commission's Memorandum on lifelong learning. Finally, the Swedish and British 'half of the young generation in higher education' objective is yet another illustration of the current belief in the role of education in modern, or post-modern, societies.

The purpose of this policy of wider admission and higher enrolment levels in higher education is that half of an age group should be in higher studies at the age of 25. This so-called 'the more, the better' presumption, has been questioned in various policy fields by practitioners and in research.

It is not our intention to argue against the demand and need for education in modern societies. Our purpose is a more modest one; to discuss the conceptual foundations and the empirical evidence for various policy perspectives and institutional measures. With reference to our background as scholars in the field of human work science, we will focus on the context for knowledge utilisation at work as well as workplace learning. Furthermore, it is clear that many of these educationally expansionistic policies are developed without reference to, or deeper analysis of, the relationship between education and work or the place of qualification-utilisation in the workplace with regard to supply and demand. Paradoxically it seems that in modern labour markets, overeducation and underqualification operate on parallel, but different segments of the labour market (Green, 1999; Battu and Sloane, 2002).

The conceptual siblings overeducation and underlearning represent quite different theoretical positions and analytical orientations in social science and public policy. While overeducation and the concept of underqualification (or under-education) and qualification inflation is a matter for economists



Kenneth Abrahamsson
Adjunct professor in Human Work Sciences, Luleå University of Technology, Sweden



Lena Abrahamsson
Associated professor in Human Work Sciences, Luleå University of Technology, Sweden



Jan Johansson
Professor in Human Work Sciences, Deputy Dean at Faculty of Technology, Luleå University of Technology Sweden

Policies of educational expansion are enhanced in most European countries. Little attention is, however, paid to skill utilisation at work, learning context and gender-related barriers at work. Oversupply and under-utilisation of skilled labour might create mismatch problems and frustration at the workplace.

The aim of this article is to give an overview of Swedish research on the interplay between education, work and learning. The intention is also to bridge over the gap between education research and research with emphasis on learning, development and change at workplaces. Our focus in the paper is on competence supply to and within working life. Attention is also given to overeducation and underlearning and the classical question of balancing supply and demand. The paper illustrates how occupations, professions and job skill requirements change or are stable and also different obstacles and conditions for work place learning.

⁽¹⁾ The paper is partly based on the book "Utbildning, kompetens och arbete" (Education, competence and work) edited by Kenneth Abrahamsson, Lena Abrahamsson, Torsten Björkman, Per-Erik Ellström and Jan Johansson. The book is written in Swedish and published 2002 at Studentlitteratur, Lund, Sweden.



and sociologists, the term underlearning has a didactic and cognitive focus and a neuro-physiological connotation with roots in the history of psychology. The concept of overeducation highlights the mismatch of employees' education levels and skill requirements within a certain segment of the labour market or the match at individual level within a specific work context. The perfect match between labour supply and skill requirements at work tends to be more dream than fact.

The trust in the social, cultural and economic impact of education is often connected with a stereotyped approach implying that the impact of education is a question of counting up years of education and relating the total to wage structures for different positions in the labour market. There is, however, no direct correlation between years of education and skill levels in various knowledge fields. Some economists argue that behind or beyond the education mismatch there is a skills match under the label of 'more educated, less able' with special reference to shortages in numeric skills at work (Vignoles, 2002). Another concept that has attracted a high level of interest both in policy quarters and in scientific environments is the notion of qualification inflation, i.e. that employers tend to recruit staff with higher qualifications than are needed in a specific occupation setting. The notion of qualification or education inflation can also be seen in a supply and demand context with a falling education premium for longer periods in the economy characterised by a permanent oversupply or increasing number of employees being over-educated for their jobs.

Too much education and too little learning?

Thus, the impact of overeducation could theoretically be both positive and negative. The positive or optimistic view is that overeducation provides a more generic knowledge base that could be used to solve new problems in new situations. The negative or pessimistic view is that overeducated people tend to be less able to fulfil their job tasks than those who have the appropriate level of schooling for the job. The overeducation metaphor has also been related to the above-mentioned concept of educational inflation, i.e. the situation where employers, in times of oversupply of labour, could raise the skill

requirement far beyond that which is needed for specific jobs.

The knowledge inflation idea is difficult to test empirically, but it seems not an unreasonable presumption that overeducation and oversupply of labour might have a negative impact on wages. It seems that the concept of overeducation has a mainly negative connotation in public debate and social science. Overeducation is often related to overspending, to over-consumption and misuse of public expenditure. It is, in our view, however, a too simplified perspective. The relationship between education level, economic performance and social and cultural life is much more complex. It is, of course, also a question of the division of work, skill requirements in various sectors of the labour market and the conditions for utilising the individual's own portfolio of skills, knowledge and more tacit experience.

Underlearning, on the other hand, can be a result of both overeducation and underqualification. Underlearning in our context is not only an issue of inefficient learning at work, but also a situation in which work organisation and corporate culture is rejecting learning opportunities or supporting a negative learning climate. In our view, underlearning tends to be more common in situations of high skills demands, low level of control and influence as well as a non-supportive social setting (Karasek and Theorell, 1991). Considering the balance between overeducation and underlearning it is our belief that the dynamic interplay between education and work cannot only be solved by an increasing provision of education. More attention has to be paid to the demand structure and conditions at work which will facilitate learning, make better use of an individual employee's own skills portfolio including the idea of valorisation and recognition of prior learning.

Economists often show their admiration for the hidden hand of the market to make seemingly rational selection of human capital, while sociologists prefer to focus on discrimination, social bias and institutional filters. From a work science point of view, however, more attention is paid to work organisation and learning environments in the position under discussion. It might be that some positions are locked into a hierarchical work organisation with low level of influence, a strong gender division of work



and few options to use knowledge of a more reflective or analytic kind. In such cases, the mix between overeducation and under-learning tends to support frustration, disappointment and possibly low motivation and productivity. However our point is that the dynamics in education, work and learning are complex at both individual and structural levels.

One of the most common approaches is to discuss the relationship between education and work as an investment in human capital resulting in economic growth and development for society as well as economic and other benefits for the individual. The rhetorical question 'does education matter?' as formulated by Alison Wolf (2002) cannot, however, be answered by a simple yes or no. It is necessary to focus and condition the question and analyse which education – content- and context-bound – matters for which groups, and under what circumstances.

Another societal function of education is related to equity and social bias. The question of whether or not education or educational expansion is promoting equity and counteracting social bias is not an easy one to answer. History and much empirical evidence has supported the Matthew principle that 'for whomsoever hath, to him shall be given' [Matthew 13:12]. Educational expansion more often attracts students and learners from knowledge-supporting environments with good basic skills and efficient learning strategies than students with weak educational family tradition, low basic skills or insufficient subject knowledge. Education has a socialisation function by transporting and trading values and belief systems between social groups, generations, teachers and students.

The qualifying function, the enduring pattern of social selection and the socialisation function of education also have to be seen and analysed from a gender perspective. In Swedish education today, females outnumber males, but this new majority does not seem to have a strong influence on gender-related occupational choice, wage equity or the control of higher professional positions in the public or private sectors or at corporate board level. Some empirical evidence in Swedish studies shows that there has not been a fundamental change in skill requirements in various jobs in the Swedish

labour market; rather there has been a structural transformation with a decrease in the number of low-qualified jobs.

A different angle for the dynamic interplay between education, work and learning is to focus on the contextual and institutional setting of different learning environments by comparing school-connected learning with work-connected learning. Too often these kinds of comparisons tend to exaggerate the differences between how learning is organised and performed in schools and how learning takes place at work. A third entrance to this analytic arena is to examine education, work and learning connections from different theoretical perspectives in an interdisciplinary context.

'The higher, the better?' macro-views on education demand and supply in Sweden

In this section we discuss whether education functions as an investment for the future or as a sorting machine. Here focus is on the interplay between education structure, labour market and wages. What are the inducements for continuous learning, for moving up the education ladder? Is education really profitable for those being educated? In many cases education and competence are not used in working life. Education investment could contribute to an extensive overeducation because jobs are not changing. The work content average qualification level has not risen as much as is claimed in debate.

The discussion of future developments of education and work can be analysed with respect to different comparative perspectives. One such approach is to look at the long-term labour supply, i.e. the anticipation of skilled workers and higher educated employees in a long-term perspective. With such a demographic focus, unemployment does not seem to be the major problem for the Swedish labour market. The need to replace staff and recycle current workplace skills tends to be a bigger challenge.

Generational variations and changes in birth rate have an effect on the demand for different types of skilled labour. In the long-term, the age structure in Sweden has changed in form from a pyramid to a circle. This change is mainly due to a falling birth rate



during the twentieth century, but the reduction shows no straight line, rather a pattern of oscillation. Variations in birth rate usually have links to major changes in society such as changes in the cost of raising children, women's labour market, the state of the market and family politics and perhaps most of all the recurring baby booms at intervals of 20 to 25 years. Regardless of the reasons, these population changes do affect the labour market (Ohlsson and Brommé, 2002). Therefore knowledge of population changes and the skill history of generations is an important base for predicting competence demand in the next 10 to 12 years.

A second comparative approach is to analyse changes in the education level both in a historical perspective and from an international comparative viewpoint. The education level in Sweden has increased over the last decades. The percentage of people with a low educational level has decreased. The number of jobs requiring a low educational level has also decreased during the same period but, interestingly, the curve has flattened and is expected to rise again (Åberg, 2002). In other words the number of over-educated people will increase and this is a clear trend, not only in Sweden but also in other Western countries. Many people are in work that is below their education level. The changes in educational demands in the Swedish labour market are as a result of structural changes, for example new occupations and trades, and not as a result of changes in the actual qualification content within each occupational group (Åberg, 2002). For the individual, overeducation (having a job below your education level) can be felt as negative, but from a society perspective it can be seen as a productive unused resource.

At the same time there is a trend of under-education. During the 1990s the knowledge intensity in the Swedish economy increased and many people do not have a sufficient educational level for their job (Oscarsson and Grannas, 2002). These undereducated people compensate for their lack of education with their experience. However, there is a clear picture of polarisation between those who get a better education, more development and qualified jobs than those who do not have these advantages.

The education level and skill profile of the work force is normally seen as an important aspect of economic growth and development. In an international comparison it is of high policy interest to identify the Swedish standing with respect to education levels, work place skills and further education options, as well as competence development at work (Aspgren, 2002). In comparison with other OECD-countries, a large proportion of Sweden's population has at least an upper secondary or higher education level. However, Sweden is lagging with respect to the proportion of the work force with longer higher education or degree-oriented programmes. If we look at basic skills, in contrast, Sweden was at the forefront in the IALS-study on literacy and numeracy (as assessed in middle of the last decade). This positive result could be due to the existence of better options for workplace learning and more provision of staff development programmes and in-service training, especially in the public sector in combination with more flexible forms of work. It is evident that there is a strong potential for developing the work organisation and on the job-learning options and much can be done to increase the flexibility of the formal system of education in order to enhance adult learning at work and in everyday life.

The shifting character of job skill requirements and professions

Current trends show that in some sectors of working life competence demands are growing. However, not all jobs will become knowledge intensive. There is an interesting dynamic around competences, qualifications and occupations. This second part of the paper discusses these changes in different sectors, professions and gender. New professions are appearing and others are dying out. Old professions are changing, modernising and being recoded, for example by switching gender. In this paper, therefore, we also examine some of the rhetoric surrounding social competence and other key qualifications.

When the structural transformation of the labour market intensifies, more employees have to be retrained to meet the needs of its new and expanding sectors. The time of a single occupation for life for all education experience is over. Employment training and retraining schemes have become an important tool of modern labour market policies.



□ *The skill demands of the labour market are changing so quickly now that it is even more important to move from passive policy of administrating unemployment to an active policy of equipping people to compete for jobs. In a country like Sweden, more than 90 % of vacancies require skills and qualifications.*

□ *The pace of change is remarkable.*

□ *Experts tell us that by 2005, 80 % of the technology we are using now will have gone. In its place, there will be new and better technology. The information and communication technologies are entering the workplace, and revolutionising daily life, even more quickly (°).*

Three years have passed since Allan Larsson made his statement, in which he shares some of the most common beliefs of modern working life. One of the core issues concerns the continuous increase of skill demands. Another presumption concerns the high level of job turnover and change rate. A third common concept related to the increasing level of turnover is temporary work contracts, often labelled as the contingent work force. Another trend often discussed is work intensification as a characteristic feature of modern work.

Current research and long-term studies of the Swedish labour market question some of these beliefs (°). Skill requirements are not expanding at the pace often mentioned in most occupations. The major change tends to be of a structural character with a decrease in low skilled jobs and a growth in medium- and high skilled jobs, while the changes within occupations have not been so striking. The level of job turnover has been high in Sweden during the last decade due to restructuring, downsizing and a high level of unemployment. The proportion of temporary jobs has increased but not in a dramatic form if we look over a longer period of time. Recently, however, there have been evident changes. The level of work intensification has expanded in most jobs, particularly in the public service and caring sector. In summary, these studies by Swedish scholars raise the need for a more critical debate of ideals and realities in the changing conditions in the labour market and in the workplace.

Thus, one needs to have a longer-term perspective on the process of job creation

and destruction. The transformation of labour market structures and occupations could be seen as a very rapid and dynamic one at surface level but is, to a large extent, a long-term transition. Over the decades, however, old or obsolete occupations will either be refreshed by new content and skill requirements or just fade away. One trend that has to be tested empirically is if the situation in the early 21st century is dramatically different from previous periods. New occupations and professions are constructed and some of the old ones tend to be deconstructed and sometimes deskilled. The borderlines between different occupations are also shifting, and it may be that the labour market is moving towards a more flexible relationship to work, union connections and occupational identities.

The problem of what a vocation or an occupation is, has been analysed by Isacson and Silvé (2002). An occupation can be a tool to understand and control communication and social processes at work or an instrument to exhibit and monitor power and influence. Work or occupations have strong connotations related to experience, occupational pride and being a professional in a group or at work. Thus, work and occupations have a strong identity-formation function in most countries and are also a way of characterising people with respect to gender, age and social origin.

Studies of work and occupations can also be a tool to understand how gender and sexuality are organised in our society. Furthermore, occupational positions can be seen as tools to express and control economic and political power. Finally, occupations can be used to create hierarchies, to encapsulate or to exclude individuals or to set the limits of their scope and range of actions. There are a number of groups and institutions that contribute to the formation, definition and documentation of core tasks and characteristics of occupations and vocations, i.e. trade unions and employers, scholars from social science and humanities, media and museums. They all interact in a social process of constructing, describing and defending content, core functions and culture of what today is perceived as work or a specific occupation or vocation.

(°) These remarks were made by Allan Larsson, former Director General, DG V on Employment Week session on employability. They fit well with a common understanding or conception among policy-makers about the pace of change in the labour market.

(°) See le Grande, C, Szulkin, R. and Tählin, M. (2001) Har jobben blivit bättre? En analys av arbetsinnehållet under tre decennier. SOU 2001:53 Valfärd och arbete i arbetslöshetens årtionde. Antologi från Kommittén för Valfärdsbokslut.



Workplace learning in a lean and mean work organisation

This third part of the paper discusses work organisation and conditions for learning in working life in the light of different production and management paradigms. What are the links between individual and organisational learning? What are the possibilities for creative and innovative learning at workplaces? There are studies indicating there is a risk that lean organisations will get only lean learning. In other words, we can paradoxically see indications of both overeducation and underlearning in Swedish working life.

Workplace learning in modern management concepts

The concept of workplace learning is found in various contexts in working life, in political, academic and popular arenas, and is generally seen as an important mechanism for economic growth, innovation, and competitiveness (see for example Ellström, 2000). Ideas and theories of both individual and organisational learning are central in all the management concepts of the 1980s and 1990s – for example lean production, total quality management, time-based management, the boundaryless organisation, the individualised corporation and business process reengineering. In Sweden both public and industry reports state that companies investing in workplace learning have better profitability and productivity than companies that do not (see for example NUTEK, 2000). In the United States, these trends are even stronger. There is no doubt that knowledge is a word of the greatest interest in the U.S. economy (Lynèl, 2002). This could be found in the fact that more and more U.S. companies choose to start their own universities – corporate universities – and in the very hot current concept of knowledge management (Sveriges Tekniska Attachéer, 1999). This concept addresses how to transform individual knowledge to organisational knowledge in order to control it. It includes methods for company internal measurement, assessment and control of knowledge and attitudes.

With these high ambitions in mind, it would be likely that management literature should examine the problems of the concept of learning and discuss how to organise it. But that is not the case. It is more common to

use learning as a tool among other tools in a management concept (Røvik, 2000; Furusten, 1996). Such a 'black box-perspective' sees learning as a fairly unproblematic process, in which results can be measured and controlled (Ellström, 2000). Learning has, to some extent, been turned into yet another empty buzzword. The kind of learning discussed in modern management concepts and in many studies of workplace learning is planned, intentional, requested and positive learning. This kind of learning has direction and purpose. Employees simply learn certain things or gain knowledge that is good for them or the company. This can be done in different types of formal education, courses and staff training but it can also be within a system for planned situated and informal learning, for example through trainee and apprenticeship programs, or through a changed work organisation with more developing, empowering and learning work tasks (see for example Ellström, 2000; Säljö, 2002). Scandinavian traditions from the 1980s and 1990s around workplace learning and learning organisation show tests and studies of methods built on dialogue and reflection.

