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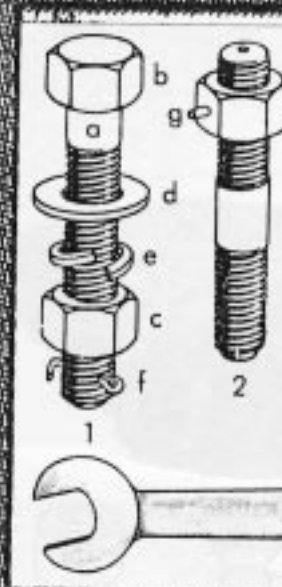
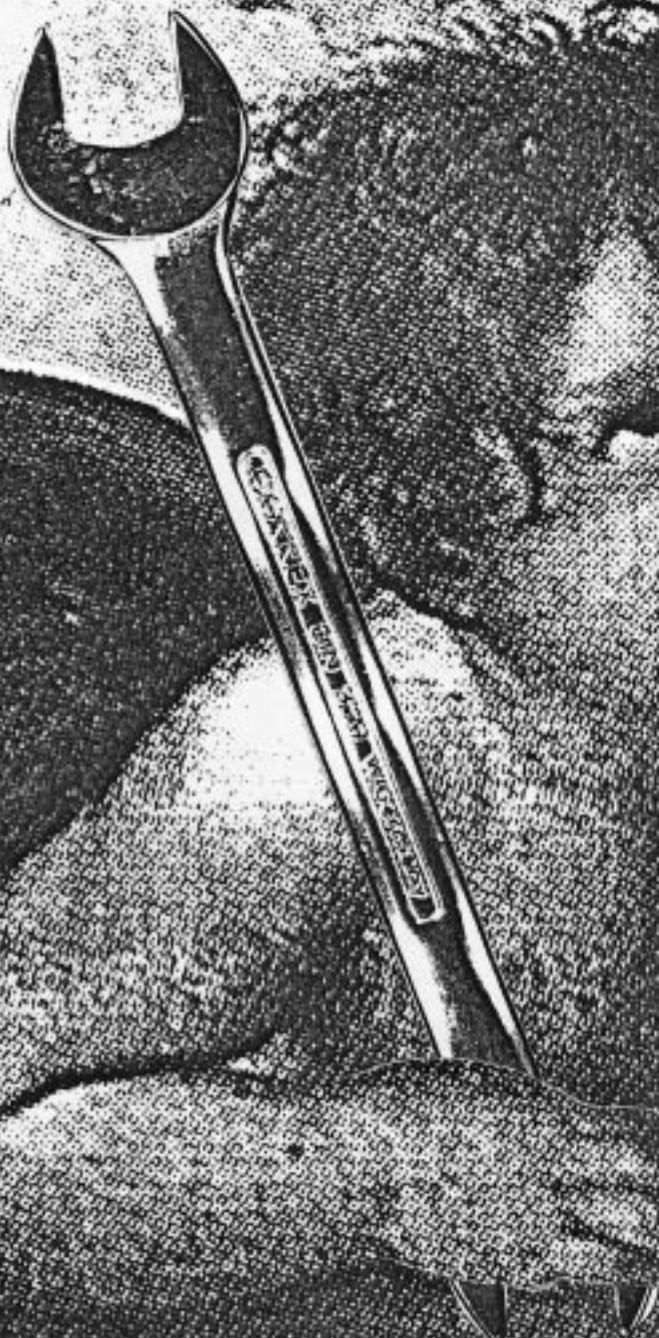
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CEDEFOP assists the European Commission in encouraging, at Community level, the promotion and development of vocational education and training, through exchanges of information and the comparison of experience on issues of common interest to the Member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

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

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

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

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Online management and Internet applications will certainly play a key role (...) in the coming years. The creation of new jobs through the development of new markets, new products and services are the vital demands arising from global change, but they are not self-propelling processes.

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Not least as a result of European research in the field of vocational training, there is now a considerable fund of both explicit and implicit knowledge of supranational research and research cooperation. Apart from some preliminary work on the subject, however, this knowledge has not yet been documented in any detail or in a comparative form.

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New pressures for company training



Jacques Delcourt

Emeritus Professor of Sociology, Institute of Science and Labour, Université Catholique de Louvain, Belgium

Introduction

The considerations set out here are part of a follow-up to a set of reports on 47 European enterprises, the aim of which was to identify the processes whereby competence is generated and developed within companies (Delcourt and Méhaut, 1993). They focused on enterprises or organizational units which had recently experienced profound changes in work organization.

The research aimed first and foremost at singling out the new skills used in connection with new work organization, irrespective of whether it was introduced in response to technological change. Further aims were to identify explicit or non-explicit training efforts supporting the introduction of the new organizational formats and to analyse the possible impact of the new production methods on training.

Towards a definition and classification of the new forms of work organization

The notion of "new forms of work organization" can be classified into two categories.

The first covers the forms of organization which accompany a transition from small to larger-scale production. In such cases, the risk that craftsmen will experience deskilling as their jobs become less skill-intensive is high, but everything depends on the degree of mechanization, automation and computerization entailed by the change in the scale of production.

The second category covers enterprises, establishments or workshops in which the transition is from large-scale production

and a quest for economies of scale, to specialized, differentiated production carried out on the basis of client specifications and with a customer-service orientation. There, more attention is paid to "economies of range" than to economies of scale, with companies trying to improve product quality, broaden the range of products and services offered, and develop and introduce flexible technologies. By extension, they change not only their systems of production and organization but also the internal and external information and communication systems essential to running complex networks of relations in a coordinated and integrated manner. This phenomenon is referred to as the development of networking enterprises.

Today, many enterprises are having to produce to specifications, to manufacture products with a range of options, or to meet the very different demands and preferences of a large number of categories of clients and business partners. Modern enterprises thus need to opt for customized, specialized, flexible and variable production.

Explanations for the emergence of companies as learning organizations: the managerial viewpoint

Competition and corporate and work organization

Whatever changes are identifiable in organizations, all can be traced back to the increasing pressure of competition.

Enterprises in the most advanced countries are having to take on board more

A switch, for whatever reasons, to new forms of work and company organization inevitably has implications for relations among workers, and between workers and management; it likewise has implications for the skills required of both, for the processes whereby new skills are generated and appropriated, for training content and training processes, and for the issues and procedures of individual and collective negotiation.



“The impact of competition on products and processes means that the company must cope with both the constraints of the market and the technological advances affecting commercial and industrial operations. Under these conditions, it has constantly to integrate the industrial logic which defines the production process with the commercial logic looking to respond to the market.”

sophisticated production processes and products. Competition is causing them to constantly diversify and update their product range, to raise product quality and reliability, to shorten production times and enhance customer services.

Competition also affects production processes as enterprises search for greater reliability and flexibility in complex technological processes, and to integrate procurement, production, marketing design, research and development, and human resource development functions.

The impact of competition on products and processes means that the company must cope with both the constraints of the market and the technological advances affecting commercial and industrial operations. Under these conditions, it has constantly to integrate the industrial logic which defines the production process with the commercial logic looking to respond to the market.

The interplay between these two sets of logic results in a de-compartmentalization: on the one hand within the company and on the other in the company's external relations.

Within the company, efforts are made to improve cooperation between the production units and the research, development and design departments, as well as with the purchasing services upstream and the supply services. Cooperation is also encouraged with marketing departments and with all operations in direct contact with clients. With the development of integrated communication systems, the enterprise is increasingly taking on the shape of a network, in which the workers are simultaneously the clients and the suppliers of their colleagues within the enterprise. This results in a trend towards greater solidarity within the organization and the development of work formats based on cooperation (Zarifian, 1993). This cooperative type of work is further strengthened by techniques which, as in the case of quality circles, aim to activate and socialize know-how and increase worker involvement by pushing a brand image or a new corporate culture.

But, although horizontal relations entail horizontal forms of control, it does not

necessarily prevent new management systems from strengthening the planning and budgeting department by giving it a rationalizing and priority-setting authority and thus creating an organizational structure which is again prey to a hierarchical and functional logic (Zarifian, 1993, op. cit.). In real life, evolution is never monolinear.

The second de-compartmentalization effect is found in the company's external relations. It takes place between the various parts of the company and its suppliers and distributors. The new forms of organization are also characterized by an ever wider range of external relations. Keen to become integrated into their environment, companies are restructuring into individual profit centres or units resembling small enterprises and making increasing use of subcontractors. Keen to produce on a just-in-time basis, companies are establishing networks held together by contracting arrangements. The coordination of internal and external operations is made easier by the information and communication systems which integrate the networks.

But cooperation agreements between enterprises are not limited to matters of production: they may also concern complex operations to create new products, implement new processes or develop joint research activities.

The impact of competition on innovation and training

In today's advanced economies, competition usually hinges on: an understanding of product quality, reliability and diversity; a quest for worker adaptability and flexibility; the “reprogrammability” of hardware; and a search for an optimally fine-tuned mix of the logics of commerce and industry through organizational integration made easier by information technology networks.

But the effect of competition continues. Competition has an impact on the pace of innovation and the time needed to finalize new products, new models, and new production processes. It triggers processes which aim for constant innovation and the twinning of commercial and technological innovation. This in turn



implies a functional de-compartmentalization which breaks down the traditional barriers between product development, process development and human resource development.

Proceeding from this assumption, experts speak of enterprises as learning organizations, a notion which they spontaneously associate with that of the enterprise as an innovating organization.

An enterprise which is also a learning organization can be said to have the following characteristic features:

- versatility on the part of the workforce;
- greater importance attached to horizontal relations than hierarchical ones;
- networking and the removal of barriers between shop floor and office functions;
- greater worker participation and responsibility for proper work execution;
- a quest for innovation as opposed to repetition.

An enterprise is not and will not remain a learning organization unless it is constantly innovative and succeeds in instilling in its workforce an ability to accept change. It must offer its workers a chance to contribute, on a permanent basis, to corporate change and development. It can only respond adequately to the imperatives of innovation and training by arranging for recurrent and alternating sequences of learning and training (Villeva, 1994).

Spreading an entrepreneurial spirit throughout the organization implies that the company must concede time to individuals and groups and be prepared to acknowledge that these have a right to make mistakes. Furthermore it calls for the development of managerial and transactional skills among the workforce, these being the foundation which will enable workers to respond to the new demands in terms of communication (Villeva, op. cit.).

Competition thus expands the challenge, making it not just a matter of disseminat-

ing existing expertise but also one of generating new expertise. This cannot be done without setting up new relations between work and organization, between innovation, training and competences. There can be no doubt that the new forms of corporate and work organization which result from the twinning of production process and innovation call for new forms of generating and disseminating knowledge and skills. Just-in-time applies not only to production and innovation but also to skills and thus to training and learning. In an innovating enterprise, the knowledge generation and dissemination functions acquire a strategic importance.

Beyond total quality: the quest for a total innovation strategy

To remain a learning organization the company has to become permanently innovative. But what exactly is meant by innovation? When considering this it is helpful to refer to the distinction between "minor innovation" and "major innovation" (Zarifian, op. cit.).

Minor innovation, or improving innovation, is found within the context of the organization's current operations and aims to improve what is in place. Major innovation is radical, calling the status quo into question. It results from workers scrutinizing their daily work routines. Major innovation introduces new technologies, products and ways of working which presupposes that individuals and groups are given the possibility of calling into question the aims, the resource allocations, the standards and the hypotheses which underpin the operations or services with which they are entrusted. A clash between these can be avoided only by judiciously juxtaposing the adaptational innovation, which aims to improve on what is already in place, and the radical innovation which calls the status quo into question. This concern explains the setting up of transversal groups: project groups, progress groups or development groups to organize cooperation, not only between the shop floor and the associated service units but also with the traditional repositories of the knowledge and ability to design and innovate (Zarifian, op. cit.).