Moreover, in the light of the strong focus on knowledge and learning and on the wish to control employee attitudes, behaviours and personalities, it is interesting to ask what employees learn in workplaces and at the corporate universities. Is it general knowledge, useful to the individual even outside the company, or is it company-specific knowledge on the corporate culture and brand, something close to indoctrination? Moreover, a lot of the learning for adults in working life tends to become just-in-time-learning (JITL) (Lundgren, 2002), that is, fast and flexible learning with a major focus on solving daily and pressing problems. However, the other side of the coin is that JITL could remain shallow and adaptation-focused (cosmetic), especially if it is not combined with time and resources for analysis and critical thinking and long-term learning. This could be the case for women to a higher degree than men. Some current Swedish studies show that women still get shorter internal training courses, around 1-2 days and in comparison with 14-30 days for men (see for example Lennerlöf, 2002; Abrahamsson, 2000).



Learning at the workplace

Besides this planned and intentional learning there is always unplanned and unintentional learning at workplaces. All learning activities, either arranged or informal, include this side effect. Another expression for this is the imminent curriculum (Westberg, 1996) or everyday learning which happens through doing the work tasks or as a part of the exercise of a profession (⁴). This kind of situated or contextual learning (Säljö, 2000) can be positive and developmental and is often essential both for the individual and the company. This view on learning is quite modern in research on learning and can also be found in modern management concepts. A learning organisation or knowledge management aims to control this kind of learning; it also has some negative aspects, although these are seldom discussed, especially in modern management concepts. In workplace learning research, the problems of situated learning are examined more often (see for example Abrahamsson et al, 2002). One problem is that situated learning takes place in narrow circles and gives rather context-dependent knowledge. Moreover, this learning can easily become adaptation-oriented with small possibilities for renewal and innovation since it is built, to a large degree, on unreflective imitation.

This kind of informal and unintentional learning can also be seen as a part of socialisation, the process of becoming a full member of an organisation (Lave, 2000; Wenger, 1998; Salminen-Karlsson, 2003). People learn very quickly what counts in the organisation and adapt to it. The members in the organisation create, consciously or not, ideas, opinions, attitudes and actions together. Sometimes this kind of learning directly conflicts with intentional and planned learning at the work place. For example, in the Australian coal mines the workplace culture is so strongly built on risk-taking, competitiveness, violence and aggression that it totally overrides the company's many years of work on education and teaching safety to the mining workers (Somerville and Abrahamsson, 2003). Other examples of 'negative' things that are learned are subordination, passivity and helplessness or accepting a worse workplace environment than that which is appropriate or needed. Moreover, a lot of the attitudes, norms and symbols that are learned are connected to gender. People learn gender and the gender or-

der. In other words there is a difference between what is taught, what is learned and what is practised. This is an important but neglected area in the discussion of workplace learning.

Obstacles towards organisational change

Here we also catch a glimpse of an interesting and central paradox in modern organisational models or tools. In order to promote learning at work, creativity, innovation and development, individuals should not be micro-managed but given freedom instead. This freedom however, provides scope for disobedience and reversion to old practices. Problems and difficulties, passive resistance from both the employees and the employers and even open conflicts, hinder the development of existing work and potential work opportunities. There is a risk that the organisation reverts to previous models although they may be irrational and counter productive (see March and Olsen, 1989; Lovén, 1999; Ackroyd and Thompson, 1999). A similar paradox can be found in the concepts of flexibility, informal organisations, and self-organisation. In management literature, as well in workplace learning research, self-organisation is seen as something desirable, as a part of the flexibility that allows a company to adjust to market demands, globalisation, and new products and technology. Ackroyd and Thompson (1999), however, discuss informal self-organisation as something problematic in organisations. This type of self-organisation, we believe, can also encourage moves back to old ways.

One way to analyse reversionary mechanisms or responses is to study the end result of the regression. Often there are fundamental power structures and status differences in the starting-point that are subsequently maintained, but perhaps with a change in shape and form. One important element in the power structures and status differences is gender or 'the gender order' (Hirdman, 1988; Connell, 1995). If ignored, these gender-based organisational processes can form an almost inherent element that fuels a reversion to previous ways, in spite of the fact that the management aims are to achieve the opposite. (see also Abrahamsson, 2000; Lindgren, 1999; Sundin, 1998; Hollway, 1996; Collinson and Hearn, 1996). This is especially common when companies start implementing the modern organisa-

(⁴) Lave, 2000; Lave & Wenger, 1991; Wenger, 1996; 1998.



tional models that, as a side effect, rummage about in the gender order. There are often discriminatory responses when the organisational change intends to have men and women work on equal terms, such as wage equality, on the same hierarchical level, or participating in the same job rotation (Abrahamsson, 2000; Baude, 1992; Cedersund et al. 1995; Sundin, 1998; Pettersson, 1996).

One explanation of the problem is that many organisational borders (between levels, groups, and positions) and hierarchical levels have a connection to gender (°). The gender order is a pattern one can see when looking at society on a general level (Hirdman, 1988; Connell, 1995). In different cultures, times, local situations and local organisations, there are variations in strength, scope and hierarchy (Thurén, 1996). Despite these variations, one can see two main logics in the gender order: segregation between women and men and between femininity and masculinity and hierarchical separation, with men at the top. On a structural level, a strong gender order in the organisation, for example gender segregation and stereotypical gender-coding of workplaces and work tasks, can be a heavy burden during organisational change at the workplace. Moreover, ideas of gender, femininities and masculinities, are often conservative and can create obstacles to positive learning, both for individuals and on a collective or organisational level, i.e. organisational development. A strong gender order keeps individuals in narrow spaces, both physically and mentally. It hinders dialogue, communication and the mixture and integration of different work experiences and the exchange of different skills and knowledge (Abrahamsson, 2001).

The processes of segregation and hierarchy creation are interesting since they are the opposite of integration and decentralisation, the two main aspects of modern management models. Here we can find some explanations for the reversionary responses, but also for modifications in the gender order.

Gender and skills as synchronised processes

Qualification demands in working life (demands for some specific education, skill and competence) often have close links to gender-marked fields of interest and activities/actions, characteristics, behaviours, com-

petences, attitudes and opinions. Abrahamsson and Gunnarsson (2002) discuss gender and competences as synchronised processes. On their own, skills and qualifications are nothing; they are to a large degree social constructions and are filled with different content, and are valued and adapted depending on the situation, just like gender (°). Moreover, the same skill, knowledge or competence is often valued and named differently depending on whether it relates to women or men. The male version or synonym of behaviour, characteristics or qualifications is usually more positive, important and has more 'competence' (Holmberg, 1996; Lindgren 1999). Qualification demands do not even need to be based on the actual work in question and in some situations can function more as 'gate-keepers'. Job descriptions, qualifications, and competences can be constructed and formulated in a way that gives men preference and marginalises women. In contrast, a lack of male labour often gives women admission to male-dominated industries. During such times, women are often ascribed qualifications that they usually are not thought to have (Fürst, 1998; Gunnarsson, 1994).

It is true that gender order in the workplace culture and unintended learning promote gender-based discrimination but the picture is more complex than that. Abrahamsson and Gunnarsson (2002) discuss some aspects of new organisational patterns and situations where traditional gender pattern and praxis exist in parallel to unexpected gender pattern and praxis. The gender order can be restored on one level in order to give way to changes on another level, for example, the male gender marking of social competence. There are situations where contents and meaning of gender are reformulated and transformed and adapted to the modern management models. In fact, changes in gender construction can be necessary for the implementation of modern management models. Construction of gender and construction of competences have many links and the influences flow in both directions. People are socialised and socialise themselves into both new and existing organisations. This is one part of the learning. It is seen as necessary to learn everything afresh in order to fit in and change – through education, training and courses or by simply changing opinions, attitudes or behaviour – in order to get the competences in demand.

(°) This has been shown, analysed and discussed in extensive gender and work research. See for example Abrahamsson, 2000; Acker and van Houten, 1974/1992; Acker, 1990 and 1992; Baude, 1992; Gunnarsson, 1994; Hirdman, 1988, 1998 and 2001; Kanter, 1977; Korvajärvi, 1998; Kvande 1998, Lindgren, 1985, 1996 and 1999; Pettersson, 1996; SOU 1998:6; Wahl, 1992 and 1996 and Wahl et al, 1998.

(°) The basic principle in this paper is that gender is a social construction and that gender is a verb, an activity, something that is always done. From this perspective gender – femininity and masculinity – is seen as something people do and construct in social interactions and therefore not once for all given, nor safe (Gunnarsson et al, 2003; Korvajärvi, 1998; Gherardi, 1994). Instead they are plastic and changeable. What is seen as masculine and feminine vary over space and time and those constructions are so fragile that they constantly need protection and justification (Connell, 1995).



Towards an integrative perspective: concluding remarks

The purpose of this article, based on the book on the conditions of education, competence and work in Sweden, is mainly of an exploratory nature. We want to discuss whether it is possible to analyse education, qualification supply at the labour market, skills utilisation at work and also work place learning in a more integrated perspective. We feel that we have not been successful on this journey or 'mission impossible'. Economists, sociologists, educationalists and carriers of the work science' traditions, all look at the problems from different angles and discipline-bound perspectives. In one sense we are still dominated by the traditional rigour versus relevance dilemma. The more we dig into the specific conditions of a certain workplace with its cultural codes, work organisation and production systems, and the long pathway for socialising novice or apprentices to master, the greater the distance to the macro-economic theories of human capital and the functioning of the labour market. In spite of the problems facing such interdisciplinary encounters, we still think it is valuable to look at the same phenomenon from different theoretical perspectives. Quantitative and qualitative approaches still seem to live in an isolated academic world with little or no contact, social intercourse or collaboration.

We also favour a common arena or conceptual and theoretical platform for analysing and discussing the interaction and core functions of school-centred learning and work-based learning. We need increasingly sophisticated approaches to analyse the hidden agenda of the interaction between formal education and learning outside educational organisations in non-formal or informal settings. Furthermore, it is our belief that studies of the role of education and learning in the transformation of labour markets and workplaces are vitalised and strengthened by a gender perspective.

So what can be done about the overeducation-underlearning dilemma? Generally, all economies aim for a better balance between supply and demand in respect of the education and training level of the work force. The economic downturn of recent years and increasing unemployment in some countries might, in combination with a more expansive education policy, lead to over-

supply and overeducation in the short-term. A negative scenario that may also influence future generations of students in higher education is the increasing number of highly educated people not having the opportunity to use their qualifications and skills at work. Misuse or abuse of qualifications and skills could also have a harmful influence on productivity and economic growth; the ethnic skill gap in some countries is a typical example.

Thus, we have to deal with the major working life challenge of developing new and flexible work organisations with more scope for self-control, learning and development. Furthermore, attention must be paid to the survival value and sustainability of general education and generic skills as well as vocational education. This applies not only to labour market sectors with decreasing demand but also to future work in general. A new balance between the generalist's profile and the specialist's orientation has to be developed because it is, and always has been, extremely difficult to foresee and anticipate the supply and demand balance in various labour market sectors. Specialisation and generalisation have to go hand in hand with core curriculum approaches and vocationalism (Abrahamsson, 2002).

Ultimately, we need to look more into current management ideals and how they relate to the realities of working life. The working life topic most discussed in Sweden today is the negative occupational health balance and the dramatic development of sick-leave over recent years. Work-intensification, downsizing, under-staffing and continuous organisational change have had a mainly negative impact on working conditions and the social costs of work. In many workplaces, there is a fine line between a lean work organisation and a mean or anorexic work organisation. Time for reflection and learning tends to be very limited in such a context, which more often favours competence destruction over competence development. More flexible working hours in combination with work insecurity and an increase in the use of temporary work contracts, also have mainly negative repercussions on workplace learning and development (Aronsson, 2002).

If an increasing number of higher education graduates live their working lives in low- or medium-qualified occupations, this repre-



sents a competence loss or even competence destruction both for the individual and for society. The phenomenon of underlearning or underutilisation of skills, competences or tacit knowledge is another example of misuse of cognitive assets in society or the economy. Thus, it is important to recognise, document, validate and certify informal learning capacities or skills. It is a way to make invisible learning and informal experiences more explicit and useful in everyday life and at work⁽⁷⁾.

Finally, it is of utmost interest to have a deeper look at the language of education, learning and management in work-related contexts. In high level policy quarters, the language of 'education, education, education' or the rhetoric of lifelong learning are used in an increasing number of contexts, and thereby often lose their meaning. A similar process is taking place in field of organisational learning and management, where a language of cultural and economic domination and control are expressed in a seemingly pleasant and joyful manner. Thus, there is a major challenge for further research in analysing, deconstructing and criticising the new language of education, learning and

management. Another important challenge is to make more solid and empirically-based studies of context, content and outcomes of learning at work.

If the impact of education at individual and societal levels is not as important as leading policy-makers believe it to be, social scientists must take their social responsibility seriously and analyse, clarify and guide both policy and individual actions about the value of education and learning. Education and learning is not necessarily a wonderful, low-cost and rewarding experience. Workplace learning can also be seen as a tool to influence, control and monitor employee work content and processes. Sometimes the learning mission tends to be glorified and described in terms of emancipation, autonomy and self-control. This, in our view, is only one side of the coin. The hidden curricula of workplace learning has another face: the continuing process of qualifying, selecting and attitude-shaping of employees with regard to organisational culture, workplace tasks and occupational health conditions and, not least, the gender structure of the labour market and its micro-reflections in everyday work.

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⁽⁷⁾ See, for example, SOU 2001:78 *Validering av vuxnas kunskap och kompetens samt* Björnvold, J. (2000) *Making learning visible. Identification, assessment and recognition of non-formal learning in Europe*. Cedefop: Thessaloniki.



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Key words

Educational policy, qualification, labour market, work organisation, equality of opportunities, deskilling



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Changing pedagogic and didactic approaches in vocational education in the Netherlands: from institutional interests to the ambitions of students



Elly de Bruijn
Senior researcher in the research department of the Dutch center for innovation in vocational education and training (CINOP), 's-Hertogenbosch

Introduction

The Dutch education system is marked by what initially appear to be two separate sub-systems at secondary level, namely general secondary education and vocational education (see figure 1). However, a significant number of students change the course of their education. The most common switch is that from general secondary education to vocational education, as shown in figure 1. Such a switch is in line with the intentions of the Wet op het Voortgezet Onderwijs [Secondary Education Act] (WVO) from the 1960s, which forms the basis of the organisation of secondary education in the Netherlands. This system act was designed to stimulate an educational career that consisted of a start in general secondary education and ended in vocational education or university. A route within vocational education to higher education was not recommended within the plan at the time. Even the introduction of the Wet Educatie en Beroepsonderwijs [Education and Vocational Education Act] (WEB) in 1996, which since then has governed secondary vocational education and adult education, did not alter this basic principle of the education system (see den Boer, de Bruijn and Harms, 2002; Nijhof and Van Esch, forthcoming).

Strengthening vocational education

Until recently, the various components of the vocational education stream in the Netherlands, namely preparatory secondary vocational education (vmbo), and secondary and higher vocational education (mbo and hbo respectively), were viewed and regulated separately. More recently, policy-makers have paid more attention to bringing these components into line. This attention was prompted by, among other things, the extent of unqualified dropout in areas of vocational education and the suspicion of a 'reserve of talent' within secondary vocational education.

Dropout is concentrated at the lower qualification levels of vocational education. In 1999 18 % of 15 to 24 year olds had not obtained a qualification at SEDOC-level II and had already left school (Geerligs, de Jong, van der Velden and Wolbers, 2002). In the Netherlands, SEDOC level II is defined as the minimum qualification for school leaving. School leavers without this minimum qualification have problems entering the labour market and are at risk throughout their working life (unemployment, low quality jobs, etc.).

At the Lisbon summit in 2000 the European Council set the strategic goal of becoming the most dynamic and competitive region in the world within 10 years. One of the responses of the Dutch government to this ambition is to invest in vocational education. Strengthening vocational education in the Netherlands must result in a second main route into higher education. According to national government policy, a cohesive, vocationally oriented pedagogic-didactic approach is one of the foundations of such a route. This new approach must unite two basic assumptions. The various standards in vocational education must jointly form an institutionalised stream or 'column' (1) and, at the same time, the career of the student must be central to the pedagogic-didactic organisation of this column.