To take this one step further, enterprises cannot be permanently innovative unless

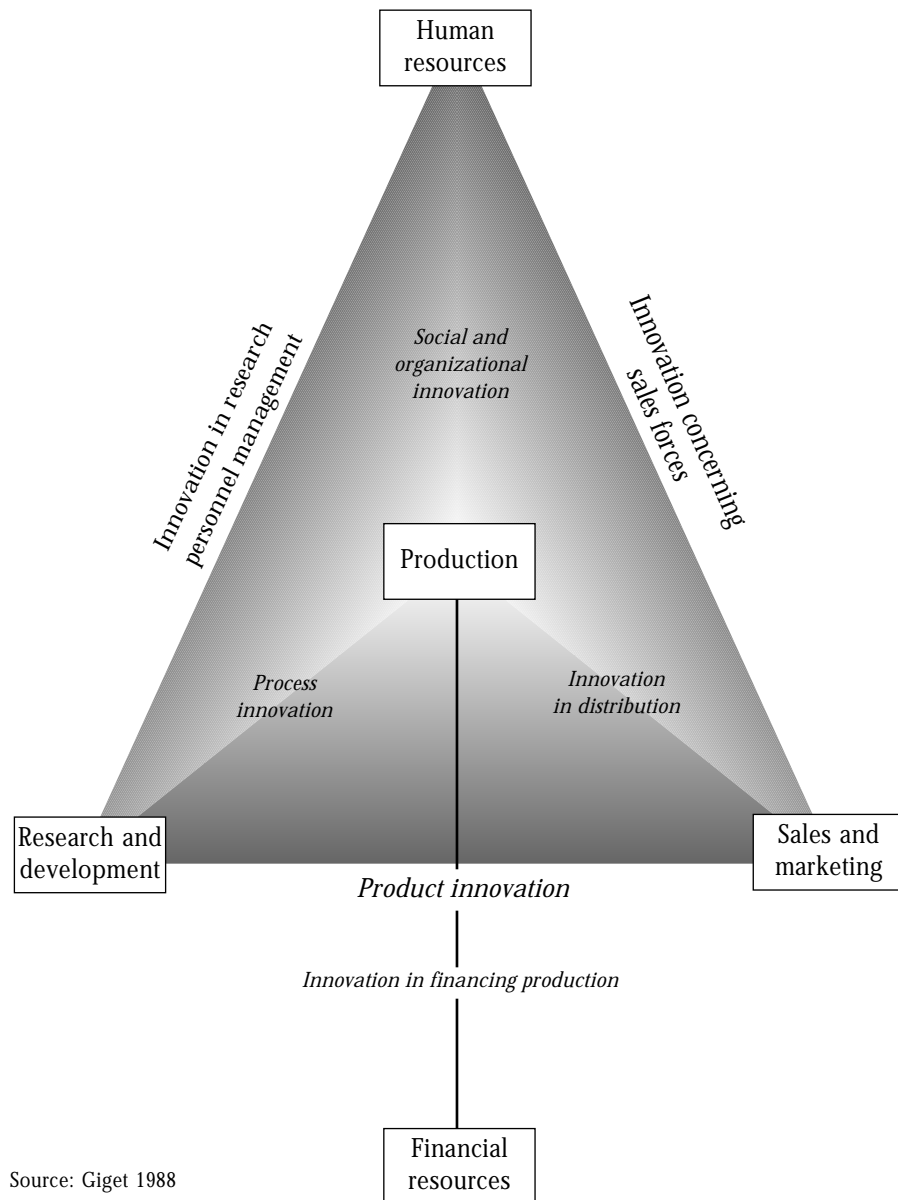
"Competition (...) expands the challenge, making it not just a matter of disseminating existing expertise but also one of generating new expertise. This cannot be done without setting up new relations between work and organization, between innovation, training and competences."

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**Table 1:
The total innovation diamond**



Source: Giget 1988

these cross-function connections, that the company can find the types of innovation which it should develop and collate (Larue de Tournemine, 1991).

The new individual and collective competences required

New forms of corporate and work organization introduced in response to new demands in terms of production and innovation necessitate not only a honing of individual skills but also the development of collective skills.

In companies which are integrating their structures, collective competences are gradually becoming more important than individual competences. This was undoubtedly already the case when the pyramids were built, but today, the process dimension and its interdependencies are becoming more prominent and company performance is increasingly dependent on collective abilities. Collective intelligence enters the stage whenever the application of a new competence implies the involvement of more than one person (Koenig, 1993). It manifests itself in real terms in the ability of a group to define and solve their problems collectively. Clearly it does not exclude individual abilities to formalize and systematize knowledge and skills, but this collective intellectual ability develops by interfacing different bodies of knowledge and through new contacts. A learning and innovating organization is therefore also an organization which is capable of generating rules for the development of collective intelligence (Villevall, op. cit.).

The intelligence of groups of workers may indeed be very difficult to define and describe. Nonetheless, productive activity today requires that action compatibility is organized right to the end of an ever lengthening chain of persons and entities involved directly or indirectly. This finely tuned coordination and the imperatives of just-in-time presuppose that the "team members" have a common understanding of the situation, an understanding shared by all who are required to participate in achieving the goal or solving the problem at issue (Zarifian, op. cit.).

Under these new production conditions, raising corporate productivity and profit-

they commit themselves to the systems and strategies of total innovation illustrated by the "total innovation diamond" (see table 1) (Giget, 1988). Innovation emerges along the communication axes between the various corporate functions, via the links which are established between research and development, production, marketing, financial management and, of course, human resource development. It is here, along these axes and



ability is no longer only a matter of fine-tuning man and machine but also a matter of better tuning relations between individuals, work groups, shop floor areas and support services and between the development and production functions. The “new productivity” is based on individuals, on interpersonal relations and on relations between the individual and the organization. Many enterprises are now moving away from vertical coordination and hierarchical forms of control towards horizontal coordination and control forms which are interpersonal but perhaps also more ideological in character (Delcourt, 1994).

The impact of the new forms of work organization on workers' skills

Little by little, under the combined pressures of the market and competition - and despite whatever the devotees of the deskilling theory might believe - the most advanced societies are already, but without their having noticed it - becoming highly skilled societies. Imperceptibly they are moving away from having their production and economy based on low skill levels in the direction of sophisticated production and manufacturing operations producing highly complex products incorporating an ever greater input of science, technology and culture, production operations which are based on state-of-the-art technologies, including information and communication technologies, and function via ever more closely-meshed corporate networks.

This transition from a low-skill to a high-skill economy can be explained by the increasing scientific and technological complexity which is inherent in the processes used for producing goods and services. But also by increasing external complexities resulting from the speed-up in terms of innovation, globalization and market fragmentation, by the proliferation of national standards and Community regulations, and by the segmentation of clienteles (Gadrey, 1992). This in turn explains the importance of more abstract knowledge.

Table 2 lists the effects of corporate redeployment and restructuring on work organization and the skills and competences required of the workforce.

The reduction in the number of low-skilled workers entailed by changes in work organization at shop floor and office level cannot be explained merely by the changes in product markets or the changes in technologies and enterprise network structures.

A further explanation, and one which has not been adequately discussed, is the fact that young people entering the labour market today have higher standards of education and competence, even though a higher level of education does not necessarily mean that the person concerned is appropriately qualified. But better educated people are generally more demanding regarding job content and more motivated to look for a job where they can learn more and which is in line with their superior knowledge and enhanced capacities for reflection, innovation and continued learning. Better trained workers want jobs which give them possibilities of accumulating new competences throughout their career and working life.

Schooling is not the only factor which fuels young people's aspirations for better working conditions and challenging job content. Also to be considered here are the abilities and competences which they acquire from the various activities in which they engage outside work, from the information and experience which they accumulate within the framework of their life away from the workplace, from their leisure activities, their hobbies, their travel or the goods and services which they use.

Impact of the new organizational structures on forms of constraint, consensus and conflict

There can be no doubt that the new forms of company and work organization have numerous implications for the training and qualification structures of the workforce, for the nature and methods of worker participation, for the mechanisms of stimulation, constraint and control set up by employers and, by extension, for the social relationships surrounding production and for the nature of social conflicts.

“The ‘new productivity’ is based on individuals, on interpersonal relations and on relations between the individual and the organization.”



Table 2:
Impact of new forms of work organization on workers' skills

Hierarchical organization of work	Work organization starts with the workers
Imposed goals, limited responsibility	Participation in project conceptualization
Predefined posts	Flexibility in terms of activities and roles
Limited understanding of overall work process	Understanding of the entire work process
Fragmented, specialized work, traditional technologies	Complex work with horizontal and vertical enrichment; new, computer-aided technologies
Management of product flows within a stable environment	Management of information flows within a changing environment
Work based on physical force applied to materials or in handling objects	Work based on information, intellectual work; transmission of information
Physical contact with the product or material	Contact with the product or material via media
Manual skill, dexterity and speed	Intellectual speed in terms of perception, reaction and coordination
Management of routine, familiar situations and of foreseeable problems	Management on a case-by-case basis in unfamiliar and non-routine situations requiring accumulation of experience
Predominance of skilled, specialized manual workers	Predominance of skilled workers, technicians, engineers and management staff
Work carried out to order and specification	Work requiring autonomy, initiative, responsibility and creativity
Supervised work	Self-monitored work
Dislocation of thought and action	Integrated thought and action, problem-solving
Heavy work, sometimes dangerous and dirty	Predominance of intellectual work in situations of stress
Fixed working hours and work schedules	Autonomy and flexibility in work timing and scheduling
Individuals adapt to machine requirements	Adaptation to meet situational and relational requirements
Homogeneous skill profiles and narrow fields of competence	Heterogeneous skills, diverse range of competences, including relational skills
Skilled worker substitution possible by sourcing from the external market	Specific, personal competences, mobility within the company
Initial vocational training plus experience gained on the job	Initial training, then continuing or sequenced training: implicit and explicit, formal and informal
Rigid occupational classifications based on skill and experience	Classifications linked to adaptability and ability to assimilate new knowledge
Remuneration linked to output and productivity	Remuneration linked to risks and problems to be overcome and goals achieved
Low degree of self-fulfilment	Personal investment, emphasis on self-fulfilment
Unions structured by sector and class	Occupational and company unions



It can be shown, for example, how the new forms of work organization will generate new ways of control, this despite their flexibility and the level of autonomy and responsibility they bestow on the worker; it can also be shown how the commitments made to continuing training, which originally seem to open up opportunities, will ultimately become an unavoidable constraint for workers, especially if they want to learn something other than what is required or in a manner different from that intended by the employer. Finally, the new forms of organization and of skill acquisition through learning or training are not necessarily neutral from the ideological viewpoint. To begin with they could obscure power relationships within the enterprise and the economic system as a whole. In the longer term the outcome might be violent clashes.

Instilling a customer-service vision into corporate reorganization as a function of competition

During the process of organizational restructuring, the imperatives of the market seem to be becoming more important than the regulatory mechanisms of organization and bureaucracy. From a production system designed and commanded from the top and pushed by R&D, planning and organization, we are moving towards a production system pulled by the market. Exposed to competition and market forces, enterprises are increasingly focusing their attention on product quality and reliability, product range diversification and innovation, meeting deadlines, after-sales service and customer or user satisfaction. In response, they are developing the interfaces needed to solve the problems with their clients and business partners. Increasing numbers are working in sales, after-sales service and research to fine-tune supply and demand. Convinced of the importance of this customer-service dimension, enterprises are trying to make customer service a matter of concern to all parties with which they have dealings. Many companies are organizing their own market research, to establish the quality of the service they render. From the worker's viewpoint, internal control is backed up and replicated by control by the customer, the user, or the order-placing business partner.

Influenced by this customer-service vision, companies are restructuring on the basis of product lines, constantly seeking to improve relations with their client groups, whom they try to treat separately and differently on the basis of their respective needs. Belgacom, the Belgian telecommunications company, for example, recently restructured by making a clearer distinction between its clientele - individuals, small and medium enterprises and large corporate accounts.

In these new forms of organization, the mechanisms for controlling work, work quality, and the worker are undoubtedly less physical and hierarchical than in the past, but they are perhaps more subtle. Rather than imposing rules, the idea is to develop the individual's capacity for self-discipline and self-monitoring. Imbued with a sense of responsibility towards markets and clients, modern enterprises instil a customer-service orientation in their workforce and entrust them with responsibility for total quality. For example, at Samsonite workers are asked to record their name, and thus their pride and competence, in the luggage items they have produced.

A major part of training operations in these restructured companies are geared to responding to the imperatives of commerce. Enterprises are endeavouring to develop in their workforces a sense of market, consumerist ethics. The "corporate culture" is then redefined to emphasize service to the customer or business partner. Having realized the importance of market logics and commercial imperatives, workers feel less dominated by the power of capital than by the sovereign will of the consumer. It is here, in the context of this confrontation with the market and the consumer, that one sees the emergence of that holy alliance needed between employer and workforce within the company.

This customer-service vision is not limited to external relations. Internal relations are made to resemble the market. Relations of the "client-supplier" type - creating "quasi-markets" - are becoming increasingly common within companies. These relations make it possible to cut back hierarchical control exercised by foremen. They introduce a system of re-

"A major part of training operations in these restructured companies are geared to responding to the imperatives of commerce. Enterprises are endeavouring to develop in their workforces a sense of market, consumerist ethics. The 'corporate culture' is then redefined to emphasize service to the customer or business partner."



“(...) not all standards are set by legislation (...) A number of quality and production standards are imposed by order-placing business partners (...) Contractual arrangements sometimes go as far as inspecting workforce training and certification procedures, even the training personnel themselves (...)”

reciprocal control among the workers who now reprimand their fellow-workers for late delivery of components or quality defects in the goods produced upstream.

From the trade union viewpoint, internalizing the ethics of the market and the idea of an organization being totally in the service of clients and order-placing business partners is instrumental in developing a form of consensus within the company, the customer-service mentality obscures conflicts of interests between workers, management and shareholders.

A new training imperative - the proliferation of standards and controls

Additional training and participation opportunities offered by employers help pave the way for consensus, but training and participation are not simply a matter of recompense for workers who subscribe to this new consensus vision. They can also operate as constraints. There are two different readings possible of a corporate commitment to promoting workforce competence, training and participation: one in terms of the right to training, the other in terms of constraint and obligation.

The vision of a company based on consensus rather than constraint seems naive to those who analyse the constraints which companies and workers are facing in the wake of the proliferation of specifications on product quality, safe packaging, etc. and of regulatory requirements in terms of health and safety in production and transport.

For those who maintain their distance to this ideology of consensus, companies' efforts to train their workers and become learning organizations can be traced back primarily to ISO standards and the plethora of other standards to which companies are required to operate. These standards concern the whole spectrum of industry and services, but are particularly onerous in sectors such as chemicals, pharmaceuticals, automotive engineering and aviation.

But not all standards are set by legislation and regulation at national or European level. A number of quality and production standards are imposed by order-

placing business partners who do not hesitate to subject the companies with which they contract to tests, inspections and audits concerning not only product quality, but also the basic material inputs, process hygiene and safety, reliability, quality, environmental performance and so on.

In some cases this control extends as far as the skills and reliability of the workers in charge of checking the quality of the components which they use, produce or deliver. Contractual arrangements sometimes go as far as inspecting workforce training and certification procedures, even the training personnel themselves, as is the case at Mölnlycke, a Swedish company operating in Belgium and well known for its consumer hygiene products and medical supplies. Others even provide their suppliers with training programmes and sometimes even the training. Some go as far as assuming responsibility for certifying qualifications. Seen against these various external inputs and controls, the hierarchical power of the supplier or subcontracted company seems to wane. It is the principal who, by imposing its own quality and skill standards on the supplier or sub-contractor from outside, seems to exert the real power.

Under such conditions, it is clear that part of a company's formal and informal training operations are dedicated to adopting standards issued by official authorities and the organizations for whom the company provides a product or service.

Training constraints in lean or specialized, just-in-time production systems

Many new organizations work on the just-in-time principle, this with a view to reducing and respecting delivery times by shortening cycles and thus lowering the cost of production and warehousing. The twofold requirement of optimizing use of machinery and of minimizing stocks results in a need to track down every possible disruption, whatever its cause. Better synchronized flows in terms of production and information tend to break down the boundaries between functions and redefine the composition of individual tasks. Under such circumstances, competence, versatility and flexibility become



the key attributes required of workers who in turn have to agree to upgrade their skills.

Whether or not intended, just-in-time systems introduce a form of moral control among the workers, who ultimately find themselves organizing their own search for faults, and problems for which the culprit has to be identified. Quality circles represent a forum for discussing and clearing up such matters.

Producing a wider range of products on a just-in-time basis and in shorter cycles presupposes that machinery and tools are rapidly adjusted to respond to fluctuations in demand. The workers' energies are focused on the times needed for reprogramming production cycles, on innovation potentials, on the time and cost of product design and prototyping and of redesigning production processes, and on the development of new marketing media. Under such circumstances, an organization can only be evulative and innovative if it simultaneously develops individual and collective competence. Seen from this viewpoint, training is no longer necessarily a preference or a choice for the worker but a constraint.

The increasing need for versatility and reliability

The transition from a mass production economy to an economy based on product diversification calls for flexible and reprogrammable production systems and, ultimately, a desegregation of functions, shorter hierarchy lines, and greater versatility and reliability on the part of the workers.

Generally speaking, this versatility and reliability can be nurtured within the framework of autonomous work groups, single-cell or multi-cell units where workers are trained to do more than ensure that machinery is operating properly: they learn to assume responsibility for maintenance and minor repair operations which helps avoid costly standstills. Workers are also responsible for checking quality, locating faults, and writing and encoding information required by management: this is one way of "mopping up" the time freed up by enhanced machine performance.

Apart from the versatility resulting from variably profiled jobs within a work group, companies themselves are moving away from, separate function-related services and the segmentation of shop floors to production lines specific to a particular product or clientele. These integrated production systems and their various constituent units bring together the competence potential required for sourcing, production, marketing, and even finance and innovation. The teams or "business units" are put together in a manner which makes them multi-functional, multi-skilled, multi-occupational and interdisciplinary, and each individual within such a unit is required to reprofile their skills in the light of those held by other members of the unit.

The return to forms of on-the-job learning

Paradoxically, and at least by appearances, new forms of organization are bringing about a return to forms of on-the-job learning, even if, at the same time, they call for higher standards of basic training and a more thorough understanding of theory.

With the economic crisis and unemployment in Europe, people are criticizing the gap between school education and training and the skills required for obtaining work, undoubtedly because school-based vocational training systems operate in isolation from contemporary economic, technological and organizational change. Possible exceptions include Germany and the UK, where continuing technical and vocational training is largely dispensed within companies.

The widening gap between training and employment can be explained by the fact that the aptitudes attested to by certificates are not enough to develop skills at work, mainly because of the profound differences between the socialisation conditions at school and within a company. At school, people are educated in peer groups cut off from real-life. Activities there develop without any confrontation with economic realities and are devoid of any apparent social utility. The right to make a mistake is readily accepted because mistakes made at school incur no real danger and have no meaningful impact on individuals.

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"The widening gap between training and employment can be explained by the fact that the aptitudes attested to by certificates are not enough to develop skills at work, mainly because of the profound differences between the socialisation conditions at school and within a company."



“The processes and conditions for generating and conveying knowledge are today becoming ever less dissociable from the processes and conditions of production.”

“Nowadays, ‘made-to-measure’ training with variable geometry is on offer alongside the traditional programmes, aiming to take greater account of the needs and aspirations of individuals, of the desired versatility, and of the problems to be solved on the job.”

“These developments in the direction of more flexibility, adaptability and synchronized learning and training (...) partly explain the difficulties encountered in distinguishing between formal and informal training.”

But the main reasons for this gap can be found in the drastic changes taking place in companies and particularly in the diversity and complexity of both industrial and service activities, which are themselves becoming increasingly integrated into systems. Good illustrations of this “solidarisation” of functions can be found in the process industries, such as chemicals, pharmaceuticals, paper production etc., and in all the leading-edge industries based on science and advanced technology. This integration of functions and systems, now a characteristic feature of modern organizations, is very difficult to reproduce or simulate in a classroom.

The versatility expected at work is thus calling into question the ways in which knowledge and skills are conveyed and assimilated, ways far removed from machine interplay and the interdependencies existing between coordinated ensembles of tasks or functions. Under these circumstances, the very highest levels of professionalism and worker interaction can be attained only within enterprises, within production units. The processes and conditions for generating and conveying knowledge are today becoming ever less dissociable from the processes and conditions of production.

Towards more flexibility in continuing training for workers

In an effort to develop worker versatility and competence, modern organizations are designing various arrangements involving a mix of training both during and outside working hours and both inside and outside the enterprise. All sorts of combinations and integration possibilities now exist for training time spent at and outside work, this even to the extent that a worker sometimes finds it difficult to recall whether they learnt a particular skill at work or via a course of formal training.

If called upon to pinpoint what it is about the present that contrasts most strongly with the past in terms of continuing training, one would undoubtedly have to single out the greater flexibility of training systems today.

Traditionally, the training available, whether inside or outside enterprises, has been provided in the form of formal

courses designed on the basis of defined learning goals, usually relating to a particular discipline (at least in traditional, formal education and training) and dispensed using predefined methods and sequences of exercises. In very many cases, training is still provided in the form of programmes of fixed duration, intended for more or less homogeneous learner groups and run to a certain rhythm which is paced by standardized learning sequences. Without denying the continued success of these often tried and tested programmes, changes are taking place which lean heavily in the direction of more flexibility in training to reflect what is happening with the new forms of organization.

Nowadays, “made-to-measure” training with variable geometry is on offer alongside the traditional programmes, aiming to take greater account of the needs and aspirations of individuals, of the desired versatility, and of the problems to be solved on the job. These flexible programmes are more focused on the client, be it an enterprise, a service, a sector of activity, a production unit, groups of professionals or craftsmen, or even cross-sectional groups. As a result of this trend we are seeing the development of means of analysing companies’ organizational strengths and shortcomings, the refinement of situational evaluation techniques, the development of competence audits, and acknowledgment of the individual’s capacity to be trained or to train themselves without a trainer in areas and places set aside for independent learning. Further spin-offs include the introduction of modular training programmes and credit schemes which involve alternance between theory instruction and learning by doing or by using, and a proliferation of techniques for evaluating training sessions and session moderators or trainers (Caspar and Millet, 1993; Fragnière, 1991).

These developments in the direction of more flexibility, adaptability and synchronized learning and training to keep pace with and reflect changes in production and products partly explain the difficulties encountered in distinguishing between formal and informal training. As organizations become more flexible, formal and informal training are seemingly becoming more integrated, as indissociable



even as the two sides of a coin. The two trends clearly apparent in company practice, namely formalization of the informal and informalization of the formal, are making this distinction virtually inoperable.