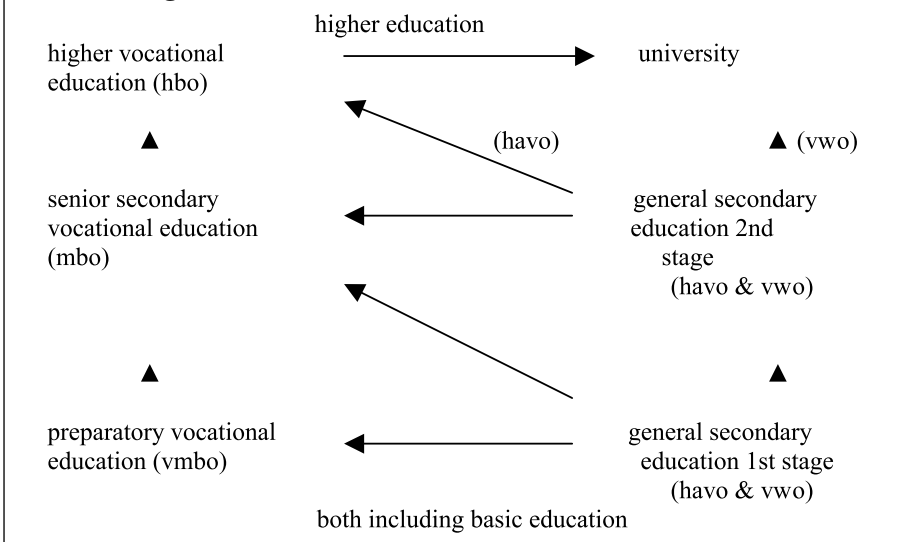
This article will present a number of building blocks for outlining such a new approach. The confrontation between vocational images and the wishes of students, on the one hand, and formal qualifications and profiles that are provided by institutions, on the other, would have to be an important guideline for the objective and organisation of learning paths. A 'community of practice' is an essential learning arrangement in a programme that is aimed at developing competences and self-regulation of learning and career development. At the same time, the boundaries of institutions for organised learning are no longer relatively stable, but are constantly shifting and regrouping around the careers of their students.

The assumption is that by implementing such a radical approach within vocational education, more students will find learning a highly relevant and attractive experience. This might lower dropout rates and lead to a higher qualification level for the total population.



Figure 1

Diagram of the main routes within the Dutch education system at the second and third stage



While a relatively high number of dropouts is the first problem policy-makers want to tackle by strengthening vocational education, stagnation in throughput within the various programmes that constitute vocational education is the second. At the lower qualification level this stagnation refers to transition from vmbo to mbo. Too many youngsters do not enter mbo after vmbo though the minimum qualification can only be obtained by completing a programme within mbo. At the other end of the spectrum is the transition from mbo to hbo. Within mbo, progression is possible from one qualification level to another; this starts with qualification level I and ends with IV, giving entrance to hbo. Policy-makers are convinced that more students are able to obtain a qualification at a higher level than currently do. Therefore, vocational education at all levels must become more attractive and the transition must be smooth. Vocational education should be more cohesive according to policy-makers.

European policy

Striving for a cohesive vocational stream and the strengthening of vocational education is strongly influenced by European policy. The European Council set an ambitious agenda for the European Union at the Lisbon Summit in 2000 (European Commission, 2002). In 2010 Europe should be the most dynamic and competitive region in the world. Knowledge, innovation and social cohesion have a role to play as part of the policy strategy for achieving this ambition. According to the European Council, it is important to en-

sure a well-educated and widely employable population, a good research infrastructure and a healthy climate for innovation.

The Dutch Government revealed itself to be a fervent supporter of these plans with its ambition to take its place in the leading group within such a Europe. One element in the policy strategy of the Dutch Government for producing a better-educated population was to increase the number of students moving on to higher education. This turned the spotlight onto vocational education. After all, little more was likely to be gained via the route of general secondary education because most qualified students already went on to higher education. Furthermore, a well-equipped vocational education system will be attractive to its participants and might cause fewer dropouts.

In 2002 the European Council in Barcelona underlined this focus on the quality and the strength of vocational education as an important element in realisation of the Lisbon agenda. In fact at least three of the five targets that the Education Council adopted (May 2003) to be achieved in 2010 put a heavy load on vocational education (European Commission, 2003). These are:

- by 2010, a European Union (EU) average of no more than 10 % early school leavers should be achieved;
- by 2010, at least 85 % of 22 year olds in the EU should have completed upper secondary education;
- by 2010, the percentage of low-achieving 15 year olds in reading literacy should have decreased by at least 20 % compared to the year 2000.

As the Netherlands has the ambition to be in the forefront of the European Union and knowing that at present 60-70 % of every age group is enrolled in vocational education during secondary education (whether first or second stage), the claim on vocational education is clear. Although the ambition of other Member States might not be to participate in the leading group, commitment to the described targets implies a challenge for their (vocational) education system too. This makes the Dutch attempts interesting to examine. Furthermore, issues concerning parity of esteem, the attractiveness of vocational education and progress to higher ed-



ucation from vocational paths are ever-recurring topics in the discussion on quality and position of vocational education (see for example: Brown and Manning, 1998; Trant, 1999; European Conference on Educational Research, VETNET programme, Lisbon 2002; Breuer and Beck, 2002).

Research project

Current Dutch policy to strengthen vocational education is to focus on greater harmonisation between the components of the vocational education column. This harmonisation should be accomplished by increasing the flexibility of the educational process. A cohesive, vocationally oriented pedagogic-didactic approach throughout this column is seen as an important element of such a strengthening of vocational education. According to policy-makers in 2001, a concrete concept for such an approach is missing.

In 2001 and 2002 CINOP Research Unit carried out research into the possible content and examples of approaches in this respect. The project aimed at the development of a conceptual framework that should give direction to attempts to put the cohesive pedagogical-didactic approach into practice. So the target result of the research project was defined as a coherent perspective on changing educational practice within vocational training that stimulates and confronts policy-makers and workers in the field. The conceptual framework should be neither too concrete nor too abstract. It should represent a way of thinking instead of precise and operational guidelines. However, both empirical and theoretical argumentation should underpin the conceptual framework.

The central research questions therefore were twofold:

- conceptual: how should we define this new pedagogical-didactic approach for vocational education?
- descriptive: are there promising examples of such an approach in educational practice?

In the research project the constructivist paradigm on learning was central for conceptualisation and analysing concrete practice. At the same time efforts were made to confront theory and practice (i.e. by means of an iterative process) in order to sharpen

conceptualisation and operationalisation. During the successive research phases, conceptual and operational models were continuously compared to each other.

Concrete research activities were:

- desk research and literature study as input for conceptualisation;
- consultation with 15 key persons within the educational support structure and with research institutions to detect innovative practices and to discuss the scope and aims of innovations;
- interviews with coordinators of fifteen selected innovative practices within vmbo, mbo and hbo in order to investigate and discuss the scope, aims and concrete practice of these innovations;
- four in-depth studies of the most promising practices, including observations and interviews with students and teachers;
- a meeting with 15 expert representatives of promising practices within vmbo, mbo and hbo in order to amend and validate the provisional results of the research project.

Knowledge from sound scientific practice was combined with knowledge produced in the direct context of application. Gibbons, Limoges, Nowotny, Schwartzman, Scott and Throw (1994) use the phrase 'mode 1' to distinguish the former knowledge source from the latter which they refer to as 'mode 2'.

From these research activities, a framework was developed using conceptual building blocks based both on theoretical notions and practical examples. The remainder of this article will present this framework, preceded by a more detailed look at its basic principles.

Policy notions: column versus career

In the quest to turn ideas into reality, a critical eye was first cast over the key principles that underlie recent Dutch policy on vocational education. The basic policy assumption for making education more flexible emphasises a cultural shift towards the student's perspective instead of, as in previous periods, the institutional perspective. The main idea is that the career of the student must be central to education, that educational



paths must be tailored to that career and that these paths are characterised by a cohesive, vocationally oriented pedagogic-didactic approach which 'captivates and thereby binds' the various students.

Two central key principles can be distinguished in these policy assumptions. On the one hand there is the perspective of a vocational column, in which the emphasis is placed on increasing internal output and throughput. On the other hand there is the perspective of a career as a guiding principle for the organisation of learning paths for students leading to vocational qualifications.

These two basic principles must be explicitly linked when making policy concrete. Column and career ideas should be united in adopting this 'cohesive, vocationally oriented pedagogic-didactic approach throughout the vocational education column' as stated by policy-makers.

Closer examination, however, reveals that the first basic principle of the support column idea (still) appears to be a sign of 'supply-based thinking from the offer available', while the second basic principle actually goes beyond the institutional framework. Thus, from the column idea, educational paths are organised with the emphasis on school-based, initial education that remains within the confines of the column. Conversely, the career idea implies the primacy of student demand, in which the boundaries of existing institutions and structures within the education system are not confining.

The column idea and the career idea cannot, therefore, be reconciled on all points. The column idea takes precedence when putting general policy into operational guidelines and regulation. This idea leads to clearly identifiable action points such as cooperation between schools and businesses, syllabus tie-ups and the development of longitudinal programmes with intermediate qualification points. The career idea is (still) described in rather 'woolly' phrases such as 'warm transfer', a 'development-oriented approach' and a 'competence-oriented approach'.

So for the time being the emphasis in thinking and acting is still heavily on the column idea (the 'cold side'). However, if there were to be a radically different pedagogic-didactic approach, the career idea (the 'warm side') would have to give much more weight

to conceptualising and making operational that approach. At the same time, the differences between the two basic principles would have to be overcome in reality. After all, that approach involves the confrontation between elements of the career (being the experiences and prospects of students) and the column (being the world in which that career must take shape).

Constructivism

The central assumption of recent policy from a pedagogic-didactic viewpoint is the effort to give shape to forms of activating, authentic and competence-oriented education in such a way that this is flexible and tailored to the student population in the sector. Many of the present experiments in Dutch educational practice that are aimed at revamping learning and teaching processes are also being covered by these principles. The constructivist paradigm on learning, therefore, appears to be a major source of inspiration for the new basic principles concerning learning and teaching in vocational education. A more detailed investigation of this view may well make the career-oriented approach more concrete and simultaneously tie in with practical experiments that are developed from the same point of view.

Central notions on learning highlighted in the constructivist philosophy include (see Bransford, Brown and Cocking, 2000):

- learning involves processes of constructing meaning in continuous interaction with the social and cultural context. Learners test the validity of developed constructions through dialogue. The psychologist Bruner characterised this process by the phrase 'negotiation of meaning': joined deliberations about the meaning of concepts in order to come to a better common understanding. Within learning arrangements, the teacher and students play a vital role in this process. Collaborative learning is, therefore, an important form of learning. At the same time, it is the task of the teacher (as an adult cultural bearer of meanings and as a pedagogic-didactic coach) to take this construction process further than students can take it alone. In learning arrangements it is important to give shape to the zone of approximate development as a goal of learning;
- learning is situation-related, with the consequence that the results of learning are



also situated. The ability to continue to learn in ever-changing situations and take previously acquired competences onto a higher level is known as transfer. This ability can be encouraged by allowing learning to take place in a wide range of situations and contexts (van Oers, 1998);

□ regulating one's own learning process can be learned (Veenman, Elshout, Meijer, 1997). Self-regulation can be developed as a result of a gradual and coaching approach in which stimulation of learning to learn strategies and domain-oriented instruction go hand in hand (van Hout-Wolters, Simons and Volet, 2000);

□ not only do learners reinterpret new content-related information from within their own conceptual framework, they also do so with regard to didactic instructions and designs, in which the individual learning theory plays a leading role. Entwistle (1991) indicated this as follows: '...it is the students' perceptions of the learning environment that influences how a student learns, not necessarily the context itself' (p. 202). It is important to take this into account by giving space to the subjective learning theory and the learning style of students when organising learning arrangements;

□ learners differ in the extent to which they require learning to be structured externally. There are also differences between learners with regard to the nature of the structure required. Both the nature and extent of external structuring also depend on the formulated learning goal (Elshout, 2000). In other words, certain support will work for a certain group of students or a certain student in one situation and not in another. These differential effects must be taken into account when organising learning arrangements, for example by always making a variety of learning activities possible.

Finally, it follows from the constructivist learning paradigm that it is important when organising learning paths and learning arrangements to define clearly at all times what type of learning results are wanted and what forms of learning are best suited to producing these results in a given situation.

The so-called 'new learning', which is based on the constructivist view, differs from the 'old learning' precisely in this relationship between what and how. In the new learn-

ing the emphasis is placed on metacognitive learning results (Simons, van der Linden and Duffy, 2000). According to this trend, learning results should consist first of knowledge and skills that are sustainable, flexible, functional, meaningful and generalisable. Second, the new learning results should relate to learning, conceptual, cooperative and regulatory skills; in other words to the metacognitive ability *per se*.

To achieve these new learning results it is important that there be more space within education for experiential and action learning. Specifically, this involves the student him/herself gaining more experience and taking more decisions in relation to his/her own learning instead of being led by the hand along heavily pre-structured learning paths. The teacher must supervise this greater space for independent learning. What is essential here is a gradual transfer of responsibilities for learning from the teacher to the student. Weaker students in particular profit most from integrated syllabuses in which a structured and phased route to self-governed learning is linked to regular instruction and supervision with regard to a content-based topic or subject area.

Alongside this greater space for experiential and action learning, and thereby self-regulated learning by the student, guided learning is also important. After all, old learning results, including a sound basis in automated knowledge and instrumental skills, remain important. Consequently, old forms of learning, such as pre-structured and guided exercises and memorising, also remain necessary. The switch to a career-oriented approach therefore implies that arrangements of old and new forms of learning must be given shape in new learning paths. These arrangements must largely be governed by the characteristics of the students and the desired learning results.

Framework of building blocks

Based on the aforementioned theoretical views and an analysis of a range of practical projects, a framework of conceptual building blocks was developed in the study to inspire a redesign of the pedagogic-didactic approach within vocational education. This framework covers:

□ the content and main thread of the learning path towards a vocational qualification;



- ❑ the pedagogic approach;
- ❑ the didactic design (°);
- ❑ the role of teachers and (practical) trainers;
- ❑ cooperation with regional players.

For each area, the building blocks are listed, explained and briefly illustrated below. As the framework aims at provoking another way of thinking with respect to pedagogic-didactic practices, formulations that are used to pose them might seem absolute. Thus, the framework can be used as an evaluation perspective to assess educational practice and to direct change and innovation. At the operational level, i.e. when putting the ideas into practice, compromises are necessary.

Furthermore, the central notions of this new pedagogic-didactic approach, taking careers of learners as a starting point, are variety and differentiation. These central notions must take shape by means of the selection of contents, the selection of learning arrangements and places and the selection of teaching activities and forms of coaching. As we know from central notions on learning outlined above, individual differences and the quality of learning results are best served by such variety and differentiation.

Content and main thread of the learning paths

This relates to the direction and final goal of a concrete learning path for students. In vocational education, the organisational principle of learning paths leading to vocational qualifications is generally given via the courses offered by a school or institution. In the best possible scenario this offer is based on developments within occupational practice and the labour market and/or the content of follow-up paths. However, it rarely happens that direction and final goal and/or final qualification are also determined by the prospects and images of the students. Nevertheless, from a career perspective these should jointly provide guidance for educational paths. Relevant building blocks for this area therefore include:

- ❑ the career prospects and vocational image of the student are co-decisive in formulating the direction and final goal of a learning path;

❑ the confrontation between the student's prospects and images, on the one hand, and the vocational images and profiles offered by educational institutions and occupational practice, on the other, set the design of learning paths. Through this confrontation the student learns and develops his/her prospects and motivations. Selection processes thus form the main thread within learning paths;

❑ qualifications and diplomas serve as a horizon and not as a blueprint;

❑ an integral redesign of vocational courses set by a career-oriented perspective cannot be achieved without a thorough analysis of the target group, i.e. an analysis of characteristics, images and wishes of the students. Innovations in vocational courses that do not take this as their starting point are still basing their thinking on the established curriculum;

❑ the degree of fitting into already designed training courses depends on the results of the target group analysis referred to in (d).

Examples of such learning paths include paths in which an extensive target group analysis is decisive in organising the path. This involves designing learning paths in which the vocational image, learning wishes and requirements of the students also determine the direction of learning paths. Boundaries to vocational areas and educational paths prescribed by law then cease to be determining factors.

The main principle for organising such learning paths can be summarised as organisation of learning paths the other way around. This idea of opposite organisation of courses stands here opposed to the traditional approach, in which the educational path is directly derived from the final attainment levels and where theory comes before practice. In concrete terms, opposite means that educational paths should be organised:

- ❑ from practice to theory;
- ❑ from ambition/image of the student to qualification/diploma;
- ❑ from workplace/company to place of learning/institution.

Finally, opposite means that the confrontation between these two diametrically op-

(°) In the Netherlands we use the term didactic to refer to the arrangement of teaching and learning processes. Thus didactic design refers to the design of this arrangement, e.g. the choice of learning methods, the selection of learning materials, the starting points of teacher and trainer activities, etc.



posed worlds and concepts should direct the format of path, with the target direction being the ultimate integration of these two incorporated by the individual learner.