Today, therefore, there is a need to fine-tune operations to align training and work on the one hand and production and innovation on the other. But such synchronizing and fine-tuning presuppose that workplaces and enterprises are open to those who want to train or need to train: hence the necessity of making arrangements for funding or co-funding.

Finally, this greater flexibility in training is not without implications for certification, a matter which cannot, these days,

rest solely in the hands of official authorities whose training and certification policies are developed separately, with no great concern for or effort towards coordination. Today, a vast body of knowledge and skills are acquired outside the regular transmission and certification mechanisms, in real-life work situations and often in a manner which seems uncoordinated or even anarchical when compared with the procedures of formal training. There is therefore an urgent need (at least from the viewpoint of workers) to move away from a formal issuing system for certificates and diplomas and to press ahead in the direction of "academies of competence" (Grefte, 1992) which are entitled to issue personal "training passports" listing all training undergone and all competences acquired.

"(...) this greater flexibility in training is not without implications for certification, a matter which cannot, today, rest solely in the hands of official authorities whose training and certification policies are developed separately, with no great concern for or effort towards coordination."

Bibliography

Caspar P. and Millet J.-G., (1993): *Apprécier et valoriser les hommes, réflexions et pratiques*, Editions Liaisons, Paris, 290 p.

Delcourt J. et Méhaut P., (November 1993): *Le rôle de l'entreprise dans la production des qualifications*, Synthesis report (draft) of national studies, CEDEFOP, Berlin, 149 p.

Delcourt J., (1994): "Nouvelles structures organisationnelles: une chance pour les travailleurs ou un nouveau mode de contrôle?" *Journal de réflexion sur l'informatique*, No. 29, pp. 13-19.

Gadrey J., (1992): *L'économie des services*, La découverte, Paris, 124 p.

Giget M., (1988): *La conduite de la réflexion et de l'action stratégique dans l'entreprise*, Euroconsult

Grefte X., (1992): *Sociétés postindustrielles et redéveloppement*, Hachette, Pluriel, Paris, 304 p.

Koenig G., (January-February 1994): "L'apprentissage organisationnel: repérage des lieux", *Revue française de gestion*, pp. 76-83.

Larue de Tournemine R., (1991): *Stratégies technologiques et processus d'innovation*, Les Editions d'organisation, Paris, 269 p.

Villeval M.-C., (February 1994): "Organisation qualifiante et apprentissage par interaction", *Université Lumière Lyon 2, Economie des Changements Technologiques*, 23 p.

Zarifian P., (1993): *Quels modèles d'organisation pour l'industrie européenne? - L'émergence de la firme coopératrice*, Editions l'Harmattan, Paris, 288 p.



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The term work-related learning is used here to denote intervention by an instructor to design workplaces and working methods. Work-related learning brings with it a number of economic and pedagogical advantages as far as training is concerned. In its different forms, it is distinguished from conventional continuing training because it is multi-functional, serving not only to build skills, but also as an instrument for personal and organisational development. Further development of work-related learning requires greater clarity of how it and on-the-job functional learning relate to qualifications and skills on the one hand and their contribution to company development on the other.

The risks and opportunities of learning on the job

Trends in work and the need to learn

The workplace as a place of learning and the concept of on-the-job learning are receiving growing attention, largely due to changes in the nature of work which create both a quantitative and a qualitative need to learn that cannot be adequately satisfied outside working hours. While providing greater scope for action and planning, post-Taylorist working structures also call for additional knowledge and skills to ensure the flexibility necessary for competitive production concepts - high-tech production, customer-orientation, short innovation cycles and the like - and its further enhancement through continuous learning (see table 1). Slogans such as "lean organization", "the learning enterprise" and "Total Quality Management" similarly have a number of implications as regards the need to learn.

Lean organizations make for broader responsibilities and give rise to an additional need to learn on the part of employees. The trend towards flatter hierarchies in lean organizations results in tasks being combined. Qualitatively different activities such as planning, execution, control and allocation of resources are linked together and entrusted either to individuals or to small groups. This creates a need to learn that is greater from both the qualitative and quantitative point of view. The introduction of group working and the use of project groups typical of lean organizations call for cooperation and communication between employees. In addition to specialist occupational skills this generates a need for broader core skills such as the ability to work with others, methodical working, and problem-solving skills.

The fact that lean organizations make for a growing need to learn does not, however, necessarily mean that the firms concerned invariably facilitate the learning processes involved. A whole series of indicators testify to learning being hampered because of the necessity for more intensive working, which means less time for learning and smaller workforces. Such obstacles to learning on the job result, for example, from:

- the growing trend to outsource certain tasks which has the effect not only of reducing the content of people's work and opportunities for learning but also of impeding the flow of information and cooperation;
- the just-in-time principle which reduces, if not wholly eliminates, preparation and hence also learning time;
- the growing use of teleworking which excludes a section of the workforce from informal communication and learning processes;
- the distinction made between core and peripheral workforces which generally assures core workers priority in access to training facilities.

The noticeable shift in the age and qualification structure of the workforce also enhances interest in continuing training. A longer working life means that innovation can no longer wait for the next generation to come along but will increasingly involve older workers. Training must therefore be specifically designed with the needs of older people in mind. And since their learning processes need cognitive and practical references, work-integrated learning and training methods are liable to be those most used. This will probably



also apply if in future the workforce is characterized by a larger proportion of well-trained people with higher educational qualifications.

Objectives and advantages of work-integrated learning

A number of educational and economic interests and objectives are bound up with and pursued in connection with work-integrated learning. The general intention is both educational and economic, namely rapid application of what has been learnt to cope with the growing volume of work and more stringent quality requirements.

Greater efficiency through more effective application

When work and learning are kept separate, difficulties can arise when an attempt is made to apply the knowledge and skills acquired in training courses in a practical work situation. This is especially the case when an individual has to try to do so with no further assistance from a skilled technician or trainer. Work-integrated learning, on the other hand, permits knowledge and skills to be acquired while they are actually being practised and exploited. This can help to avoid problems of putting theory into practice and a loss of efficiency through frustration, particularly when the subject-matter to be mastered is itself demanding, which is the case for a growing number of workers. Such familiar core skills as thinking and acting in context and planning, steering and controlling one's own work or the ability to think in the abstract and creativity, which previously tended to be confined to a few academic fields, have with the delayering of working structures now become relevant to almost every type of job. Developing such competences as well as the ability to build knowledge and skills on one's own account typical of learning organizations is not achieved by further training courses organized outside the firm, which merely serve to reinforce them. Motivated learning of this kind, the argument runs, needs to be rooted in the working structures themselves, which reflect the firm's corporate culture (Bergmann, 1996).

Table 1:
Trends in working conditions - implications for learning

Integration of tasks Flat hierarchy	Quantitative and qualitative increase of learning requirements
Group work	More co-operation and communication methodological and social competences
Outsourcing	Less contents-learning more difficult co-operation
Just-in-time	Reduced periods for learning
Teleworking	Less informal communication
Core workforce/peripheral workforce	Different forms to promote learning by employees
Changing age and qualification structure	Age-adjusted forms of furtherance of learning

Costs lower thanks to reduced release times

Firms expect further advantages from work-integrated learning in terms of improved efficiency because it solves the problem of applying theoretical knowledge in practice and because releasing employees to attend training courses outside the firm often poses problems for small and medium-sized firms especially.

A good two-fifths of firms (Weiss, 1994) have difficulty releasing employees to attend outside courses. Lean management, which reduces personnel, aggravates the problem further. Many firms therefore see the possibility of combining learning with work as a way out of the dilemma, especially since company restructuring frequently calls not just for the retraining of individual workers but of whole organizational units. Avoiding, or at least reducing, the need to release employees for training also does away with the need to pay compensation for loss of wages, which accounts for a very substantial 48% of continuing training costs (Grünwald and Moraal, 1996). How far external training costs in connection with work-integrated learning (for example for outside moderators or media) can be offset is a question that cannot at present be an-

“Work-integrated learning, on the other hand, permits knowledge and skills to be acquired while they are actually being practised and exploited.”



**Table 2:
Methods of work-related in-company training**

Traditional methods of instruction at the workplace	Shadowing 4-stage method; "show how/do" Analytical instruction
Action-based forms of in-company learning	Work-based projects Working with a written guide
Group-oriented, decentralized continuing training	Quality circles Lernstatt (≅ training workshop) "Learning islands" "Find out and demonstrate" Job rotation
Individual work-integrated continuing training	...using conventional methods - Induction - On-the-job training Self-training on the job with computer-assisted learning systems Tele-learning on the job

Source: Severing 1994

necessary peace and quiet is frequently not possible during working hours.

Improved access for the less skilled

Work-integrated learning has a number of advantages to offer for employees as well. Training is easier to come by than in the case of outside training courses, especially for specialists and those with no formal qualifications. Negative school experience, which often discourages those without formal qualifications from participating, is not a serious obstacle here. It would greatly benefit such employees if the skills obtained via work-integrated learning could be certified and used as credits towards the acquisition of generally recognized formal qualifications.

Forms of work-integrated learning (organized learning at the workplace)

Attempts so far to define and classify the different forms of on-the-job learning have not resulted in a uniform and generally accepted typology of learning methods. A wide variety of terms are used for learning on the job - including work-related learning, work-integrated learning, on-the-job training and learning by doing - and often synonymously. There is also a long list of subcategories and methods for on-the-job learning. A number of attempts have been made to put order into and categorize this multiplicity. Severing (1994) groups "Methods of work-related in-company training" under a number of different headings (see table 2)

The term work-related training is used here to denote *intervention by an instructor to design workplaces and working methods*. It is not left to chance to decide whether or to what extent workplaces are equipped so as to permit functional learning. Instead training plans and intervention by a trainer ensure that, with employees' learning abilities as the starting bases, progress is made towards acquiring the skills and competences needed for a particular job.

The Continuing Training Reporting System VI (BSW) of 1994 puts work-related training and its various subdivisions under the heading of informal continuing

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swered. Attempting to calculate the cost of work-integrated learning currently comes up against insurmountable difficulties of definition and recording and is therefore not considered worthwhile (BIBB/IES/IW, 1997).

Just-in-time and learning in leisure periods

Work-integrated learning has another important advantage from the point of view of employers in that it can be better tailored to their requirements in terms of time and content. This just-in-time function should also ensure greater employee motivation than the "training schemes for the masses" frequently offered by external training bodies. There is, therefore, much to indicate that more work-integrated learning can ensure greater learning continuity than sporadic external training courses. Another possible argument in favour of work-integrated learning from the employer's point of view could well be that more intensive on-the-job learning often results in the learning process being shifted to people's leisure time. This is the case, for example, with self-directed learning using various media, distance learning or supplementary phases of work-integrated learning for which the



vocational training, which also includes learning in one's leisure time. The BSW's results as regards informal training show that in 1994 52% of employed people in the 19 to 64 age group had used at least one of the "other forms of vocational training" mentioned in table 3 as a means of learning (BMBF, 1996).

The various categories of *informal vocational training* represent a mixture of methods which one may assume are aimed at triggering a learning effect. Carefully thought-out trainer intervention goes hand in hand with work organization and information measures. Functional learning through work is, however, not included. The findings show that traditional forms of further training tend to predominate while new pedagogically demanding concepts such as quality circles and the like are only relatively seldom mentioned.

The percentage of those taking part in informal vocational training is twice that of those attending training courses. The overall percentage of those benefiting from continuing vocational training is 60% because those attending training courses participate in other forms of training far more often than do those not attending courses. The separate breakdowns show that continuing training courses focus on people already in work. The differences in participation in informal training between the two groups are just as marked as in the case of course attendances. The results show among other things that:

- people employed in large firms take part in these types of informal training more than people in smaller firms, who traditionally tend to receive training from the firm on the job;
- there are considerable differences in the rates of participation between employees with a university degree and those with no vocational qualification;
- there are differences from one sector of industry and commerce to another but banks and insurance companies and the health sector head the attendance league for both formal and informal training courses.

The European FORCE survey on in-company training covered both continuing

Table 3:
Informal vocational training 1994
(Information provided by employees at that time)

Reading relevant books and trade journals	33 %
Self-teaching by the "watch and try" method	23 %
Short forms of instruction e.g.lectures and half-day seminars	23 %
Instruction/induction by fellow-workers, superiors, etc.	16 %
Trade fairs and congresses	15 %
Self-teaching using various media	11 %
Organized visits to other departments within the firm	8 %
Quality/workshop circles, training workshops, group work	4 %

Source: Infratest Burke Sozialforschung (BMBF 1996)

training in the strict sense of the term (courses and seminars) and in the broader sense - thus work-related training, information meetings and self-directed learning. Table 4 shows the percentages of participation by German firms and their employees in work-related training and its various subdivisions. The figures are based on a written survey of 9300 companies with more than ten employees.

These categories of work-integrated learning also involve a mix of in-service training and work organization elements. The figures quoted by firms largely confirm the replies given by employees in the BSW report. In other words, traditional methods of instruction and induction, in which instruction, information and continuing training can hardly be distinguished from one another, tend to predominate. New concepts such as job rotation and training workshops are comparatively rarely available and - with the exception of exchange programmes - also little used.

Characteristics of work-integrated learning

Multifunctional instruments for personal and organizational development

The different forms of work-integrated learning constitute a heterogeneous bundle. What they have in common is that each is designed to influence or shape the rela-

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Table 4:
Availability and use of subforms of work-related training

	Percentage of firms	Percentage of employees attending
Instruction at the workplace by superiors and skilled employees (coaching)	41 %	16 %
Induction to cope with technical/organizational changes or with the introduction of new technology	35 %	5 %
Induction of new employees	30 %	10 %
Exchange programmes with other firms	4 %	14 %
Job rotation	4 %	3 %
Training workshops	4 %	4 %
Quality circles	5 %	3 %
Self-directed learning using distance learning, audiovisual aids such as books and videos and computer-assisted learning	17 %	3 %

Source: Grünewald 1997

(...)work-integrated learning may contribute, for example, to the continuing improvement of work results, employee involvement, organizational development and customer orientation, and also provide a means of information and control for managers or of determining training needs at both individual and company level. These functions are not secondary to the skill-building function but constitute the true core of work-integrated learning.

“Once the multidimensional nature of the different forms of work-integrated learning is grasped, the difference between it and conventional types of training becomes clear.”

relationship between work and the learning process. This is true of instruction from fellow-workers just as much as for cooperation in quality circles. Also to be taken into account, however, is the fact that these measures and forms are in the main multifunctional - that is, they are not merely aids for in-service learning or skill-building but also serve as instruments for personal and organizational development and are essential elements of corporate culture.

It is especially this multifunctional aspect that distinguishes the different forms of work-integrated learning from conventional continuing training through courses and the like. Depending on a company's philosophy and management strategy, work-integrated learning may contribute, for example, to the continuing improvement of work results, employee involvement, organizational development and customer orientation, and also provide a means of information and control for managers or of determining training needs at both individual and company level.

These functions are not secondary to the skill-building function but constitute the true core of work-integrated learning.

Different profiles and functions

Each of the various forms of work-integrated learning has its own particular profile as regards the functions mentioned. A survey carried out in 500 firms in Germany to supplement the European FORCE survey confirmed this (Grünewald and Moraal 1996).

Let us take quality circles as an example. It is clear that this form of learning was originally conceived as a means of improving the quality of products and services. In German companies it was used chiefly as a means of encouraging greater cooperation and boosting employee motivation. According to the people questioned in the various firms, quality circles are nowadays regarded especially as a means of improving the results of work (97% agreement) and employee involvement (83%). Job rotation, on the other hand, apart from being seen as a means of improving the results of work (83% agreement) was regarded mainly as a form of behavioural training (69%) and organizational development (67%). Overall, however, there is still considerable uncertainty as to what purpose continuing training plays in the growth of competence within a firm and of organizational and corporate development, especially since it is not clear how its contribution to corporate development can be determined (Staudt and Meier 1996).

Little formalization

Once the multidimensional nature of the different forms of work-integrated learning is grasped, the difference between it and conventional types of training becomes clear. Those responsible for the practical aspect of training agree particularly on the fact that work-integrated learning serves to extend knowledge and skills and requires the fixing of learning objectives and the use of computerized or audiovisual aids, as well as the involvement of superiors as trainers. There is far less agreement as to whether these forms of learning presuppose that the skills needed are systematically determined beforehand, a skill-building plan drawn up in writing and



that specially trained instructors are used. In the view of many practitioners any feature tending to formalize learning as an independent form of skill acquisition runs counter to the whole idea of work-integrated learning (Grünewald 1997). Creating a system of certification for work-integrated learning would also fall into this category (BIBB/IES/IW 1997).

Working and learning

The different forms of work-integrated learning all lie somewhere between the two extremes of work and learning. We are struck by the fact that from the practical point of view there is no difficulty in classing individual measures more as learning or more as working. While self-directed learning is regarded more as learning and job rotation more as work, the opinions of those involved at the practical level in quality circles are not so clear. A good half see learning and just one half see work as the dominant factor (Grünewald and Moraal, 1996). How it is actually classified will probably depend on the company's own philosophy. If quality circles are seen more as a means of in-company training and of giving shape to working processes the emphasis will tend to be on the learning aspect, whereas if they are viewed more as a means of work organization which incidentally has a useful training function the work aspect will come to the fore.

Learning by doing (informal learning on the job)

Intentional and functional learning

Forms of work-integrated learning which, like job rotation, are viewed more as work, focus on changes in the workplace and general working conditions to foster the learning process, particularly from the behavioural point of view. Here the training aspect lies essentially in a calculated altering of work content and working processes and conditions. Such planned, organized and assisted learning on the job must be clearly distinguished from learning by doing, which unlike intentional learning is a functional learning process through which an individual passes when coping with the tasks and working conditions involved in his job.

Working structures encouraging or hindering learning

Research in the field of industrial psychology has repeatedly demonstrated that the nature of work and work structures as well as the working environment considerably influence the learnable content and the scope for learning offered by a job. Simply by making a job more demanding and with no need for training it is possible to increase the interest and motivation and influence the behaviour of the person concerned and, so long as they are not overstretched, can generate exactly the skill required. It has, for example, become clear that where Taylorist working structures exist and jobs are broken down into component parts that give workers little chance to influence and control their working conditions, motivation is low and developing skills almost impossible. Findings such as these have led industrial psychologists not only to analyse individual jobs from the point of view of learnable content but actually to produce guidelines for designing workplaces with a view to avoiding negative effects and enhancing more positive aspects (Münch, 1997).

When seeking to define or create structures to encourage learning one has to view matters in both a macroscopic and a microscopic perspective. The former relates to general conditions such as organizational structures, corporate culture, networking and cooperation between organizational units. The microscopic focus, on the other hand, takes in the potential learnability of tasks at each individual workplace (Bergmann, 1996). Conditions that encourage or hinder learning at the workplace can thus be described and demonstrated systematically (see for example the ideal training concept as outlined by Franke, 1982).

Group working

Group work in its various forms is one example of where learning by doing meets work-integrated learning as a form of training. In recent case-studies concerned with different forms of learning on the job the employers' representatives firmly classified group working as a form of work and not as a form of work-integrated learning. At the same time it became clear that the adoption of group

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“Work-integrated learning is almost always regarded as desirable from the educational point of view, yet broad areas of industry lack the basic conditions for putting it into effect. Taylorist working structures still persist and working and learning are largely kept separate.”

“In those areas where post-Taylorist work organization as outlined above has gained a foothold with all its consequences for the need to learn, the question that has to be asked in each case is whether lean organization, while providing scope for action and learning opportunities, does present an obstacle.”

“All this tends to strengthen the belief that the acquisition of skills and competence by on-the-job learning has so far remained a mere vision demanded by theory but not yet translated into practice.”

working calls for complex learning arrangements including, for example, self-teaching, induction, job rotation and instruction by fellow-workers and others with a high level of skills. Use is also frequently made of more formal continuing training such as induction seminars (BIBB/IES/IW 1997). Putting the organizational principles of group working into effect (delegating responsibility to the grassroots, combining a number of tasks, and making the group responsible for co-ordination of work and cooperation) will probably create a greater need for work-integrated learning since the greater demands in terms of learning can only be met by more time for learning and more teaching aids.

Risks and opportunities

The many advantages of work-integrated learning and learning by doing should not blind us to the fact that this form of learning is only possible subject to the fulfilment of certain preliminary requirements.

Taylorist work structures hinder realisation

Work-integrated learning is almost always regarded as desirable from the educational point of view, yet broad areas of industry lack the basic conditions for putting it into effect. Taylorist working structures still persist and working and learning are largely kept separate. There exists neither a holistic structure of tasks nor the desirable self-directed cooperative acquisition of knowledge and skills involving a company's entire workforce. Although the empirical results of the FORCE study show that almost two-fifths of firms with more than ten employees offer some form of work-based training, this tends usually to be the more traditional instruction and induction, which frequently take the form of “Do it this way” and is concerned more with training workers to perform repetitive operations. More demanding forms of learning such as job rotation, exchange programmes and quality circles are still confined to a relatively small group of large firms and have often not progressed beyond the experimental stage, subject to

the constant threat of what has been achieved being reversed again.

Outsourcing and continuing training

In those areas where post-Taylorist work organization as outlined above has gained a foothold with all its consequences for the need to learn, the question that has to be asked in each case is whether lean organization, while providing scope for action and learning opportunities, does present an obstacle. Increasing work intensity with its consequences for the time available to learn or outsourcing of work, which has the effect of reducing learnable content and preventing cooperation, pose a real threat to the advantages of work-integrated learning. Other dangers threaten when it is not simply specific jobs of work that are outsourced, but company training activity which is then bought in as required. In such cases training-assisted measures to encourage on-the-job learning are liable all too quickly to be done away with. When this happens, as it frequently does, even a system of group working previously introduced with considerable effort and expense can degenerate into a kind of democratic Taylorism (Severing, 1997). Another danger is that of learning by doing being reduced to the skills in demand at the time. Lean production, then, implies lean learning. This is particularly so when, for example, combining work and learning, as group working aims to do, is rendered more difficult or even impossible because the time needed for intra-group communication is reduced on grounds of cost (Frieling, 1993 and Markert, 1997).

Reduced access for the lower-skilled and unemployed

Against this background there is little chance of groups who, because of their lower educational level and occupational status, have been given little further training being given more opportunities to participate in work-integrated learning. According to the BSW findings, the group-specific differences found in the case of continuing training are repeated for work-integrated learning. All this tends to strengthen the belief that the acquisition of skills and competence by on-the-job learning has so far remained a mere vision demanded by theory but not yet



translated into practice (Staudt and Meier, 1996).