Pedagogic approach

Here, pedagogic approach is understood to mean a body of aspects of the teaching and learning process, varying from the pedagogic climate to the guidance of student choices. Generally speaking this mainly concerns path supervision. Good path supervision should be integral, longitudinal and focused on the heterogeneity of the student population. Path supervision should be aimed at concrete activities of the student (self-regulation) instead of at traditional counselling. According to the basic principles of the career perspective, however, path supervision should be the central principle for organising an entire learning path, in other words the guiding principle for all areas of learning processes are:

- path supervision or career counselling is not a separate activity within learning paths, but forms an integral part of the didactic design;
- the organisation of learning paths and the didactic design is aimed at developing professional identity related to personal development ⁽³⁾;
- students and teachers work and learn in a community of practice, where students take over aspects of the role of the teachers. Students are responsible for their own learning process and career. Students support each other in their individual and joint learning processes.

Practical examples of such an interpretation could include courses that organise teaching and learning processes as a community of practice. Less far-reaching examples are also possible from more traditional forms, such as a situation in which considerable emphasis is placed on cooperative learning without always involving an authentic learning context. The didactic concept is interpreted such that mutual support between students is conditional for tasks and actions to be performed.

To sum up, the specific aspect of the pedagogic approach in the vocational education column is that it is clearly aimed at de-

veloping a professional identity and at approaching the students from the outset as becoming professional practitioners. This line of approach has consequences for the choice of learning contexts and situations and the didactic design as a whole.

The didactic design

The didactic design concerns the design of the primary process, i.e. the syllabus and activities of teachers, trainers and students. The didactic design is often a balance between:

- an educational-psychological perspective;
- subject-logical approaches (i.e. coming from the structure of scientific disciplines);
- the perspective of the profession and/or occupational practice.

Although the last of these is fitting with a career perspective, it is incomplete because often the concept of personal development as a central focus for integration between these three lines of approach is missing. However, the career perspective precisely implies a central focus on personal development as a fundamental starting point for the didactic design (Meijers and Wardekker, 2001). Therefore, important building blocks in this area are:

- in the didactic design the emphasis is on the development of regulation skills aimed at:
 - controlling one's own learning path and career;
 - integrating learning results acquired at different learning places.

In addition to constructive learning (taking action), reflective learning is vital here. Such a design means that the student must have the room to regulate. The pedagogic-didactic organisation is, therefore, characterised by adaptability with regard to individual differences and given shape as a process of fading of structure and support (see Collins, Brown and Newman, 1989);

- lifelike assignments are used in lifelike contexts. In these assignments, students not only have to apply specialist knowledge and

⁽³⁾ see the bildungsconcept in the German vocational-pedagogic tradition according to Brater and also Rauner, see Kraayvanger, G. and B. Hövels (1998) and Meijers, F. and A. Wesselingh (1999).



skills, but also (in an integrated sense) broader skills such as communicating, negotiating, planning and organising. This means that authentic, functional learning is involved;

□ subject content supports authentic and functional learning. The didactic design fits together such that these different components have as many mutual links as possible and refer to each other. This means training of skills, acquiring theoretical knowledge and practical application are linked throughout learning paths;

□ differing and varied places of learning form the learning environment within which learning takes place. The workplace is also an essential place of learning;

□ supportive, diagnostic evaluation during the learning track must be involved alongside independent, competence-oriented assessment at the end of the track.

Such an interpretation of the didactic design can mainly be found in practices that involve an integrated concept, such as problem-based learning, project education or workplace learning. The emphasis is on working on authentic assignments in authentic contexts. Furthermore, this does not mean that there is no supporting (school) subject line. This line, whether it involves the training of instrumental skills or a further insight into underlying subject knowledge, supports the more thematic character of the didactic design (see building block 11).

The essence of the envisaged redesign is primarily to remove artificial distinctions historically developed because of the institutionalisation of education, namely those between subjects, between theory and practice and between general and vocationally oriented education. The didactic design to be developed as a result is founded on the character of authentic action situations on the basis of occupational practice (i.e. professional competence).

The teaching of students within such a didactic design is steered in the direction of constructive learning and reflective learning as two sides of the same coin. Individual and cooperative learning processes alternate with each other. One important dilemma when designing such a didactic approach is therefore that between the individual and the collective: how and at what times should

you organise individual learning activities within group processes?

Role of teachers and trainers

Both from theoretical points of view and from experiences in educational practice with innovations relating to constructivist forms of education, it has emerged that teachers and trainers within learning paths leading to vocational qualifications must fulfil a new role. The main building blocks for this new role are:

□ redesigning the role of the teacher and trainers involves a central focus on coaching and diagnostic supervisory activities for the benefit of the learning and development process of the students;

□ as part of this new role, teachers and trainers must find a new balance between guidance and 'let go' so that students are given the space to explore and regulate but, at the same time, do not drown in that space and move on to trial and error behaviour and 'telling stories';

□ in the new approach, teachers and trainers must exercise their roles as experts or professionals in a product-related sense (expertise with regard to the occupational field to which the training leads) and a process-related sense (expertise as counsellor and tutor).

The core principle of the role required of teachers is adaptability. All the building blocks actually involve finding a sort of middle way between the one and the other and, at the same time, knowing how to deal with the heterogeneity of the student population. Here too the most appropriate examples can be found in educational practices that involve the integration of theory and practice or insight and application, specifically where content-based areas are concerned in which the teacher is an expert. But examples of such a role can also be seen in more delimited, traditional educational practices, for example via a more interactive form of teaching conversation in which the cognitive process of students is central and the teacher illustrates and develops.

Cooperation

A central element of policy thinking with regard to a different pedagogic-didactic ap-



proach is the cooperation between institutions within the vocational education column and that between vocational education institutions and business. In the light of a career idea, cooperation and harmonisation should relate directly to the organisation of learning paths of individual students (de Bruijn and Howieson, 1995; de Bruijn, van Esch and Doets, forthcoming):

- a cohesive, vocation-oriented pedagogic-didactic approach throughout the vocational education column is not the same as an identical approach within all segments of that column. The concrete interpretation of that approach will have to differ precisely depending on the characteristics of the students, the level, the occupational area, the desired end qualification, and so on;
- cooperation with regional players (educational institutions and businesses) must focus on actually implementing the pedagogic-didactic design for concrete learning paths for students.

When specifying such an approach in greater detail one can think of institutions that cooperate on integrated, longitudinal programmes, where possible without the cut-off point of an exam. Another example is the creation of a sequence of (learning at) workplaces as part of the didactic concept. The principles and foundations of continuous learning lines vary.

The guiding thought behind these last building blocks comes down to the fact that cohesion is not the same as cooperation, or uniformity. The key concepts of a pedagogic-didactic approach in the vocational education column defined in blanket terms are variation and differentiation, also where (regional) cooperation to give the approach shape is concerned.

Conclusions

If such a framework is to be put into practice in an actual and different pedagogic-didactic approach, several important condi-

tions must be fulfilled. These conditions are familiar from the literature on innovation and change, but also from existing experiments in education. Thus, the following may be listed as three major conditions at institutional level:

- a strong educational vision of management that can also be translated to teachers and teaching practice;
- the willingness among teachers to change;
- adequate possibilities for education and training of teachers, designing continuous peer coaching, development of team teaching and team responsibility.

Placing the career centrally means, finally, that boundaries of institutions and national structures are constantly moving. This movement is controlled by demand, not supply. A major condition that can only be met by the national government is that there must be space to shift, to move and to experiment to be able to give genuine shape to alternative forms of organisation.

In this respect, recent Dutch policy initiatives are promising. In May 2003 the Dutch government, the national organizations of vocational schools (vmbo, mbo, hbo) and social partners agreed to invest heavily in innovative arrangements at local level to put the new ideas about cooperation and pedagogic-didactic approaches into practice in an original way. The investment by these three parties is for three years in order to make a contribution to the realisation of the Lisbon agenda.

The outline for a radically different approach as given in this article might inspire these experiments. This might be true for other European countries too. However, translation of the given 18 building blocks in reference to the particular national context is necessary. At the same time it would be interesting to learn from initiatives concerning vocational education in other European countries how to contribute to the realisation of the targets set by the Lisbon agenda.



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Key words

Knowledge society,
parity of esteem,
teaching-learning process,
constructivism,
teachers' role,
customised training



Training for teachers of nursing

A contribution towards an assessment of training practices



Maria de Lourdes Magalhães Oliveira

Assistant Professor of Higher Polytechnic Education at the Artur Ravara Higher School of Nursing

Introduction

Nursing has historically been subject to the influences - scientific, technical, cultural and in human values - that are bound up with the changes in our evolving society. In Portugal, nursing is currently undergoing further changes with the inclusion of courses in nursing in higher education.

A few decades ago, technical and scientific training for the nursing profession went hand-in-hand with a sound humanistic education based on a system of ethical/moral values. Nowadays, the complexity of modern life, which is becoming increasingly compartmentalised and materialistic with a greater emphasis placed on technical than on human considerations, is leading to a loss of values and respect for the individual as a person.

School, as a social subsystem, reflects the problems of society but can be a place where practices help palliate the imbalances, indifference and lack of human respect. In fact, we found considerable advances at the cognitive and technological level, although there is still much to be done at the level of humanistic education.

The problems of nursing training today offer a vast field for study. A teacher of nursing cannot, as we see it, become isolated and allow himself to be overtaken by change 'running the risk of becoming out of date and forfeiting professional efficiency because of a lack of the training, time and culture the school should provide' (Hargreaves, 1998).

Time is an obvious and predominant requirement. Time drives a person towards dynamic, innovative openness (Bruner, 2000). The extra time granted to teachers so that they can devote themselves to other activities such as training may be taken from them

again through tighter controls and regulations concerning how this time should be used (Hargreaves, 1998).

Our study, therefore, seeks to explore and analyse the training of teachers of nursing from the point of view of changes in training practices. We shall try to find the answers to the following questions:

- do teachers of nursing have difficulty accessing training?
- what is the relationship between the time required for school activities and the time for training, and what is the influence of timetables and their degree of flexibility?
- what leads teachers of nursing to accord priority to training and what is the personal and professional motivation behind it?
- what are the policies with regard to teacher training followed by the management of higher schools of nursing?
- how can a conventional school develop into a qualifying school?

In planning our study we set ourselves the following objectives:

- to assess the importance attributed to training by teachers of nursing;
- to assess the impact of factors motivating and impeding participation in training for teachers of nursing;
- to identify the type of practical change in the teaching of nursing that leads to training;
- to analyse the way in which teachers of nursing incorporate change in their teaching practices and its relationship to training;

We present an exploratory study that seeks to assess training practices and to link the training of teachers of nursing to changes in these practices. This is relevant because of the need to discover how training leads to changes in teaching practice.

The objectives of the present study were to rate the importance attributed to training by teachers, to identify those factors that motivate or impede participation in training, to identify the type of change brought about by training and to identify obstacles to achieving the characteristics of a qualifying school.

The study was carried out in seven higher schools of nursing in Portugal, involving 64 teachers. A questionnaire was used to gather data. The results show that teachers attribute great importance to training but face substantial constraints: lack of time; other tasks that have to be performed; timetable rigidity; and a lack of encouragement on the part of the school. The chief obstacle to achieving the characteristics of a qualifying school is the lack of openness to change on the part of the nursing schools.



□ to identify the obstacles to achieving the characteristics of a qualifying school.

The study is divided into three sections: the theoretical framework in which we set the questions dealt with in the study in context by means of bibliographical research; a description of the methodological framework and strategies employed; and reports on and analyses of the results obtained.

From historical context to present-day reality

The first schools of nursing in Portugal date back to the closing years of the 19th century and were established in the country's principal cities - Lisbon, Coimbra and Oporto - at the initiative of doctors and administrators of the hospitals to which they belonged. There are now some 31 schools of nursing scattered throughout the country and operating outside the hospitals. They are run by teachers of nursing under the control of the Ministry of Science and Higher Education.

Training for nurses is now the responsibility of the higher schools of nursing which work in collaboration with teachers in other areas such as the social sciences and education. It has proved possible to realise the wish expressed by Florence Nightingale many years ago, that schools of nursing should be run by nurses and not by doctors.

Training for teachers of nursing is a field that is becoming increasingly geared to the acquisition of the knowledge, skills and attitudes essential to practical nursing. It cannot be divorced from the socio-cultural and political context, nor even from the requirements of the school and its curriculum. It cannot, either, disregard the knowledge and practice accumulated over the years, nor the knowledge made available by academic research (Rodrigues, 1999).

The origins of nursing training in Portugal go back to 1947. The relevant legislation states that 'The teaching of nursing should be provided in general and specialised courses of a minimum duration of two years and of one year in the case of the nursing auxiliary course'.

Training was to be directed to preparing health-care professionals in the nurse or nursing auxiliary category as well as chief nurses and supervisors. Initially the courses

were given by teaching nurses and doctors and training was essentially concerned with practical know-how.

As new requirements arose in the health sector, the need for training increased. In 1952, therefore, the length of the general nursing course was extended to three years and that for nursing auxiliaries to 18 months. Practical know-how now yielded to theoretical knowledge, 'knowing how to be' and 'knowing how to be with'.

In 1970 nursing instruction, which was under the control of the Ministry of Health, was restructured and rendered more independent and the relationship between school and the health or community organisations was strengthened. Following the revolution of 25 April 1974, the nursing auxiliary course was done away with while the general nursing course was retained with a new curriculum and new requirements:

- the course was to be given by teams composed of teachers of nursing and other technical staff;
- theory and practice were to be closely integrated with a ratio of one-third to two-thirds respectively;
- schools were to use practical training facilities ensuring the close integration of nurses' knowledge of the training locations.

In 1988 nursing was included as a subject of higher polytechnic education, a genuine shift in the training paradigm. Two years later saw the introduction of formally regulated three-year polytechnic nursing courses leading to a bacharelato qualification. It was stressed that clinical instruction should be entrusted to teachers of nursing working in collaboration with qualified nurses in the hospitals and clinics to ensure adequate coordination between the theoretical and clinical teaching components.

In 1999 came the creation of a four-year course leading to a licenciatura (first degree) in nursing to be provided by the higher schools of nursing as well as three-semester post-graduate specialisation courses not leading to an academic qualification. In the same year there was also the introduction of complementary training year for students taking the bacharelato course and planning to proceed immediately to the first degree



course. All training at this level was given by the higher nursing schools under the control of the Ministry of Health. Advanced training and studies leading to a master's degree or doctorate are the responsibility of the universities.

Whatever its type, structure or management, school always has a decisive influence, not only on students' development and learning but also on the training of teachers (Alarcão, 1996). As teachers, human beings and members of society, we are fully conscious of the challenges and the responsibility we have as providers of knowledge always to keep pace with change and to take account of developments in the sociopolitical and educational fields. Thinking out educational paths is imperative for teachers of nursing (Crespo, 1993).

This process of change is marked increasingly by the need to link school with the community as a whole and with other contexts and organisations that collaborate actively in training students of nursing. Progress is being made in opening up to other teaching institutions and countries of Europe, as called for by the Bologna process.

The changes taking place in education, science, culture, technology and politics make it necessary for contemporary society to realise that education does not merely involve learning facts or passing exams, but forming free, responsible, competent people and citizens who in their turn will become agents of change in a pluralist society.

Nursing instruction and personal identity

Learning is a way of altering one's relationship with one's environment. The extent of this change is largely determined by the need for the teacher to confront critical situations and the novelty that will help him successfully cope with the new problems and challenges of education. Higher polytechnic education aims to deliver sound higher-level cultural and technical training and a capacity for innovation and critical analysis (Pires, 1987).

Once the training of nurses was made a subject of higher polytechnic education it was found that the shift of paradigm in nursing training and in the training of teachers of nursing was still less than desired.

At the beginning of the 21st century, teachers of nursing need to be constantly ready to accept change and up-to-date subject knowledge, and to enhance their competence in new areas of technology, such as ICT, and teaching methods. Training is playing an increasingly important role in individual development, both in initial training and in the context of lifelong learning.

As persons responsible for training other nursing teachers and instructors, we feel a growing responsibility for the paradigm shift and for the steadily increasing investment in reflective learning. Teachers may find professional enrichment through greater mastery and control of knowledge that enables them to develop their training activity in frameworks of competence.

According to Estrela (1990), a teacher's competence is not confined to know-how but must include knowledge and attitudes. It is important for teachers not just to possess skills or competence but for them to be intellectual subjects, capable of choosing and deciding on the skills most appropriate in each situation (García, 1999). From this point of view teaching is not merely a skill but a revelation of oneself to others. A teacher is a person who needs to conduct a coherent discourse and to combine the language of criticism with the possibility of giving shape and voice to students' experiences in a critical dialogue, recognising himself as an agent of change (Girou, 1988, quoted by Fernandes, 2000).

Nowadays a teacher should learn rapidly to consider these aspects, to analyse them, talk about them and ask for help in more complex situations (Perrenoud, 2002). A teacher is a person and a professional in the process of development and not entirely complete. His construction is never complete, being governed by his capacity for development and the evolving environment to which he is exposed in the course of training and work, as well as his level of cognitive knowledge; the higher this knowledge, the greater will be his capacity to take action at more complex levels (Simões, 2001).

Nursing training is an extremely wide field for research and involvement. Everyone is an agent in training and in creating the driving forces inherent in this process. As Simões (1979, 27) says, scientific research 'seeks to create in us an interest and openness to



innovation and to develop a spirit of enquiry both at the level of initial training and throughout our lives'.

Living in a century of great challenges requires that we act and do not remain idle but reflect and meditate, in order to act again in accordance with the evolutionary process, managing and driving our own change.

Methodological framework

Study type

We present here an exploratory study that is transversal, descriptive and comprehensive. The study involved gathering and interpreting information from 64 teachers of nursing at higher schools of nursing. We shall, therefore, be analysing the opinions of a largely homogeneous group of teachers of nursing, all with the professional status of assistant teacher.

Area for analysis

We chose seven higher schools of nursing out of the 25 officially recognised, state-run nursing schools that exist in Portugal (including the autonomous regions of the Azores and Madeira) and constitute our working environment. We adopted the following criteria:

- the schools should all be official state schools;
- they should have a substantial number of teaching staff;
- they should be situated in areas allowing easy access to training.

This led us to eliminate the school in the Lisbon area to which we ourselves belong. Of the three state-run schools in this area we chose one. The other five chosen were located in the three principal towns and in the autonomous regions of the Azores and Madeira.

Data gathering

Since the population with which we were concerned were all in the same professional category, we only needed one means for gathering data from the 64 persons taking part in the study.

Our aim was to obtain a maximum amount of information in as short a time as possible. On processing and analysing the data we decided that we ought to consider other aspects and to do so used a structured interview. The interview data is now being processed. The questionnaire was drawn up in three parts with 24 questions in all.

Part I contains statements making it possible to determine certain personal features of the respondents (questions 1 and 2), followed by others concerning length of teaching experience, academic training, degrees held and training courses attended (3,4,5,6).

Part II comprises 11 statements used to assess the teachers' opinions as to the factors motivating or restricting participation in training, the situation as regards training at their school, whether they were considering acquiring the training needed to improve their work, how training was given, whether they considered themselves lacking in training and if so why, any published works, the characteristics of a qualifying school, their satisfaction with their place of work, whether they considered their work would improve if they were afforded other training opportunities, fields in which they would like to improve their skills, and the need for training with groups in the same area and from other areas.

Part III contains two statements used for assessing significant experience acquired during the person's working career and what they would change at their place of work if they had the power to do so.

The questionnaire was initially validated in order to ensure that the questions were clearly understandable. It was given to four people with the same characteristics as the subjects of the study and it was decided that no rewording was required.

Data processing

The replies to the questionnaire were processed using the method of qualitative analysis which Vala (1986) considers particularly useful at the preliminary enquiry stage. It takes account of three aspects: context, register and number. Context is the broadest segment of content a researcher examines when determining register. Register is the segment of content that is deter-



mined by placing it in a given context. Number is used as a means of quantification.

Data presentation and analysis

Analysis of the questionnaire responses enabled us to learn the opinion of the teachers concerning the priority of, and restraints on, training, motivating and impeding factors, the characteristics of a qualifying school, obstacles to their realisation and suggestions as to change.

We shall omit some tables and charts and only give here those that are most relevant. We shall begin the analysis of data by defining the academic degree held by the teachers.

The degree held by teachers is interlinked with training. All those concerned held a higher qualification; 54 % had benefited from advanced training. Only 10 % did not hold a master's degree.

From Table 1 we see that the wish to learn more about new subjects, to acquire new knowledge, and interest in teaching and in the specialised master's course were factors motivating respondents to acquire training.

As Table 2 shows, the teachers referred to some factors restricting the possibility of training, namely their non-availability for training due to the school, possible training not always coinciding with their professional work, and difficulty in reconciling training with work and family commitments.

Training is an activity which, though carried out in relationship with others, requires an effort on the part of the learner. The training of adults presupposes training given to a person who already has some experience of life. Man begins his training in the bosom of his family and gradually extends the process in new contexts: at school, at work, in groups, in a society in a constant process of change (Dominicé, 1989).

In-service continuing training has been of concern to teachers of nursing since it is acquired as a form of self-training (55 %). In-service training is only a small part (6 %) of all training acquired.

When we come to the characteristics of a qualifying school (Table 4, Annex 1) we see

Table 1
Opinion of teachers of nursing as to factors motivating them to acquire training

Context	Register	Number
Need to know more	*Wish to learn about new subjects	32
	*Wish to acquire new knowledge	29
	*Personal interest	29
	*Career advancement	29
	*Further the school's interests	19
	*Students' needs	18
	*Need to take on new projects	16
SUBTOTAL		172
Reasons for pursuing training	*Interest in teaching	30
	*Wish to learn new teaching methods	19
	*Interest in research	18
	*Attractive subjects	17
	*Easy access to training	17
	*Need to take on new projects	15
SUBTOTAL		116
Satisfaction with training	*Contact with colleagues in training	19
	*Contact with other teachers	18
	*Students' good results	18
	*Monitoring students' clinical training	18
	*Success achieved in work	13
	*Recognition of work by the school	7
	*Self-confidence in the classroom	4
SUBTOTAL		97
TOTAL		385

the emphasis of teachers' replies for the seven schools studied, referred to as A, B, C, D, E, F and G. In schools A, B and C reference was more to enhancing initial and continuing/further training. In the case of school B there is also an emphasis on encouraging cooperation in vocational training with other institutions and facilitating access to training by encouraging mobility of teachers and students.

The principal aspects that teachers consider lacking in their own school for it to comply with the requirements for a qualifying school are openness to change, creation of a plan for training, exchanges with other European countries, involvement in European programmes, freedom of movement, a reduced teaching workload and a more flexible timetable, involvement in new projects, more encouragement to acquire training, financial assistance with training and a clearly defined school policy.



Table 2

Opinions as to factors impeding training		
Context	Register	Number
Unavailable for training due to school	*Inflexible timetables	30
	*Large classes	22
	*Difficulty obtaining leave	19
	*Incompatibility with timetable	17
	*No time for doctoral work due to heavy teaching load	16
	*Too many duties to perform	15
SUBTOTAL		119
Unavailable for organisational reasons	*Distance from training location	19
	*Impossible to do project work	15
	*Lack of training criteria	13
	*Non-existence of training plan	12
SUBTOTAL		59
Impossible to reconcile with professional and family life	*Intellectually unable due to workload	20
	*No encouragement from employers	19
	*No energy left after work and family	17
	*Postponed to give time to students	12
	*Time needed to supervise students' clinical training	12
	*Too tired for extra course	10
	*Difficult to reconcile with work and family	6
	*Colleagues' negative comments on training	6
SUBTOTAL		102
TOTAL		280

As Fernandes (2000) points out, teachers need time during their teaching hours and outside of it to reflect on the complex changes being demanded of them. For this reason teachers cannot be subjected to excessively rigid timetables that risk confining them to their place of work. The school cannot function as an isolated entity but should open its doors to other realities.

- b) Give priority to training, emphasising:
- the need for knowledge;
 - the wish to learn about new subjects;
 - interest in teaching;
 - students' needs;
 - career advancement;
 - the need to undertake new training projects.

There is a growing realisation of the need to include knowledge, skills and attitudes in training programmes for teachers to help them understand complex teaching situations better. They will better understand their role as educators if they develop skills for this purpose. It is they who make lifelong learning a possibility and pave the way for organisational change (Fernandes, 2000).

Table 3 shows the suggestions for change made by the teachers of nursing, the chief ones being involvement in training policy decisions, better physical working conditions, a well-defined policy and the extension of training to school managers.

Concluding remarks

The results obtained from the study lead to the following conclusions.

- a) Teachers of nursing have difficulty accessing training as a result of:
- lack of time;
 - rigid timetables;
 - excessively large classes;
 - too many tasks;
 - a lack of training criteria.

c) We found that in some schools a 'closed' culture existed due to:

- the absence of training criteria;
- a lack of openness to change;
- a lack of incentives for training;
- the excessive burden of work placed on teachers.

d) Teachers also realise the importance of fulfilling the requirements for a qualifying school and refer to:

- openness to other teaching establishments;
- exchanges with other European countries;
- mobility of teaching staff and students;



- taking part in shared projects.

Change is not easy and has to be learned. Training and change need to be thought out as a group. Nowadays it is hard to justify a view of change that does not call for additional knowledge. As Escudero (1992, 41) points out 'Training should preferably be oriented to change, leading individuals to (re-)learn and renew their teaching methods so as to facilitate teaching and learning processes'.

e) The principal suggestions for change are:

- involvement in training policy decisions;
- recruiting more teachers;
- developing training projects;
- training for school managers;
- involvement in European projects;
- national and international exchanges.

This goes against the opinion of García (1999) when he says that the professional development of teachers is one aspect of the education system that is subject to political influence and pressures that are felt not only at the financial level but also at the level of incentives and autonomy.

According to Fernandes (2000, 30) 'Schools have shown difficulty in coping with change. One comes across occasional fragmented efforts and unrelated isolated projects'. Training does indeed involve experimentation, innovation, the testing of new teaching models and investment processes directly linked to educational practice (Cró, 1998). As time passes, the divide between school and the world outside becomes increasing evident (Hargreaves, 1998).

The factors impeding training referred to in replies to the questionnaire, particularly lack of time, led us to make a number of contacts with requests for assistance with the study.

Although the study has not yet been completed, a number of consequences are foreseeable. These are that school managers will grasp the implications and review their policies with regard to teacher training, display

Table 3

Suggestions for change		
Context	Register	Number
Involvement in training policy decisions	*Recruitment of more teaching staff	13
	*Exchanges of teachers and students between similar schools	11
	*Improvement of physical working conditions	11
	*Reviewing teacher profile	9
	*Setting up a research unit	9
	*Creation of a reflective, dynamic plan for teacher training	8
SUBTOTAL		61
Creation of better working conditions	*More flexible timetables	27
	*Facilitate access to training	21
	*Clear, pertinent definition of training criteria	19
SUBTOTAL		67
Clearly defined school policy	*Create new departments and get them working	12
	*EU-wide mobility for teachers and students	11
	*Create working groups	10
	*Encourage teachers to undergo training	9
	*Update teaching staff structure	9
	*Allocate teaching duties equitably	9
	*Credible assessment of teachers and students	7
	*Change mode of operation of scientific committee	4
SUBTOTAL		71
Training for school managers	*Make everyone responsible for his work and activities	21
	*Devise strategies for decision-making	17
	*Determine priority areas and projects	16
	*Appoint as managers those best equipped for job	15
	*Encourage reflective discussion	13
	*Organise competitions for assistant teachers	10
SUBTOTAL		92
TOTAL		291

a greater openness to change without fear of forfeiting the philosophy that guides the school's operations, and permit involvement in European projects and the creation of national and international knowledge-sharing networks.



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Key words

Nursing training,
research into nursing,
training,
innovative change, time,
qualifying school



Legislation

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ANNEX I - Characteristics of a qualifying school

Table 4

Teachers' opinions as to the characteristics of a qualifying school

School	A	B	C	D	E	F	G
Characteristics							
1. More thorough initial and further training	6	7	9	1	3	3	1
2. Develop exchanges of information	1	5	1	1	1	1	3
3. Encourage cooperation in training with other schools	1	11	3	2	2	3	3
4. Facilitate adjustment to change through training	3	5	4	2	1	3	-
5. Facilitate access to training by encouraging teacher and student mobility	3	6	4	4	-	2	3



Olaf Pollmann

Research Assistant at
the University of
Applied Sciences,
Nordostniedersachsen,
Germany



E-Learning – Virtual universities in context

Introduction

For some time it has been necessary for engineers to keep abreast of the latest developments in the economy and the labour market. Through e-learning programmes, virtual universities can provide a form of continuing education for people at work. What is particular to such courses is that they deliver online-based materials via the Internet independently of time and place.

High demand, and the profile of those who complete virtual university courses, demonstrate that these can deliver effective, high-quality teaching for engineers and others. For the first time, virtual universities can offer education and training to the many students located in remote areas where there are few institutions, thus providing a means of keeping in touch with higher education and training establishments through distance learning.

The great success of virtual courses lies in the ability to put together a wide variety of material, exploiting up-to-date scientific knowledge, applied research and national and international cooperation via the World Wide Web (see Figure 1). The way in which a course combines these inputs can make it stand out from other online-based courses.

Reasons for virtualisation

Future students will have increasing expectations of the use of new media in higher education. The current generation – sometimes known as the ‘net generation’ – comes with far more extensive experience of working with new media than any before. While earlier generations were accustomed to using television as a one-directional means of communication and adopted a consumer attitude towards that medium, the net generation is familiar with interactive communication processes from searching for information and knowledge on the Internet and from exchanging information and discussion via e-mail and chatrooms.

Because learning has ceased to be tied to a particular time and place, universities are in-

creasingly competing with one another worldwide. It is obvious that education is no longer purely a local affair. Within six hours one can physically be in New York, and in South Africa within seconds by virtual means. Renowned universities such as Stanford, Berkeley, Harvard and Oxford are market leaders. This transparent international education market suggests that it is only the ‘best’ universities that may survive and that they may soon form an educational oligopoly. But this would mean universities which have so far concentrated on educating a numerically limited elite suddenly becoming mass providers of education for the entire world and thereby losing their brand identities. Every university, therefore, has to ask itself how the worldwide education market will develop in future. Markets need to be analysed, market shares defined and niches found. One of the questions that German universities need to ask themselves is how they intend to present their world-famous engineering courses in the American, Arab and African arenas. Unless a considerable proportion of the subject content is taught using the Internet, German education will no longer be able to maintain its international status and quality.

Another reason for virtual learning is to teach growing numbers of students, while maintaining the same standards and quality. There is also the constant question of how the quality of teaching can be raised and matched more closely to the individual needs of the student without increasing budgets and staffing. The new media can help appreciably to raise quality.

Lifelong learning demands that thought is given to a new relationship between work and education, since a strict division between successive phases of education, work and retirement no longer seems relevant under present-day conditions. The universities must adapt to new ways of teaching subject content and of supporting students, and must not only decide how to respond to changes in the life-plans and timescales of their students but also address the general question of whether new criteria need

The demands made of employees are growing at an ever-faster rate, and so it is becoming increasingly important, especially for engineers, to keep abreast of the state of knowledge in the economy and the labour market. For people who work, this can be done only by means of e-learning that is independent of time and place. Learning content must be specially prepared for this purpose so that it can be published over the Internet. However, if this learning content is also published in other countries that are culturally different, it is extremely important to take those cultural differences into account and to bring about cultural acceptance. Virtual learning can be made effective through the principle of ‘blended learning’, a hybrid form of face-to-face and virtual learning.



to be applied to the notion of education as a whole.

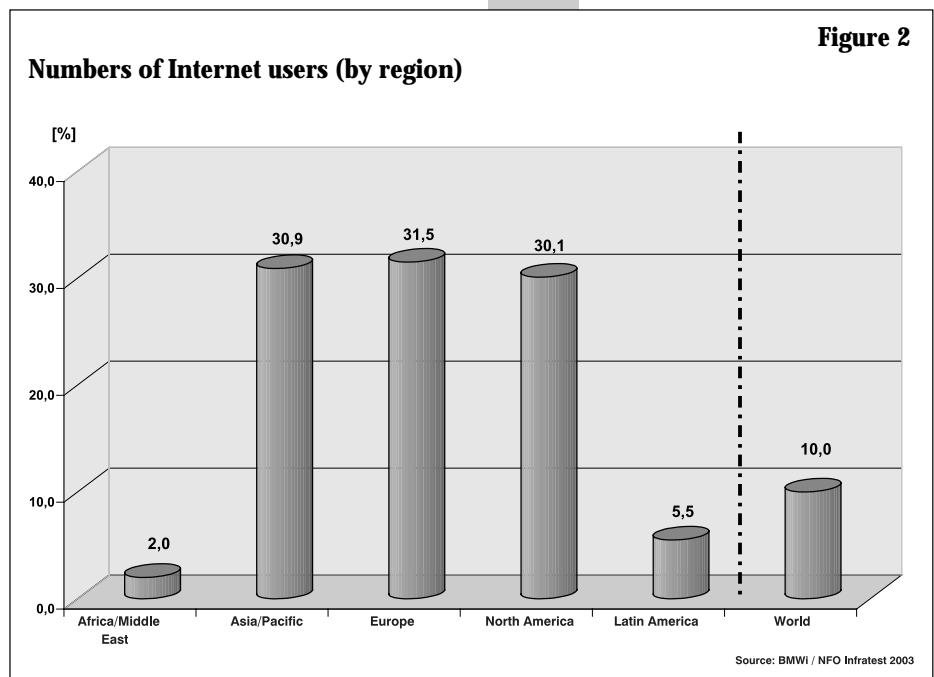
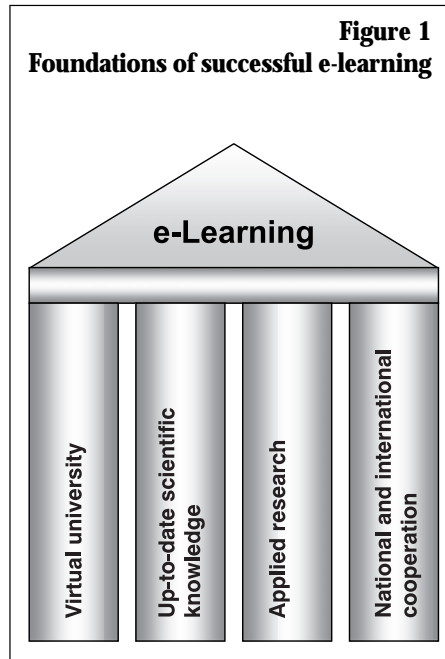
Growth in Internet users

In a statistical report on the information society published in March 2003 by the Federal Ministry of Economic Affairs and Technology (BMWi), a forecast is given of the rate of growth in the number of Internet users between 2000 and 2004 (see Figure 3). A number of other things about growth in usage and the number of current ways of accessing the Internet can be said on the basis of this investigation. It suggests that only one citizen in every 10.42 worldwide has the chance of accessing the Internet. This means that while the Internet may offer a vast flood of information, only a small minority of the population can actually make use of it.