No practicable ideas for certification

In the circumstances it is understandable that even firms that actively encourage on-the-job learning hold back when it comes to the question of certification and accreditation of skills gained through work experience. Despite the positive attitude to work-integrated learning, certification by firms is in the main not viewed favourably and even the works councils and employees themselves see it as involving considerable problems (BIBB/IES/IW, 1997). This is only partly a matter of vested interests and due more to a lack of practicable ideas as to how the contribution made by the various forms of on-the-job learning to individual skill- and competence-building might be determined for certification purposes. Measures designed to develop core skills and competences pose a particular problem here.

Combining and linking forms of learning and venues

The potential of work-integrated learning and the workplace as a place of learning are limited by the fact that by no means all vocational learning objectives can be achieved on the job. Forms of learning and venues away from the workplace will still be needed for the time-consuming process of basic training. A variety of learning venues will also be needed for continuing training, for example, for courses leading to formal qualifications for career advancement. Work-integrated learning will make a useful contribution here, especially if experience gained at the workplace is accredited by certificate. However, the combination and interaction of several learning venues is necessary to balance out any one-sidedness in training on the job.

Exclusion of the unemployed

A further reservation attaches to work-integrated learning, namely that its benefits do not extend to the unemployed unless new models for acquiring skills on-the-job are devised to ensure their inclusion. Unemployed workers could, for example, be taken on as temporary replacements

for employees on release. This has been the practice in Denmark for a number of years and has the advantage of enabling unemployed people to benefit from work-integrated learning while freeing permanent employees to take part in further training outside the company (Müller, 1994).

Outlook

Given the limitations and risks attaching to work-integrated learning, its further development is likely to be as follows:

Transparency of the contribution of work-integrated learning

Work-integrated learning in its various forms should be further developed because of the manner in which it interacts with the work process. Traditional forms such as instruction and induction have a relatively marked information, instruction and instruction content at the expense of opportunities for independent practical working. In forms of training such as quality circles that put the accent more on group learning, the emphasis tends to be on organizational and corporate development and its role in individual skill-building and development of abilities is still very unclear. This makes it difficult to devise practicable means of developing and certifying skills based on work experience. Efforts should be made to clarify how different forms of learning interact and the learning objectives, skills and competences best attained through them.

The connection between general working conditions, such as organizational structure and corporate philosophy, and the specific tasks to be performed on the one hand and the skills acquired on the other also needs to be defined in the case of functional learning. This would make it possible to ascertain which work structures favour and hinder the learning process and possibly even to draft a typology of work structures and tasks and their implications for skill-building and corporate development. The overall contribution of work-integrated learning and learning by doing to corporate development needs also to be clarified. This could be done, for example, by analysing the figures for absenteeism, frequency of complaints, the

“The potential of work-integrated learning and the workplace as a place of learning are limited by the fact that by no means all vocational learning objectives can be achieved on the job. Forms of learning and venues away from the workplace will still be needed for the time-consuming process of basic training.”



“The relationship between work-integrated learning and other learning forms also has its relevance for education and training policy. The interest in dual structures at all levels from initial and continuing training up to tertiary education shows that work-integrated learning cannot replace other training forms and venues but can only complement them.”

“A matter of crucial importance is the possibility of combining formal and informal learning with a view to obtaining a formal qualification at further training or university level. The need for it finds expression in all the talk of reform and the projects for the reform of vocational training and for lifelong learning currently being put forward.”

suggestion scheme, quality assurance and learning objectives from manual skills to creativity.

A networked training system

The relationship between work-integrated learning and other learning forms also has its relevance for education and training policy. The interest in dual structures at all levels from initial and continuing training up to tertiary education shows that work-integrated learning cannot replace other training forms and venues but can only complement them. In addition to combining on-the-job training with formal training one should think about creating a network of learning and training facilities that would include the workplace, leisure time and the media. Learning arrangements could combine formalized learning in training centres, work-integrated learning, incidental learning on the job and self-directed learning in one's leisure time (Sauter, 1997). A network of this kind would create new opportunities for those interested in further training to plan their training themselves. On the other hand, it would also generate new problems of coordination when learning venues stand unconnectedly alongside one another, owing to the differing transparency of the modular courses on offer, counselling and quality assurance.

A matter of crucial importance is the possibility of combining formal and informal learning with a view to obtaining a formal qualification at further training or university level. The need for this finds expression in all the talk of reform and the projects for the reform of vocational training and for lifelong learning currently being put forward. It is reflected, for instance, in the additional qualifications that would render the transition from initial to further training more flexible and which could be acquired during or immediately following basic training in various ways. Firms, vocational schools, training bodies and other responsible bodies would certify these additional qualifications, thereby making them clear and acceptable to the labour-market. Formal and informal qualifications should also be combinable so as to provide access to higher education and career advancement. The vocational training reform project (BMBF 1997) seeks to ensure that in future addi-

tional qualifications, further training modules and skills acquired on the job are given more weight when deciding on a person's suitability for further education and training.

Summary

Post-Taylorist trends in work organization reduce the degree to which work is split into component elements and favour lean organizational structures with tasks being combined and flat hierarchies. The growing need for both broader and deeper vocational training can no longer be met solely by organized formal training away from the workplace. The consequences of lean organization for on-the-job learning are not wholly positive since increased working intensity cuts into learning time.

Work-integrated learning brings with it a number of economic and pedagogical advantages so far as training is concerned. By combining learning with the practical application of what has been learned, it offers an almost ideal solution to the problem of transition from theory to practice, enhances efficiency and reduces costs because of the lessened need to release people for external training courses. For those groups of workers who traditionally have benefited less from education the barriers to their taking part in learning processes and continuing training have been lowered.

Work-integrated learning is not the same as continuing training within the firm, the most frequent form of continuing vocational training. Forms of informal learning at the workplace and on the job are evolving alongside more traditional methods such as in-house and external training courses and seminars. They lie somewhere between the two extremes of work and learning and the terms used are not standardized but vary with company philosophy and management strategy, even though they relate to the same or very similar things.

A distinction must be made between functional learning by doing and the forms of work-integrated intentional learning, based on in-service measures. As far as the present practice and use of work-in-



tegrated learning is concerned, employers and employees are largely in agreement that traditional forms of learning still predominate, particularly instruction by superiors or fellow-workers and induction. More recent forms of training such as quality circles, exchange programmes, job rotation and self-teaching are as yet not widely used.

The various forms of work-integrated learning are multifunctional instruments for personal, organizational and corporate development. In addition to developing skills they may, depending on the type of learning involved, help to improve employee involvement, quality assurance, customer-orientation or organizational development. This multidimensional approach makes it undesirable from a company point of view that they should become too formalized a means of qualification.

Functional learning through work is subject to conditions at the workplace that may either help or hinder the process. We must make a distinction here between general conditions at organizational level and the potential learnability of job content. Even incidental learning while on the job is often only possible when - as in the case of group work - organizational measures are taken that also include flexible learning times.

Functional and intentional learning at work requires work structures that make no strict demarcation between working

and learning. Such structures do not (yet) exist in many areas of company operations. And even where lean organization with increased learning opportunities have been adopted, the consequences for learning are ambivalent.

A greater working intensity reduces time available for learning; outsourcing (including teleworking) makes it more difficult to obtain information and hampers cooperation. Concentration on the core workforce impedes access to learning for those on the periphery and excludes the unemployed. All this renders the demanding learning objectives set for work-integrated learning unachievable. Instead there is a risk of "lean learning".

The further development of work-integrated learning involves considerations both of methodology and education policy. Greater clarity is needed in the case of both work-integrated learning and functional on-the-job learning regarding how they relate to qualifications and skills on the one hand and their contribution to company development on the other (statistics could be used for this purpose).

In the sphere of education policy it is a matter particularly of developing models for linking formal and informal learning into a network. This will involve a rethinking of the course of a person's life, training and professional career, wage-earning activity and leisure time so as to allow for the need for lifelong learning.

Bibliography:

Bergmann, B. (1996): Lernen im Prozess der Arbeit. In Kompetenzentwicklung '96. Strukturwandel und Trends in der betrieblichen Weiterbildung. Münster, New York, Munich, Berlin, pp. 153-262

BIBB/IES/IW (1997): Formen arbeitsintegriertes Lernens. Möglichkeiten und Grenzen der Erfassbarkeit informeller Formen der betrieblichen Weiterbildung, published by BMBF, Bonn

Federal German Ministry of Education. Science, Research and Technology - BMBF (publ.) (1996): Berichtssystem Weiterbildung VI. Bonn

Federal German Ministry for Education. Science, Research and Technology - BMBF (publ.) (1997): Reformprojekt Berufliche Bildung. Cabinet decision of 16.4.97

Franke, G. (1982): Qualitätsmerkmale der Ausbildung am Arbeitsplatz. In BWP 4/82, pp.5-6

Frieling, E. (1993): Personalentwicklung und Qualifizierung - neue Ansätze und Probleme. In: Loebe H/Severing, E.(ed.): Mitarbeiterpotentiale entwickeln - Erfolgsfaktor für die Wettbewerbsfähigkeit der Unternehmen, Munich



Grünwald, U. (1997): *Formen arbeitsplatznaher Weiterbildung. Ergebnisse der europäischen Weiterbildungserhebung.* In Geissler, K.A./v. Landsberg, G./Reinartz, M. (ed.): *Handbuch Personalentwicklung und Training*, Cologne (Looseleaf publication)

Grünwald, U./Moraal, D. (1996): *Betriebliche Weiterbildung in Deutschland, Gesamtbericht - Ergebnisse aus drei empirischen Erhebungsstufen einer Unternehmensbefragung im Rahmen des EG Programms FORCE*, Bielefeld

Markert, W. (1997): *Gruppenarbeit in deutschen Industrieunternehmen. Entwicklungsstand und Qualifikationsanforderungen.* In: BWP 3/97, pp.3-9

Müller, K. (1994): *Berufliche Weiterbildung: Das Beispiel Dänemark.* IAB Werkstattbericht No.13 of 16.12.1994

Münch, J. (1997): *Personal und Organization als unternehmerische Erfolgsfaktoren.* Hochheim a.M.

Sauter, E. (1997): *Aufstiegsweiterbildung im Umbruch. Neue Impulse und Konturen für die berufliche Weiterbildung.* In: Dobischat, R./Husemann, R. (ed.): *Berufliche Bildung in der Region.* Berlin (being printed).

Severing, E. (1994): *Arbeitsplatznahe Weiterbildung. Betriebspädagogische Konzepte und betriebliche Umsetzungsstrategien.* Neuwied, Krefeld, Berlin

Severing, E. (1997): *Arbeitsplatznahe Weiterbildung.* In Geissler, K.A./v. Landsberg, G./Reinartz, M. (ed.): *Handbuch Personalentwicklung und Training*, Cologne (Looseleaf publication)

Staudt, E./Meier, A.J. (1996): *Reorganization betrieblicher Weiterbildung.* In *Kompetenzentwicklung '96. Strukturwandel und Trends in der betrieblichen Weiterbildung.* Münster, New York, Munich, Berlin, pp.263-336

Weiss, R. (1994): *Betriebliche Weiterbildung,* Cologne



The French education system as the expression of a political culture¹

Introduction

For those not familiar with it, especially France's partners in Europe, the French education system may seem rather strange. One of the most puzzling aspects is the unique role that the 'Grandes écoles' and the classes that prepare for entrance to these schools play within this system. What is most surprising, however, is the importance that the most prominent of these schools attach to highly theoretical teaching, when their task is to train men of action. Many other features, all the more remarkable as various attempts to change them have come up against insurmountable resistance, could be cited, ranging from the fact that higher education is free of charge to the lack of regard for so-called vocational education. The issues being discussed by those who are studying this system in France are also rather surprising. Studies looking at the viability of education and 'human capital' are far from occupying a key place. Considerable attention is being paid, however, to the relationships between the 'levels' at which people leave the education system and the 'levels' at which they enter the production system and to the problems of 'deskilling' raised by the fact that some people do not immediately find jobs at the level at which they should 'normally' be employed on the basis of their education. How can these features be explained?