The investigation shows very clearly that strong growth can be expected in the Latin America and Africa regions in the coming years since this is where there is the greatest need to catch up and therefore the greatest potential for expansion (see Figure 2). However, if Internet technology and the associated virtual universities are to become established in these regions, it is important that these new technologies should gradually be integrated into the cultural and political environment. This growth in worldwide use of the Internet will make it possible for existing e-learning courses to include teaching input from countries outside Europe, leading, for example, to cooperation agreements for the exchange of teaching and research in engineering and applied information technology.

If the flood of data on the Internet is to be used efficiently, it is vital for the information required to be selected. The figures for the introduction of the Internet in Latin America, for example, suggest that Internet availability will grow faster than education and training courses teaching about Internet technology. This means that it will still be a considerable time before Internet technology can be used for e-learning and for teaching subjects via the Internet.

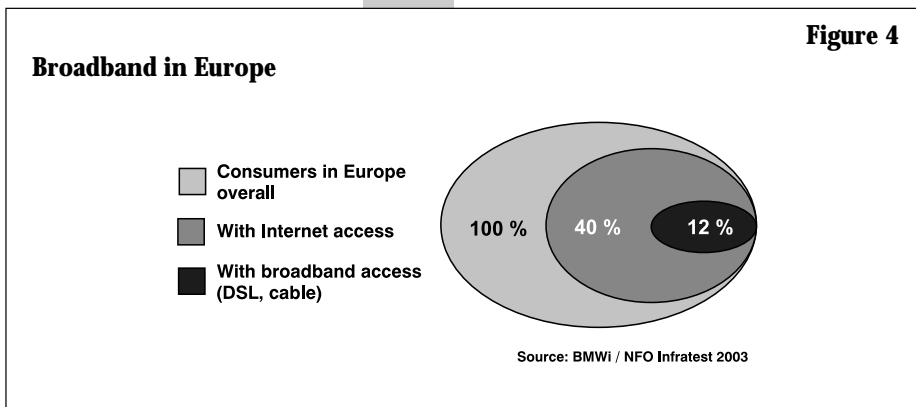
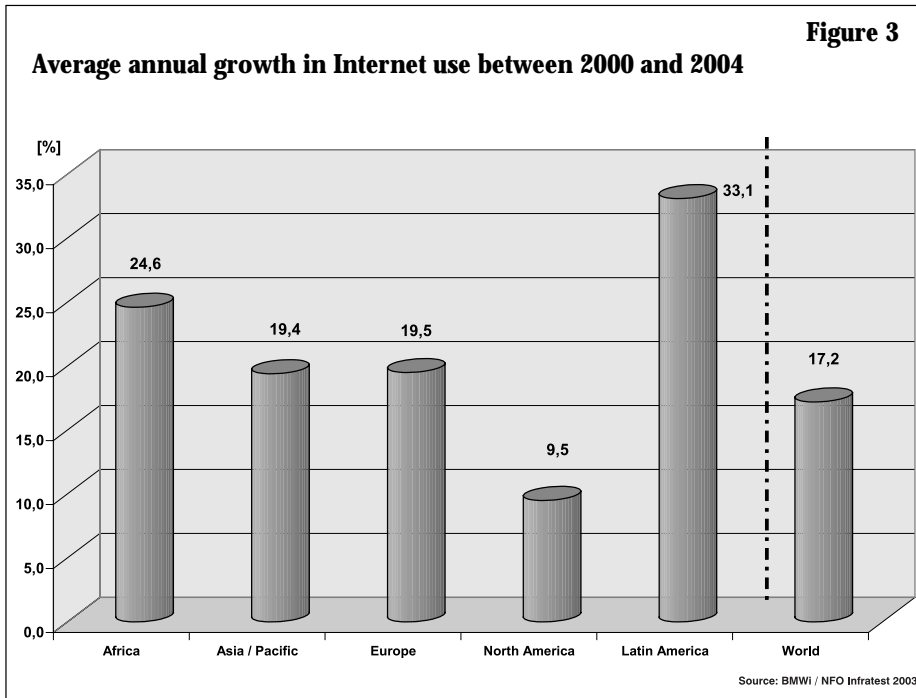
However, universities in underdeveloped countries are already setting about training skilled staff so that they can build on firm foundations in future developments.



Even in Europe, Internet technology is not yet so advanced that, for example, video on demand – general use of video streaming for teaching purposes – can be widely used in teaching. The great advantage in Europe, however, is the high level of Internet access, 40 % of all consumers having an Internet connection. This makes it possible to use the Internet for teaching on a smaller scale.

Technical arrangements and support

In order to provide students with access to course material from different locations, a virtual course needs a learning platform, based for example on the open-source Con-



The use of e-learning can be broken down into various aspects or subsidiary topics. These topics are teaching methodology, technology, content and arrangements. As Figure 5 shows, these topics add up to a whole range of potential factors which must be taken into account and which influence each other. The methodology used in teaching makes a particularly significant contribution to the success of student learning.

However, teachers and tutors working in e-learning have far greater, and more elaborate, opportunities for designing and structuring their teaching content. For example, complex procedures can be demonstrated using animated graphics, which are more easily remembered than statistical tables on paper. The use of soundfiles or complete film sequences as illustrations can also make it easier to take in learning content.

Electronic learning media do not always have an advantage over traditional paper-based media. It is not as easy to read from a screen as from a printed medium, which is one of the reasons why the paperless office has not yet proved workable. This means that textual content needs to be as concentrated as possible, and that other forms of presentation (animation and sounds) need to be employed instead. It is all too often forgotten that 'learning' implies intensive interaction with the subject-matter, and this means work. Unfortunately, graphics and animation can do nothing to alter that fact.

tent management system 'ZOPE' (Z object publishing environment). A portal such as this permits access by students and teachers by use of a personal password, so that the material can be reached from any browser anywhere.

This method can ensure that staff in different locations are able to place learning materials directly on the learning platform from different locations, thereby remaining in touch with students. It is also possible for students to discuss problems direct with one another through the creation of chatrooms, or merely to exchange ideas and experiences. In addition to this form of working together through networking, students need to attend an average of two face-to-face sessions per semester to maintain personal contact with the teaching staff, and then to attend the university in person to sit the requisite final examinations.

National and international cooperation

Through close collaboration between a number of universities it is possible to achieve expert coverage of different subjects from a range of locations. This form of collaboration is needed for the continual further development of courses that reflect the requirements of the economy, allows ongoing evaluation and guarantees high-quality learning content. The purpose and goal of such collaboration is to create focal points and profiles in the individual subjects and disciplines and to strengthen the profile and competitiveness of the universities, while providing a local source of knowledge transfer in the regions in question.

At international level, universities are giving increasing priority to the use of e-learning. The current political situation calls for greater cooperation with universities in states in Cen-



tral and Eastern Europe, both because these countries are in particular need of skilled workers and because students there are highly motivated to use international technology. Existing cooperation agreements have demonstrated that collaboration in research and teaching works very well, especially in the development and exchange of teaching content, confounding fears of cultural differences.

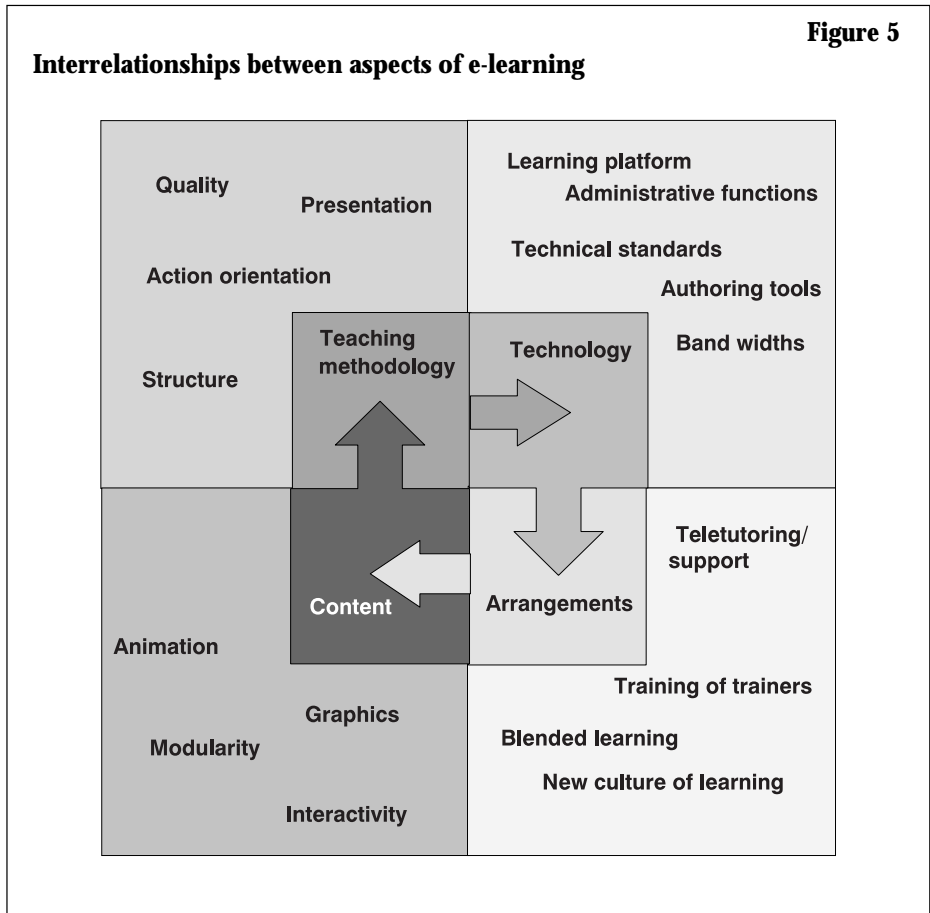
Experience of national and international cooperation between universities has shown that web-based collaboration is constantly improving in quality, with the result that teaching can continually be adjusted to the needs of students. In the future, distance collaboration will make cooperation more attractive, giving students the opportunity to learn for the future. Experience proves that education needs net-based collaboration.

Cultural acceptability

Previous investigations have repeatedly stressed the need to fit e-learning into the cultural fabrics of other nations. In the cultures of many countries, however, this process comes up against the boundaries of acceptability. If a culture is based on traditions handed down from forebears and if practices have a long heritage, present-day generations will find it very difficult to become attuned to 'man-machine-interaction' (MMI). In the case of some population groups in Latin America, Africa and Asia, for example, it is evident that cultural laws complicate the introduction of computer technology. It is, nonetheless, in these very regions that it is particularly important to build up individual learning and continuing education centres in major conurbations to give young people the chance of an education.

The younger population can be seen to have greater tolerance of information and communication technology since the media report every day on developments throughout the world, thereby arousing young people's interest. This is already the first step towards the adoption of technology.

More student and teacher exchanges will allow students to gain an insight into the culture of the partner country and to overcome potential problems from the outset. Foreign students should live with German students in halls of residence so that cultural differ-



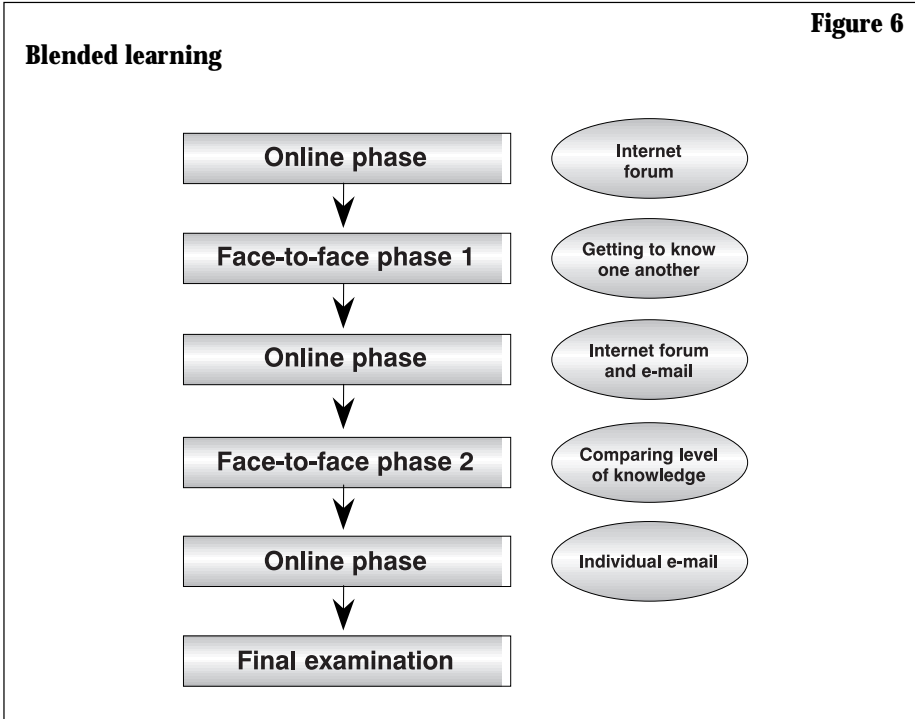
ences are forced into the background through the experience of shared living, while not being totally ignored. If cultural peculiarities are discussed in teaching, it will quickly be observed that e-learning as a method works across cultures. Special exchange programmes, supported by bursaries, can enable foreign students to pursue continuing education in Germany when they have finished their university education in their home countries.

Blended learning

In the information and communication society, lifelong learning is the route to success. The learning of the future will be guided by the knowledge actually required to perform day-to-day working tasks. The advantages of e-learning can be exploited ideally not just for initial and continuing education and training but also to meet individual thirst for knowledge. Knowledge is available over the Internet 24 hours a day, so that each student can independently learn as much as he or she can take in without waiting for the next class or lecture. Teaching units can even be fed into the work process without interrupting it. The boundary between work and learning thus dis-



Figure 6



appears. This reduces costs while improving the efficiency of distance learning and learning at the workplace. As they use the new media and the Internet, students and staff build up their media skills so that they can study as a community, but without group pressure.

Cultural and geographical boundaries are also removed. The new media give students from around the world the opportunity to study at a variety of universities, even in countries outside their homeland, and to gain access to international knowledge. Every student, regardless of the point in the world from which he or she dials up the World Wide Web, receives the same information and can easily call up the teaching and learning materials of the various providers from home.

However, although there are already graduates of virtual courses in the labour market, some people still treat the new media and new methods of learning with caution. They are afraid that they will be isolated and will have no help in handling technical problems and difficulties with the content. Another clear disadvantage is that students sit at their computers anonymously, meet no new people and find it difficult to develop any sense of belonging to a group through the virtual campus. They feel a sense of social isolation, which needs to be overcome before the course starts. There are also problems associated with the level of technical

equipment, since the costs incurred in downloading material slowly via a modem can drastically reduce students' motivation.

A combination of different methods will increase the success rate of learning and is better value for money. In essence, it is clear that the disadvantages of face-to-face teaching are the advantages of learning at a computer screen. The different methods of learning each have their own advantages, which need to be combined.

In a face-to-face lecture or class, participants make contact with one another and exchange information. They thus develop important links, which have a positive effect on their performance and communications at work.

E-learning has the advantage of freedom of timing and geographical independence. It is also relatively cheap, because there are no travel and accommodation costs. Good WBT (Web-based training) and CBT (Computer based training) courses also have considerable advantages over face-to-face training in terms of speed of learning. Depending on the subject and the way in which it is applied, learning can be up to twice as fast as in the traditional classroom. However, face-to-face classes held at intervals at the university itself can help to consolidate specific topics or to explore them in greater depth, as can synchronous or asynchronous online classes. The important thing is to find a mixture of methods which suits the learning group, the goal of learning, and the technical and social requirements.