Analyses of a purely economic type where education is seen as no more than a means of supplying personnel able to play their part in making the production system efficient make it difficult to understand the reason for these differences. These tend to be seen as troublesome residues of past

eras that now need to be sacrificed on the altar of competitiveness. From this point of view, the 'resistance' encountered by reformers seems as irrational as it is irritating. Can we genuinely believe, however, that the only role of the education system in a society is to augment the 'human capital' available to the production system? Education does not just prepare everyone for the place that they will occupy in society as producers, it also prepares them to be citizens and socially placed individuals. In practice, it is impossible to understand the workings of education systems without taking account of the way in which each society is constructed. The French case is particularly instructive here because of the links between specific features of the education system and certain traits of French society. These traits mean that French society is not really in keeping with the theoretical image of a 'modern' society.

The French education system does not just prepare people to be efficient producers, but also directly defines the position that they will occupy in society, through the symbolic properties of the education that they have received. The question of access to what might be termed the 'educational nobility' is in itself a major issue for the actors, even when this is far from going together with improved economic efficiency. The construction of the education system, the strategies of the actors involved and the relations that they forge - and therefore the possibilities of coordinating their action - seem to be determined in practice as much by this role of the education system as by its specifically economic role. This continues to be true at a time when discourse on the education system is stressing that education has to be geared to the needs of the economy.



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1) An initial version of this paper was given at the international conference 'Human capital investments and economic performance' Santa Barbara, California, 17-19 November 1993



“Representing education in terms of an increase in human capital means that the impact of education on social status is shaped exclusively by income earned from work, this income in itself constituting a good measurement of everyone’s contribution to production. (...) This is far from being the case in France.”

If the way in which the education system is described conventionally tends to give priority to the distinction between various ‘streams’, these streams do not just differ in terms of the smaller or larger volume of ‘human capital’ that they provide and that can be used at any point of the production system, on the basis solely of technical skills and comparative economic performance. They provide access, through their symbolic properties, and in accordance with rules than have less to do with competition and the market than with custom, to a whole range of social positions. While the actual education provided by the ‘education system’, and the ‘vocational training’ given in enterprises can undoubtedly be partially substituted in terms of the training of human capital, they cannot be substituted from the point of view of acquiring a social position. From a French point of view, they operate in very different ways.

Problems in reforming the French education system and in particular in implementing reforms that are obviously desirable when seen strictly from the point of view of production efficiency cannot be understood without taking account of this side of the coin which seems to play a key part in the fact that some foreign examples, such as German-style apprenticeship, highly admired from the point of view of production efficiency, have failed to pave the way towards real changes in practices.

Our paper has three parts. In the first part, we look at what is specific about the place of the education system in French society, bearing in mind the importance in this system of educational nobility in comparison with other societies, such as German society. We look at the main areas of contention between those defending a ‘democratic’ conception of society and those still attached to a ‘hierarchical’ view.

In the second part, we look at the relationships between the actors involved in education and examine what results there have been from the point of view of measures to gear the output of the education system to the needs of enterprises.

In the third part, we examine the adverse effects of these measures on the way in which the education system supplies en-

terprises, the reforms currently underway to improve the situation and the difficulties that these reforms are encountering.

The education system in society

The French attachment to the ‘noble’

Representing education in terms of an increase in human capital means that the impact of education on social status is shaped exclusively by income earned from work, this income in itself constituting a good measurement of everyone’s contribution to production. This argument, although it undoubtedly does not provide a complete picture of a society, may well be an acceptably rough approximation of some societies. This is far from being the case in France. In addition, this kind of representation makes it impossible to take account of questions of the legitimate correspondence between types of education and types of jobs that are unavoidable in France. The relationships between the education system and the production system in France are impossible to understand unless the symbolic aspect of education is taken into account. We need first to understand the role played by the opposition between what is more ‘noble’ and what is less ‘noble’.

Republican France repudiated the Ancien Régime’s relationship between nobility and the quality of ‘blood’. In doing so, it did not, however, repudiate the notion of nobility. The Third Estate ‘must become noble again’, as Sieyès affirmed in his famous pamphlet of 1789. From the Ancien Régime onwards, the traditional conception of nobility was contested in the name of other values placing the emphasis on ‘nobleness of heart’ (Duby, 1978). Some trades were, moreover, better than others by reference to a basic opposition between creations of the mind, considered to be noble, and physical toil, considered to be lowly. It was this criterion that the Encyclopaedia used to distinguish between ‘artists’ and ‘artisans’².

Post-revolutionary France attempted to impose a modernised view of nobility linked largely to reason, ‘skills’, ‘talents’ and virtue’ rather than to call into ques-

2) “Artist: name given to workers who excel in those of the mechanical arts requiring intelligence. Artisan: name given to workers undertaking those of the mechanical arts that require less intelligence. It will be said of a good ropemaker that he is a good artisan, and of a skilful clockmaker that he is a great artist”. Cited in William H. Sewell, *Gens de métier et révolutions; le langage du travail de l’Ancien Régime à 1848*, Aubier, 1980, p 45.



tion the relevance of the notion³. This association between a hierarchy of 'talents' and a hierarchy of knowledge played a key part at the time when the revolutionary successors of the encyclopaedists were constructing the new talents of the Republic by designing the 'écoles' that were to provide a basis for France's entry into the 'first industrial revolution'. [Between 1800 and 1803, Chaptal, following on from Monge, Carnot and the Abbé Grégoire, designed the 'Arts and Trades' schools which he identified with the Republican conception that made the victory of Valmy possible.] 'Close links between the education of every technician in industry and science of the highest level make it possible to win the production battle. All the main elements of modern technical education, which were designed and put into practice in France during the four hundred years between 1450 and 1850, from the reign of Louis XI to the Polytechnic and Arts and Trades revolution, have been shaped by this conception' (Cheminade, 1998, Hillau, 1998).

In modern France, the lesser or greater 'nobility' of an activity can be evoked just as well by an electrician, arguing that his job is more noble than that of a mechanic, as by the President of the Republic (such as the socialist President François Mitterand) stating that his appointment is a 'nobility'⁴. While explicit references to this notion are few and far between, it is a constant thread in questions of 'rank', whose place in French society is well-known. A whole range of considerations are involved in determining whether or not this or that activity is more or less noble, although they have varied to some extent at different times. 'Design' activities, closer to creations of the mind, are generally felt to be more noble than 'operational' activities which have more to do with physical toil (in the automobile industry, 'research' responsible for designing new models and 'methods' responsible for designing the production system are more noble than 'manufacture' which runs factories). Similarly, intellectual work (and therefore white-collar work) seems more noble than manual work (and therefore blue-collar work)⁵. Lastly, it is not noble to be in someone else's 'service', to the point that some activities, still to be found in other industrial countries,

have disappeared in France (shoe cleaning, for instance).

In the French view of society, there has to be a correspondence between the nobility of the position that someone occupies and the nobility of their person. Someone who occupies a position whose nobility is below that of their person is 'demeaned' or 'fallen from rank'. And someone who occupies a position whose nobility is greater than that of their person is seen as a 'social climber'. In contemporary French society, it is largely people's 'educational nobility', determined by their route through the education system, their initial education, the quality of the stream that they have attended and the level that they have reached in this stream that will determine, for the rest of their days, their level of personal nobility. The issue, constantly tackled in French work on the links between education and employment, of the match between 'level' of education and 'level' of employment, is entirely shaped by this view.

People who have a very elitist view of education and people who have a democratic view share a similar perception. These two views can in fact co-exist within the same person and can be defended by arguments that are 'technical' in appearance, even though it is political issues that are largely involved.

The former consider that there must be very different streams; a major divide between the education of the elite and the education of the people. Some people should receive an abstract education in noble streams devoted to theoretical and disinterested knowledge (the humanities in the past and extremely 'pure' mathematics nowadays) while others should receive a predominantly technical education in streams that lack nobility or should be trained 'on the job'.

The latter, who have for the most part triumphed in legitimate discourse but not in practice, consider that everyone should have access to nobility. Most feel that, for this purpose, everyone should have access to noble streams whose main feature is the place that theoretical education occupies in them. What is needed, therefore, is a single kind of education

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3) According to the Declaration of the Rights of Men and Citizens (Article VI) 'as all citizens are equal in its eyes (i.e. the law), they are also admissible to all public ranks, positions and employment (to which the aristocracy had previously had privileged access), according to their ability and with no distinction other than that of their virtues and talents'; the issue of access to 'ranks', etc., the symbol of nobility, remains crucial.

4) Press conference of 12 April 1992. On the place occupied by the nobility of trades in today's France, see for instance Philippe d'Iribarne, *La logique de l'honneur*, Paris, Seuil, 1989; paperback edition, Point-Seuil, 1993.

5) Alain d'Iribarne, 'Enjeux sociaux autour de l'accès aux professions' in *Cultures techniques entreprises et société*, Revue Pour No 122/123- July-September 1989, p 23-33.



“(...) the structuring notion of the opposition between ‘noble’ and ‘common’ in French society, is not to be found in German or American society where other distinctions take priority. This is not without an impact on the differences between their education systems.”

6) For Claude Allègre, Minister of Education, therefore ‘equality is not (...) the access of the largest number to a noble and unique stream following an entirely predetermined route. (...) Equality also means recognising that success in art is as good as success in mathematics, and that an empirical mind is as noble as a taste for abstract relationships. (...) The sciences, whose teaching needs to be completely rethought, need to be released from their exclusive servitude to mathematics and the empirical needs to be given back all its nobility ...’, Claude Allègre, ‘Ce que je veux’, *Le Monde*, 6 February 1998.

7) See bibliography: Marc Maurice, François Sellier, Jean-Jacques Silvestre, *Politique d’éducation et organisation industrielle en France et en Allemagne*. An interpretation of the comments made in this work, based on the differences between French and German political cultures, can be found in Philippe d’Iribarne, ‘Culture et ‘effet sociétal’’, *Revue française de sociologie*, October-December 1991.

8) Since this reference work, there has been a great deal of comparative research on France and Germany in France. Works include: J-P Gehin and P Mehaut: ‘*Apprentissage ou formation continue? Stratégies éducatives en Allemagne et en France*’. L’Hamattan, Paris 1993, and M Möbus and E Verdier (eds): ‘*Les diplômés professionnels en Allemagne et en France. Conception et enjeux d’acteurs*’, L’Hamattan, Paris, 1997.

that is a symbol of the equal nobility of all citizens. The streams must therefore be eliminated or at least differentiated as little as possible and bridges between them multiplied so that everyone can at least entertain the hope that they may one day enter the highest streams. Some feel, on the other hand, that equally noble streams need to be created⁶.

Whenever a decision of any kind needs to be taken about education, and in particular about the relationships between education and enterprises, these political views will meet head on, even when, in appearance, what is involved is solely economic in nature.

Other societies, other education systems

Analyses similar to the one sketched out above for French society could be formulated for any other society. While education systems differ substantially from one country to another, every society, including those considered to be the most modern, continues to be marked by the specific way in which they perceive the integration of each of their members into this society. The ways in which society is structured, and lines are drawn between better and worse positions, differ. Similarly, the ways in which everyone is given a place depending on this or that of their characteristics, and in particular the type of education that they have received, also differ. Consequently, the structuring notion of the opposition between ‘noble’ and ‘common’ in French society, is not to be found in German or American society where other distinctions take priority. This is not without an impact on the differences between their education systems.