Most students are in favour of using the new media but would be against dispensing with personal contact with fellow students and lecturers. Hence, face-to-face sessions at the university are an absolute necessity.

Summary and outlook

The essential message is that virtualisation is receiving greater attention in German and European universities than any other topic. This is partly because universities have an obligation to deliver high-quality teaching, and also because the level of education is continually rising. Especially in the age of globalisation and digitalisation, it would be naïve to imagine that using the new media makes teaching less burdensome. Such an attitude would be fatal to the further development of the German universities since



teaching will not be any good unless teachers provide excellent support and have a fundamental grasp of methodological principles such as those promulgated for many years by the Fernuniversität Hagen.

It will certainly be a long time before technology is so far advanced that even the more sceptical observer is convinced of the merits of the new media and e-learning. It is not a matter of replacing one method of learning by another, but of new and old methods of teaching being used to complement one another to develop new teaching opportunities. It cannot be expected that per-

sonal contact between teachers and learners at universities will be replaced by virtual contact, but both methods of learning – ‘blended learning’ – will become far more common and will produce a variety of combinations.

A purely virtual university, however complex, is definitely not suited to providing basic courses in this way. Young people in initial training should benefit from social as well as cognitive impact. A virtual university cannot provide this kind of personality development achieved by fostering self-presentation and soft skills.

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Key words

Lifelong learning,
blended learning,
virtual campus,
cultural acceptance,
international cooperation

Europe International

Information, comparative studies

2003 IEEE international conference on advanced learning technologies

Institute of Electrical and Electronics Engineers - IEEE

IEEE International Conference on Advanced Learning Technologies. Athens. 2003

Washington: IEEE, 2003, 650 p.

ISBN 0769519679

The primary goal of ICALT 2003 is to bring together academics, researchers and industry practitioners who are involved or interested in the design and development of advanced and emerging learning technologies. The ultimate aim is to empower individuals and organisations to build skills for exploiting the opportunities of the knowledge society. Another important goal has been to organise a high-quality conference, representing cutting-edge work that contributes to the future research agenda of technology-enhanced learning. The focus ICALT 2003 is on the design and development issues of advanced learning technologies. Contents: Instructional design theories, Architectures for learning technology systems, Integrated learning environments, Distance learning, Collaborative learning, Pedagogical and organisational frameworks, Lifelong learning, Learning styles, Learning objects, Resources, Metadata, Teaching and learning strategies, Building learning communities, Adaptive and intelligent learning applications, Application of artificial intelligence tools in learning, Advanced uses of multimedia, Hypermedia, Virtual reality in learning, and more.

Learners for life: student approaches to learning: results from PISA 2000 /

Cordula Artelt [et al.]

Organisation for Economic Cooperation and Development (OECD)

Paris: OECD, 2003, 136 p.

ISBN 92-64-10390-2

What are students like as learners as they near the end of compulsory education? The answer matters greatly, not only because those with stronger approaches to learning

get better results at school but also because young adults who are able to set learning goals and manage their own learning are much more likely to take up further study and become lifelong learners. The OECD Programme for international student assessment (PISA), which surveys 15 year olds in OECD countries on a three-yearly basis, provides a unique opportunity to look at how students approach learning and how well they perform in terms of reading literacy. This report analyses the results, focusing on student motivation, self-belief and use of various learning strategies. In particular, it looks at characteristics that make it more likely that a student will become a confident and self-managed learner. The results confirm strong links between student approaches to learning and measurable student outcomes. For example, students who demonstrate a strong interest in reading, and are more confident of their ability to solve problems that they find difficult are more likely to perform well. The report also shows particularly strong links between students' tendency to control their own learning by consciously monitoring progress towards personal goals, and their motivation and self-beliefs. This suggests that effective learning cannot simply be taught as a skill but also depends on developing positive attitudes. The report offers policy makers a fine-grained analysis of the particular learner characteristics prevalent in different countries. It also identifies differences between the approaches to learning of various groups, including male and female students, and those from more and less advantaged social backgrounds. The results point to ways in which education systems can focus efforts to help different groups of students become more effective learners. <http://www.pisa.oecd.org/Docs/download/LearnersForLife.pdf>

Learning to be employable: new agendas on work, responsibility and learning in a globalising world / by Christina Garsten, Kerstin Jacobsson.

Houndmills, Basingstoke: Palgrave Macmillan, 2003, 304 p.

ISBN 1403901058

The publication explores the powerful global discourse on employability in labour mar-



kets and its expression in local worklife practice. This is central to understanding contemporary changes in the workings of labour markets and highlights new thinking on responsibility and learning. The book shows how this discourse works, by relating empirical case studies on wider policy aims, ideological shifts, and the discursive influences of powerful organisations, such as the EU, OECD and transnational corporations. The cases highlight the dynamics of labour market change across national boundaries and how employees in local contexts learn to deal with new expectations.

Lifelong learning: education across the lifespan / by Mal Leicester, John Field.

London: Routledge Falmer, 2003, 352 p.
ISBN 041531884X

Lifelong learning is a hot issue for educators around the world, as societies everywhere are concerned with developing a literate, skilled and flexible workforce and efforts to widen participation in education at all levels and for all age-groups. This reference covers all the major issues with academic contributors covering the topics of theoretical, global and curriculum perspectives, widening participation and the industrial university. Topics covered include: community education, popular education, higher education, the corporate university, the school curriculum and vocational studies. With contributors from China, Africa, USA, Canada, UK and other European countries, the book offers a challenging account of issues arising from varying lifelong learning decisions and exposes the impact of these decisions.

Organisations as knowledge systems: knowledge, learning and dynamic capabilities / by Haridimos Tsoukas, Nikolaos Mylonopoulos.

Houndmills, Basingstoke: Palgrave Macmillan, 2003, 320 p.
ISBN 1403911401

Knowledge has only recently been widely recognised as an organisational asset, the effective management of which can afford a firm competitive advantage. This book takes an interdisciplinary approach to knowledge management, relating it to business strategy, dynamic capabilities and firm performance. Some of the most eminent scholars in

management have contributed to this timely book, including John Seely Brown, Chris Argyris, Georg von Krogh, Soumitra Dutta, Howard Thomas and John McGee, Arie Lewin and Silvia Massini. The book offers practitioners and students the latest research in organisational knowledge and management.

Student engagement at school: a sense of belonging and participation: results from PISA 2000 / Jon Douglas Willms.

Willms, Jon Douglas
Organisation for Economic Cooperation and Development (OECD)
Paris: OECD, 2003, 84 p.
ISBN 92-64-01892-1

How widespread is student disaffection with school in different education systems? What policies and practices are most effective in fostering students' sense of belonging and participation in school? These questions are of great concern to educators in many countries, not only because of the interrelationship between student engagement at school and learning outcomes, but also because student engagement represents a valued outcome in itself. The OECD Programme for international student assessment (PISA) offers an opportunity to study student engagement within an internationally comparative framework as students approach the end of compulsory schooling. PISA provides information on students' literacy skills and on their attitudes and values, their social backgrounds, and on important features of the schools they attend. This report examines several aspects of student engagement at school. The results indicate that the prevalence of disaffected students varies considerably both within and among schools in most countries, and that this variation is not attributable solely to family background. The analyses also identify some of the school factors related to student engagement and provide evidence that achieving strong student engagement at school does not have to be at the expense of academic performance.

<http://www.pisa.oecd.org/Docs/download/StudentEngagement.pdf>

Work-based learning and education reform / Thomas R. Bailey, Katherine L. Hughes, David Thornton Moore

Institute on Education and the Economy (IEE)



London: Taylor and Francis, 2003, 256 p.
ISBN 0415945658

This publication is based on five years of IEE research on work-based learning and

education reform. The book explores the potential for using work-based learning as part of a broad education reform.

European Union: policies, programmes, participants

Education and training 2010

European Commission, Directorate General for Education and Culture
Brussels: European Commission, 2003

To ensure their contribution to the Lisbon strategy, Ministers of Education adopted in 2001 a report on the future objectives of education and training systems agreeing for the first time on shared objectives to be achieved by 2010. The Ministers of Education agreed on three major goals to be achieved by 2010 for the benefit of the citizens and the EU as a whole: to improve the quality and effectiveness of EU education and training systems; to ensure that they are accessible to all; to open up education and training to the wider world. To achieve these ambitious but realistic goals, they agreed on thirteen specific objectives covering the various types and levels of education and training (formal, non-formal and informal) aimed at making a reality of lifelong learning. Systems have to improve on all fronts: teacher training; basic skills; integration of information and communication technologies; efficiency of investments; language learning; lifelong guidance; flexible systems ensuring accessibility to all, mobility, citizenship education, etc.

http://europa.eu.int/comm/education/policies/2010/et_2010_en.html

European researchers' mobility portal 3

European Commission
Brussels: European Commission, 2003

This European portal's purpose is to provide researchers planning to move in Europe with relevant resources, services, information and assistance: fellowships and grants, job vacancies, research opportunities, CV database, practical information about the European countries, discussion forum, etc. The portal also gives access to the network of mobility centres, currently under construction,

which will offer customised assistance to researchers and their families in all matters concerning their professional and daily lives. In France, the mobility centre should comprise the Association Bernard Gregory, the Alfred Kastler Foundation and the 'national mobility contact'. This portal is a joint initiative of the European Commission and the 33 countries participating in the European Union's sixth framework programme for research.

<http://europa.eu.int/eracareers/>

Erasmus Mundus

European Commission, Directorate General for Education and Culture
Brussels: European Commission, 2003

The Erasmus Mundus programme aims to enhance quality in European higher education and to promote intercultural understanding through cooperation with third countries. The Erasmus Mundus scheme is intended to strengthen international links in higher education by enabling students and visiting scholars from around the world to engage in postgraduate study at European universities, as well as by encouraging the outgoing mobility of European students and scholars towards third countries. The basic feature of the programme includes a global scholarship scheme for third country nationals, linked to Erasmus Mundus masters courses at European higher education institutions. These postgraduate courses will involve study in at least two higher education institutions in different European countries and will be distinguished by their European label. The participating countries will be the current European Union Member States, the countries ready for accession to the European Union in 2004, the current European Union candidate countries and the members of EFTA and EEA (European Free Trade Association and European Economic Area). The proposed duration of the program is



five years (2004-08) with a planned financial envelope of EUR 230 million for the whole period. The Council of Ministers and the European Parliament are likely to adopt the Decision within the end of the year 2003. The Erasmus Mundus programme should therefore enter into force at the beginning of next year.

http://europa.eu.int/comm/education/programmes/mundus/index_en.html

Commission Staff working paper - e-Learning: designing tomorrow's education: an interim report

Commission of the European Communities. SEC, (2003) 905 final
Luxembourg: EUR-OP, 2003

In launching the initiative eLearning: designing tomorrow's education, with its corresponding Action Plan for 2001-04, the Commission laid the foundations for concrete and sustainable action, through a set of specific measures. In proposing the 'eLearning programme 2004-2006', the Commission aims to strengthen this work by focusing attention on digital literacy, school twinning and virtual campuses, while reinforcing its monitoring of the eLearning action plan. The measures launched by the Commission will serve to coordinate the various eLearning activities of Europe and propel us towards the knowledge-based economy and the vision set in Lisbon.

http://libserver.cedefop.eu.int/vetelib/eu/leg/com/sec_2003_0509_en.pdf

EURES charter

European Coordination Office EURES
Official Journal of the European Communities, C 106, pp. 3-9
Luxembourg: EUR-OP, 2003
EUR-OP, 2 rue Mercier, L-2985 Luxembourg, or from its national sales offices,
Tel. (352-29) 2942118, Fax (352-29) 2942709,
E-mail: info.info@opoce.cec.be,
<http://www.eur-op.eu.int/>

This document describes the EURES charter which provides information on job vacancies and applications, help in recruiting from another European country, information on living and working conditions and labour markets. Part one gives a description of EURES activities; part two sets out the operational objectives, quality standards and obligations of the EURES members and part

ners, and part three deals with the uniform system and common models for exchanging information.

http://libserver.cedefop.eu.int/vetelib/eu/leg/char/2003_0106_en.pdf

Exploitation and development of job potential in the cultural sector in the age of digitalisation

European Commission, Directorate General Employment and Social Affairs
Brussels: European Commission, 2001

Until recently, the economic and labour market aspects of the arts and cultural sector were of secondary significance in the welfare state. The cultural sector is characterised by a high proportion of freelancers and very small companies. According to the broadest definition, there are currently 7.2 million workers in the EU cultural sector; this figure is significantly higher than that assumed in previous studies. Continued employment growth in the creative occupations of the cultural sector is to be expected since the demand for cultural products and services is strongly increasing, both from private households and from companies. The 'digital culture' is the result of an interaction between 'traditional' culture (content), the TIMES sector (technology) and services/distribution. The increasingly used term TIMES (Telecommunication, Internet, multimedia, e-commerce, software and security) is used in this study to cover the whole audiovisual sector, i.e. the entire multimedia sector, including culture industry areas such as TV, publishing, and the music industry. This sector in the EU is characterised by very small companies. Digital culture has significant employment impact, particularly in multimedia and software. A large number of good practices in the EU are related to the new job profiles within digital culture and offer corresponding qualification measures. However, in the light of the enormous need for qualification, they are still nowhere near sufficient in terms of number.

http://libserver.cedefop.eu.int/vetelib/eu/pub/commission/dgesa/2004_0018_en.pdf

Innovation in vocational training: exchange of experiences between South and East Mediterranean countries and the European Union: Turin, 4th November 2003.

European Training Foundation (ETF); Euro-



pean Commission, Directorate General for Education and Culture
Torino: ETF, 2003

In line with Mr. Prodi's commitment to increase cooperation and intercultural dialogue with South and East Mediterranean countries, the European Commission (DG Education and Culture) organised a valorisation/dissemination conference in collaboration with the European Training Foundation (ETF). The main aim of the conference was to provide an opportunity for exchange on innovation and good practices in vocational training between the European Union and South and East Mediterranean countries (MED countries), in particular using results from the Leonardo da Vinci programme and other regional initiatives. The conference also offered scope for reflection on valorisation methods and instruments and for discussion on follow-up activities. The conference comprised four main sessions, each of them starting with a presentation of the state of the art and latest developments on a specific topic. The four sessions discussed topics which are considered priority themes in both EU and MEDA training. Theme 1 covered training and enterprises, asking how to ensure that training is attuned to the needs of enterprises, in particular of SMEs. Theme 2 looked at quality in VET, quality management and quality control systems. Theme 3 considered e-learning and virtual learning methods. Theme 4 was training teachers and trainers. The targeted audience was decision-makers able to instigate changes in training systems, Directors General for vocational training, representatives of universities and institutions, actors in vocational training, social partners, NGOs.

Innovation policy: updating the Union's approach in the context of the Lisbon strategy. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee for the Regions / Commission of the European Communities

European Commission
Luxembourg: EUR-OP, 2003, 27 p.
(Documents COM, (2003) 112)
EUR-OP, 2 rue Mercier, L-2985 Luxembourg,
or from its national sales offices,
Tel. (352-29) 2942118, Fax (352-29) 2942709,
E-mail: info.info@opoce.cec.be,
URL: <http://www.eur-op.eu.int/>

Innovation is a cornerstone of the Lisbon strategy launched by the European Council in March 2000, and emphasised by subsequent European Councils, in particular at Barcelona in 2002. The object of this Communication is to describe the diverse routes to innovation and analyse the consequences for the design of innovation policy and for the different means by which innovation policy is put into action, so that they are not hampered by a view of innovation which is too restrictive. This analysis is complemented by an examination of the current challenges that are, to different degrees, specific to the EU, recognising that structures, problems and opportunities relating to innovation are not necessarily the same in all the world's major economic areas. Factors considered include the persistently inadequate performance of the Union, the implications of enlargement, demographic trends, and the large size of the public sector in EU economies.
http://libserver.cedefop.eu.int/vetelib/eu/leg/com/com_2003_0112_en.pdf

From the Member States

AT **Bildungsziele in der Wissens- und Informationsgesellschaft: eine Analyse des Bildungsdiskurses von 1990 bis 2001 [Educational objectives in the knowledge and information society: an analysis of the educational debate 1990-2001.]**

Gehmacher, Ernst; Kreiml, Thomas; Steiner, Karin

Analyse Beratung und Interdisziplinäre

Forschung - abif

Vienna: abif, 2003, 88 p.

abif, Wiedner Hauptstraße 39/2/11a, A-1040
Wien, Tel. (43-1) 5224873, Fax (43-1) 5226577,
E-mail: office@abif.at, URL: <http://www.abif.at>

The aim of the project is to present and examine the debate on the education system particularly over the past 10 years. Starting from the confusion and tangle of the pre-



vailing debate on education, this analysis of current educational ideals and norms aims to throw light on their socio-political relevance. A second aim is to show how society describes itself from the perspective of one of its subsystems, namely, education. To examine this assumption in more detail, the educational debate is analysed in depth on the basis of ideal types and presented through the example of selected demands by Austrian politicians in relation to education policies. The study is rounded off by an analysis of expert opinions on 'education in the knowledge and information society and education-related ideas which are reflected in public discourse (newspapers). <http://www.abif.at/deutsch/download/Files/Endbericht-Bildungsziele%20in%20der%20Wissens-%20und%20Informationsgesellschaft.pdf>

Employability of vocational training graduates: the European SME approach: Austrian report

Mandl, Irene; Oberholzner, Thomas
Vienna: Österreichisches Institut für Gewerbe- und Handelsforschung, 2003, 92 p.

This study deals with the employability, acquired skills and abilities of vocational training graduates when entering SMEs, and with different regional policy-making approaches aimed at improving vocational training graduate employability. Special attention is paid to the graduates' specific skills in information technologies. The study contains analyses for five European countries and enterprises of different sizes as well as gender considerations.

http://www.kmuforschung.ac.at/de/Employability_of_Vocational_Training_Graduates/Employability_of_Vocational_Training_Graduates.pdf

CZ Counselling services at Czech Universities / Zuzanna Freibergerova [et al.]

National Training Fund - NTF, National Resource Centre for Vocational Guidance - NRCfVG
Prague: NTF, 2003, 159 p.
ISBN 80-86728-00-5

The publication provides a comprehensive overview of the current counselling situation in Czech universities in the context of counselling services within the purview of

the Ministry of Education. There are also some additional empirical findings. Counselling is viewed from the perspective of student services provided by modern universities, and the training of counsellors. Moreover, the publication contains a description of counselling at universities in selected European countries.

DK Rapport fra Udvalg om fornyelse af vekselluddannelsesprincippet mv. for visse tekniske erhvervsuddannelser / Undervisningsministeriet. [Report from the Committee for the renewal of the dual training principle within some of the technical training programmes.]

The Danish Ministry of Education - UVM, Uddannelsesstyrelsen
Copenhagen: UVM, 2003, 56 p.
(Uddannelsesstyrelsens temahæfteserie, nr. 3-2003)

Undervisningsministeriet, Frederiksholms Kanal 21, DK-1220 Copenhagen K, Tel. (45-33) 925000

In 2002, the Danish Minister of Education established a committee to renew the dual training principle within some technical training programmes. The committee was a tripartite body consisting of representatives of the social partners and the Ministry of Education. The mandate of the committee was to find solutions and forward recommendations on creating more flexible structures for a number of specified technical training programmes. An area of special interest was how to renew the dual training principle. The present report describes the results of the committee's work. It forwards recommendations on flexibility, strengthening the proficiency level of the programmes, quality assurance, implementation of Reform 2000, and how to strengthen the dual training principle and create better coherence between the school-based and the work-based parts of training. <http://pub.uvm.dk/2003/fornyelse/>

Erhvervspædagogik mellem tradition og fornyelse: lærerkompetencer, læring og ledelse. [Vocational pedagogy between tradition and renewal: teacher competences, learning and management.]

Findalen, Erik; Dibbern Andersen, Ole
Danmarks Erhvervspædagogiske Læreruddannelse - DEL
Frederiksberg: DEL, 2003, 60 p.
ISBN 87-7548-149-9



DEL, Rosenørns Allé 31, DK-1970 Fred-
eriksberg C., Tel. (45-35) 247900, Fax (45-
35) 247910, E-mail: del-lib@delud.dk, URL:
<http://www.delud.dk/>

The reform of Danish VET programmes,
which came into force in 2001, poses ma-
jor challenges to vocational colleges and their
teachers. The reform changed both teacher
roles and the requirements for pedagogical
approaches. In this collection of articles, fo-
cus is on the reform and its new demands
on the competences of the teachers and the
school leaders. It consists of four articles
which all highlight some VET paradoxes in
Denmark. In one of the articles, Teacher com-
petences, teacher training and development
of the VET programmes, the author, Sten
Clod Poulsen, points to the fact that many
solutions to classroom problems already ex-
ist but are not used in colleges. The collec-
tion is based on a conference held in Kold-
ing in June 2002

[http://www.delud.dk/dk/publikationer/
Erhvervspaedagogik/index.html](http://www.delud.dk/dk/publikationer/Erhvervspaedagogik/index.html)

FR Financement de la formation: la fin de l'obligation légale?

[Financing of training: the end of legal ob-
ligation?]

Gérard, Laurent

Entreprise et carrières, No 661 (Mars 2003),
p. 14-21

Rueil-Malmaison: Liaisons Sociales, 2003
ISSN 0995-4945

This dossier presents a list of the proposals
made by the employers and trade unions for
the resumption of negotiations on vocation-
al training reform in April 2003. The employers'
organisations and unions are in favour of turn-
ing the legal obligation to finance training in-
to an obligation governed by agreement. A
consultant in law dealing with training thinks
that for training to be revamped, and espe-
cially for a right to skills to be established, it
will be necessary to waive taxation on this le-
gal obligation. Two questions still have to be
settled: joint investment in training and arrange-
ments for training outside working hours.

DE Erkenntnis und Erfahrung im Verhältnis zu Steuerung und Gestaltung: Berufsbildungsforschung im Rahmen der DFG-Forschungsförderung und der BLK-Modellversuchsprogramme / Klaus Beck.

[Knowledge and experience in relation to
control and design: vocational education and
training research in the context of DFG re-
search promotion and the BLK pilot project
programme].

In Zeitschrift für Berufs- und Wirtschaft-
spädagogik Vol. 99, No 2, p. 232-250 (2003).
- Stuttgart: Steiner Verlag, 2003
ISSN 0172-2875

Taking vocational education and training re-
search as an example, the author addresses
the issue of the relationship between theo-
ry and practice. The first part reports on new
findings in teaching and learning research,
with particular attention to the DFG priori-
ty programme dedicated to teaching and
learning processes in initial commercial train-
ing. In the second part the author system-
atically considers pilot project research, con-
centrating on whether research and practice
can be harmonised.

Forschungsmemorandum für die Erwach- senen- und Weiterbildung / Rolf Arnold [et al.] [Research memorandum for adult and continuing vocational training]

In Erziehungswissenschaft Vol. 14, No 6,
p. 41-69 (2003). - Weinheim: Deutscher Stu-
dien Verlag, 2003
ISSN 0938-5363

The growing importance of lifelong learn-
ing and adult education requires broad-based,
intensive and sustained empirical research.
The German Institute for Adult Education
(Deutsches Institut für Erwachsenenbildung,
DIE) presents in programmatic form the re-
quirements of training research in adult ed-
ucation. The report identifies, classifies and
defines focus areas in this increasingly im-
portant area of training research. The report
addresses the following topics: how adults
learn; knowledge structures and skills needs;
professional competence; institutionalisa-
tion: system and policies at various levels.

IE Educational Disadvantage Forum: report of inaugural meeting / Ed- ucational Disadvantage Committee

Department of Education and Science, Ed-
ucational Disadvantage Committee
Educational Disadvantage Forum. Dublin.
2002

Dublin: Department of Education and Science,
2003, 37 p.

Department of Education and Science, Marl-



borough Street, IRL-Dublin 1, Tel. (353-1) 8734700, Fax (353-1) 8787932, URL: <http://www.irlgov.ie/educ/>

This report presents the discussions and deliberations of the Forum on Educational Disadvantage held in Dublin in November 2002. The Forum was attended by almost 300 people from various education sectors, formal and non-formal. The report also reflects the views expressed in over 70 written submissions made to the forum and available on the Department of Education and Science website. Professor Peter Evans of the OECD gave the keynote address in which he outlined the international policy context within which actions to address educational disadvantage have been implemented. He identified a number of key differences between old style non-integrated services and new style integrated services to address educational disadvantage. A summary of submissions was then presented to the forum, followed by a summary report of working groups and an open forum discussion. The report concludes with a presentation of the key themes and issues raised at the Forum. Among the recurring themes were: addressing the issue of educational disadvantage within a rights-based approach to equality; greater strategic cohesion and coordination of services and policies across and within Government departments, and also at local level; and forging close links between schools and communities in approaching disadvantage issues. http://www.education.ie/servlet/blobServlet/si_ed_disadvantage_forum.pdf

Institutes of Technology and the knowledge society: their future position and roles: report of the expert working group.

Council of Directors of Institutes of Technology
Dublin: Council of Directors of Institutes of Technology, 2003, 64 p.
Council of Directors of Institutes of Technology, 4 Lower Hatch Street, IRL-Dublin 2, Tel. (353-1) 6769898, Fax (353-1) 6769033, E-mail: margaret.coen@councilofdirectors.ie, URL: <http://www.councilofdirectors.ie>

The institutes of technology provide undergraduate technological higher educa-

tion at certificate, diploma and degree level, postgraduate education at masters and doctoral level, and offer opportunities for craft and apprenticeship training and an increasing provision for part-time learners. They have an important regional role in stimulating and attracting local industrial development. The expert working group was asked to examine the role of the institutes within higher education and to make recommendations as to their future development, taking account of best international practice. The report examines the evolving policy framework in which the institutes operate, the implications of the decline in the number of school leavers, the promotion of diversity of provision and flexibility of delivery, and the institutes' interaction with further education and second level sectors. The role of the institutes of technology in research, their place in higher education in Ireland and proposals for their future structures are also discussed.

http://www.councilofdirectors.ie/documents/246_Directors.pdf

PL Warsztat pracy europejskiego doradcy kariery zawodowej

[A workplace of a European career counsellor]

Paszowska-Rogacz, Anna
Warsaw: KOWEZ, 2002, 98 p.
ISBN 83-88780-30-1
KOWEZ, ul. Spartańska 1B, 02-637 Warsaw, Tel. (48-22) 8441868, Fax (48-22) 6465251, E-mail: sekret@kowez.edu.pl, URL: <http://www.kowez.edu.pl>

The publication is addressed to teachers, school pedagogues and vocational counsellors who undertake the task of preparing secondary school pupils to choose and design their future professional career in a thoughtful way. Presenting a set of 30 exercises (based on reliable experiences gathered by authors from various EU countries) and guidelines for the interpretation of the results, the author helps to identify interests, abilities, value systems, areas of professional activity and life style preferences. This knowledge helps people plan their future and take informed decisions concerning their job or continuing their education.



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Fax (30)23 10 49 00 43 Secretariat
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E-mail: mwi@cedefop.eu.int
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BIBB

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Robert-Schumann-Platz 3
D-53142 Bonn
Dr Georg Hanf, Senior Researcher
International Comparative
Research
E-mail: hanf@bibb.de
Tel. (49-228) 10 71 602
Fax (49-228) 10 72 963
<http://www.bibb.de/>

Centre INFO

Centre pour le développement de
l'information sur la formation
permanente
4, avenue du Stade de France
F-93218 Saint Denis de la Plaine
Cedex
Henriette Perker, Project Manager
E-mail: h.perker@centre-inffo.fr
Tel. (33-1) 55 93 92 14
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Centrum voor Innovatie van
Opleidingen
Pettelaarpark, Postbus 1585
NL-5200 BP 's-Hertogenbosch
Martine Maes, Consultant
International Affairs
E-mail: mmaes@cinop.nl
Tel. (31-73) 68 00 619
Fax (31-73) 61 23 425
<http://www.cinop.nl/>

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Documentation
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Web address: <http://www.vdab.be>

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Organismos Epaggelmatikis
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Karamanoglou
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Dr George Sapounakis, Head of
Studies Department
E-mail: tm.spoudon@oEEK.gr
Tel. (30-21) 02 70 91 40
Fax (30-21) 02 71 97 66
<http://www.forthnet.gr/oEEK/>

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Fax (353-1) 60 70 634
<http://www.fas.ie/>

abf-Austria

IBW
Institut für Bildungsforschung der
Wirtschaft
Rainergasse 38
A-1050 Vienna
Prof. Thomas Mayr, Director
E-mail: mayr@ibw.at
Tel. (43-1) 54 51 67 10
<http://www.ibw.at/>

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DK-1171 København K
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Adviser
E-mail: sep@CiriusMail.dk
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INOFOR

Instituto para a Inovação na
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Fernanda Ferreira, Coordinator
E-mail:
fernanda.ferreira@inofor.gov.pt
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Fax (351-21) 81 07 190
<http://www.inofor.pt/>

Études et Formation S.A.

335 route de Longwy
L-1941 Luxembourg
Marc Ant, Managing Director
E-mail: marcant@etform.lu
Tel. (352) 44 91 99
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<http://www.etform.lu/>

OPH

Opetushallitus
Hakaniemenkatu 2, P.O. Box 380
FIN-00531 Helsinki
Matti Kyrö, Head of Unit
E-mail: matti.kyro@oph.fi
Tel. (358-9) 77 47 71 24
Fax (358-9) 77 47 78 69
<http://www.oph.fi/>



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Fax (46-8) 52 73 32 00
<http://www.skolverket.se/>

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National Centre for Vocational Education Research Ltd.
PO Box 8288
AU-SA 5000 Station Arcade
Dr Tom Karmel, Managing Director
E-mail: exec@ncver.edu.au
Tel. (61-8) 82 30 84 00
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QCA

Qualifications and Curriculum Authority
83 Piccadilly
UK-W1J 8QA London
Tom Leney, UK ReferNet Coordinator
E-mail: leneyt@qca.org.uk
Tel. (44-20) 75 09 53 92
Fax (44-20) 75 09 69 77
<http://www.qca.org.uk/>

EVTA

European Vocational Training Association
Rue de la Loi, 93-97
B-1040 Brussels
Tommaso Grimaldi, General Secretary
E-mail: tommaso.grimaldi@evta.net
Tel. (32-2) 64 45 891
Fax (32-2) 64 07 139
<http://www.evta.net/>

ETF

European Training Foundation
Villa Gualino, Viale Settimio Severo 65
10133 Turin
Vaclav Klenha, Project Manager
E-mail: Vaclav.Klenha@etf.eu.int
Tel. (39-011) 630 22 25
Fax (39-011) 630 22 00
<http://www.etf.eu.int/>

ILO/BIT

International Labour Office
4 Route des Morillons
CH-1211 Geneva 22
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E-mail: barney@ilo.org
Tel. (41-22) 79 96 959
Fax (41-22) 79 97 650
<http://www.ilo.org/>

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Samstarfsvettvangur atvinnulífs og skóla
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IS-108 Reykjavík
Aðalheiður Jónsdóttir, Director
E-mail: alla@mennt.is
Tel. (354) 59 91 440
Fax (354) 59 91 401
<http://www.mennt.net>

EFVET

European Forum of Technical and Vocational Education and Training
Rue de la Concorde, 60
B-1050 Brussels
Hans van Aalst, President
E-mail: h.vanaalst@kpcgroep.nl
Tel. (32-2) 51 10 740
Fax (32-2) 51 10 756
<http://www.efvet.org/>

UNEVOC

International Centre for Technical and Vocational Education and Training
Görresstr. 15
D-53113 Bonn
Rupert Maclean, Director
E-mail: r.maclean@unevoc.unesco.org
Tel. (49-228) 24 33 712
Fax (49-228) 24 33 777
<http://www.unevoc.de/>

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Department for Education and Skills
Room E3, Moorfoot
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Teknologisk Institutt

Akersveien 24C
N-0131 Oslo
Signe Engli, Project Manager
E-mail: signe.a.engli@teknologisk.no
Tel. (47-958) 76 139
Fax (47-22) 86 53 39
Web address: <http://www.teknologisk.no/>

European SchoolNet

Rue de Trèves 61
B-1000 Brussels
Frans Van Assche, Strategy Manager
E-mail: frans.van.assche@eun.org
Tel. (32-2) 79 07 575
Fax (32-2) 79 07 585
<http://www.eun.org>

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Centre international de formation de l'OIT
Viale Maestri del Lavoro, 10
I-10127 Turin
Catherine Krouch, Documentation
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Tel. (598-2) 92 05 57
Fax (598-2) 92 13 05
<http://www.cinterfor.org.uy/>

European Commission

Rue de la Loi 200
B-1049 Brussels
Peter Baur, Project Manager
E-mail: peter.baur@cec.eu.int
http://europa.eu.int/comm/dgs/education_culture/index_en.htm

OVTA

Overseas Vocational Training Association
1-1 Hibino, 1 Chome, Mihama-ku,
JP-261-0021 Chiba-shi,
Nobuhiro Uehara, Managing Director
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Vocational training policy analysis

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Section prepared by the Documentation Service with the help of the members of the documentary network

Anne Waniart

European Journal 'Vocational Training'

No 31 January – April 2004/I



European Centre for the
Development of Vocational Training

Europe 123, GR-570 01 Thessaloniki (Pylea)
Postal address: PO Box 22427, GR-551 02 Thessaloniki
Tel. (30) 2310 490 111 Fax (30) 2310 490 099
E-mail: info@cedefop.eu.int
Homepage: www.cedefop.eu.int
Interactive website: www.trainingvillage.gr