Norbert Elias, analysing the differences between French and German society, notes that they are structured by very different principles (Elias, 1939). From the 18th century onwards, several communities (court society, intellectual bourgeoisie, commercial bourgeoisie) co-existed and each cultivated its own specific nature and adhered closely to its own values. This contrasted with the situation in France, where the ambition of each social group was to become part of groups of higher rank by adopting their values and ethos, and not to cultivate their dif-

ferences and remain loyal to their own values. These differences in the structure of society were not without an impact on their subsequent history. In German society, aristocratic values, after remaining the distinctive feature of largely French-speaking courts, were rejected by the bourgeoisie and disappeared with the classes that upheld them. In French society, however, they permeated the bourgeoisie and then society as a whole. Contemporary German society is still made up of large groups with strong identities which define themselves positively on the basis of their own values and seem little impressed by the values of groups that, from a French point of view, would be seen as much superior. In comparison with the French model, these groups are much more on a par with one another and relatively autonomous than placed above or below one another on a ladder that everyone is trying to climb.

This type of social structure shapes both the German professional world and education system. This point is made, for instance, in the classic study of these worlds by Marc Maurice, François Sellier and Jean-Jacques Silvestre⁷. ‘A particularly pronounced professional and social identity goes hand in hand with the group’s relative isolation within itself’, the authors note as regards German manual workers. They also note ‘the ability of vocational training to support at one and same time the way in which each group - manual and non-manual - differentiates itself from the other and the principles of professional and social recognition that provide the foundation for *each group’s* comparability and identity⁸’.

The relationship between vocational education (providing training up to ‘certified engineer’ level) and general education (starting from the Gymnasium and providing university-trained ‘graduate engineers’) is particularly significant. While the former places the emphasis on the ‘technical’, the latter places the emphasis on the ‘humanities’. The two streams are ‘totally separate’. In contrast to what might be seen by a French eye, however, these two types of education are more juxtaposed than ranked above or below one another. General education qualifications have a ‘different hierarchy’. ‘Higher education qualifications are - much more so



than in France - concentrated in the top echelons of the civil service and the private service sector'.

In these circumstances, it comes as no surprise that the general education stream is 'in practice more or less closed to children whose parents have manual jobs'. A 'strong structure of intermediate vocational training schemes offers genuine opportunities for upward educational and professional mobility from workers' apprenticeship' although this cannot 'be dissociated from the role that apprenticeship plays in stabilising the majority of workers of working class and rural origin in the working class and therefore in the acceptance of the major social and professional divides that separate manual from non-manual workers'.

It is again possible to see Elias' division between a vast bourgeoisie setting little store by the intellectual values imparted by general education and a class of teachers and 'top' civil servants setting great store by these values, whose children are alone in being over-represented in general education.

The clear-cut divide between skilled and unskilled workers can undoubtedly be interpreted by the fact that the former have gained a bourgeois status and the latter have not and that the German community logic means that there is a clearly defined boundary between those who are and those who are not members of this group. It is 'on a permanent basis', that 'two populations are clearly separated by whether or not they have received vocational education recognised by a certificate'. Age and seniority are not enough to move from one population to another. It is also as uncommon to move up from one group to the other as it is to move down. The fact that wage differences between skilled and unskilled workers are fairly low in comparison with France would tend to show that these are again groups that are more juxtaposed and less ranked than in France.

The fact that vocational education is seen as very valid is reflected by a whole range of properties, highlighted by the authors, associated with the place that the products of this education occupy in enterprise organisations. There is an 'integrated

space' formed by 'skilled workers, Meister and certified engineers' which seems to be well situated in the continuity of the German bourgeoisie other than intellectual. Within this space there is more 'worker solidarity' than 'hierarchical division' between workers and foremen, and the role of the German foreman is very different from that of his French counterpart. The role of seniority and age is not at all the same as in French-style 'house' management. Within this large 'bourgeois' group, including skilled workers, there are subdivisions that obey the same principle. A subgroup formed by those who have received training in manual work is separate from a subgroup whose education has been of a white-collar type, with relatively few transitions from one subgroup to the other and a high level of continuity between levels within each subgroup.

While the identities of the communities formed in this way are very strong, the issues of rank that are so important in France are not to be found in them. This is reflected in many ways. There is a very different conception of 'multiskilling', of job rotation and of the substitutable nature of team members. Assessments of everyone's professional skills do not have the same dramatic nature as they do in France which means that they can be more readily entrusted to the foreman (*Meister*). 'Social relationships at work' are 'geared more towards cooperation (between types of tasks, functions and departments) than towards hierarchical subordination'.

The specific features of the American education system can also be related to the structure of American society.

American society is seen as a society of equals linked by contractual relationships governed by law, and based on the relationships between customers and suppliers, in which everyone is free to decide whether or not to enter into a transaction on the basis of the advantages that they can obtain from it. This perception plays a key role in particular in the internal operation of enterprises⁹. The role of the public authorities is to ensure that these transactions are 'fair' and above all to prevent the strong from abusing their position (for instance American competition,

In Germany "(...) assessments of everyone's professional skills do not have the same dramatic nature as they do in France which means that they can be more readily entrusted to the foreman (Meister). 'Social relationships at work' are 'geared more towards cooperation (between types of tasks, functions and departments) than towards hierarchical subordination'."

⁹ Philippe d'Iribarne, *La logique de l'honneur*, op cit.



In “American society (...) education actually plays the role attributed to it by the theories of human capital. It makes it possible to improve the position that you occupy as a service provider on the market. (...) In contrast to the French view, it does not define what you ‘are’ for life, i.e. the ‘rank’ that you deserve, and, in contrast to the German view, it does not gain you access to a job community, except in the particular case where it provides you with access to a ‘profession’ (...)”

stock exchange and labour law). The authorities are also there to provide a framework for the operation of the market (control of measurement instruments, and more generally combating fraud when purchasers are likely to be deceived by appearance about the nature of the product that they are buying).

In a conception of this type, education actually plays the role attributed to it by the theories of human capital¹⁰. It makes it possible to improve the position that you occupy as a service provider on the market. It is worth doing if it is profitable. In contrast to the French view, it does not define what you ‘are’ for life, i.e. the ‘rank’ that you deserve, and, in contrast to the German view, it does not gain you access to a job community, except in the particular case where it provides you with access to a ‘profession’, in the very specific sense that this term has from an English-speaking point of view. Seen as an economic investment, it is not at all surprising that it costs money, since the quality of the service provided justifies the price asked. The role of the public authorities is to ensure, when the incomplete information available to the ‘consumer’ makes this necessary, the quality of the product (the situation encountered in the ‘professions’) and to ensure that there is equal treatment in the recruitment of both teachers and pupils (although the way in which this is perceived may differ greatly at different times, the principle remains the same).

Relationships between the actors involved in the design and operation of the education system

If we are to understand the relationships forged between the actors involved in the design and operation of the French education system, and in particular the way in which the demand from enterprise is coordinated with the supply from education, various aspects of this education system need to be separated out. These various aspects play different roles not only in the production of skills but also in the production of the social hierarchy. The actors implement different strategies for these different aspects, leading to confrontations and compromises that are far from comparable. Relations between the State (which is a particularly important actor

in French education, both because of its position in the financing of education and its role in the legal recognition of education) and enterprises vary greatly depending on the part of the education system in question.

Providing a highly accurate picture of the situation would require a large number of distinctions, especially as hybrid formulae have been developed in recent decades. Separating out some of the main approaches should enable at least an initial clarification. A line needs to be drawn, on the one hand, between ‘elite’ education and ‘mass’ education and, on the other hand, between initial education and training during working life.

‘Elite’ education

Looking first at ‘elite’ education, three types of education system have traditionally co-existed (following primary education and ‘secondary’ education taking the form in practice, for these elites, of streams without immediate vocational goals), only one of which concerns enterprises and each of which has its own logic:

- faculties of law, medicine and pharmacy
- faculties of sciences and arts
- the ‘grandes écoles’

The logic that underpins the first system is that of the traditional guild of which it is a development. Eminent members of the guild are responsible for educating young people within established professions that have major legal privileges. The knowledge imparted is both theoretical and practical and those who teach it are practitioners of their art. Even though it is directly geared to vocational needs, it is noble knowledge forming part of the ‘liberal arts’.

The second system is traditionally devoted to the cult of disinterested knowledge. A large proportion of these who emerge from it go into teaching (in secondary and higher education) and research¹¹. Most stress is placed on the theoretical side of knowledge. In the case of future teachers, in particular, teaching methods, i.e. the practical, are considered to be non-noble knowledge. Even though many

10) This relationship between the American ‘model’ and the human capital theory is clearly evident from analyses such as those of C F Buechtemann: ‘L’enseignement professionnel et la formation technique en tant qu’investissement et mobilisation des ressources humaines et financières’, in *Revue Formation Emploi*, No 64, October-December 1998, pp 59 - 76.

11) In 1991, for instance, among those who had completed their education three years previously, 73% of people who had obtained a degree in mathematics or physics had become teachers; there were similar percentages among the literary streams. *Cereq bref*, December 1992. Since that date, the structural position of the labour market has remained stable, with variations depending on the number of teaching posts ‘up for competition’.



authors have deplored the fact that teachers are badly prepared for the teaching side of their job and give examples of foreign situations where considerable emphasis is placed on teaching methods, they have had little impact in practice, especially in the more noble parts of the system (for instance the training of qualified secondary teachers).

A third system, underpinned by a further logic, is formed by the typically French system of 'grandes écoles'¹². These schools are intended to train an elite for the top jobs or, to be more accurate, to recognise those who can legitimately be part of this elite. In their case, the main factor is not the teaching that is given, but the level of the entrance competition which determines the very strict hierarchy of these schools. These competitions are a sort of ordeal by fire, in the sense of old legal practices, through which everyone's 'talents' and 'gifts' are revealed; in the vision of Republican elitism, these talents and gifts determine whether or not people can gain access to positions of power. They have to be as objective as possible to avoid any possibility of favouritism. The more they cover abstract subjects and are at a highly theoretical level, the more they reveal lofty talents. In this system, selection by competition has to take place away from any external pressures and exclude any practical knowledge, as both could only tarnish the purity of the test. Once the competition has been passed and questions of ranking settled (the level of educational nobility defined for life), theoretical education, which has to be of high level and remain relatively pure, in order to consolidate the school's rank, may co-exist with practical training in the form of work experience in enterprises or of so-called 'applied' schools. In this system, the 'level' obtained, which is a sign of the 'potential' of those involved and provides the foundation for their legitimate occupation of posts of authority, counts for more than the content of the education. Coordination between these schools and enterprises may be fairly loose. Specifically vocational training is acquired on the job.

Streams that have vocational goals have been set up within universities of arts and sciences. Some (masters' courses, polytechnic institutes) follow the model of the

'grandes écoles' within universities (rigorous selection, elitist orientation). Those that do not follow this model (providing vocational training geared towards the immediate needs of enterprises in a non-elitist way) are widely perceived as being lower in rank than both conventional university education and the 'grandes écoles'. This is true of both the lower cycle (university technology diplomas) and the higher cycle (diplomas in specialist vocational studies). We shall see that this is not without an impact on the professional fate of those who attend these streams. While this fate is relatively favourable on leaving the education system, it is more problematic in the long term.

There is a relatively wide consensus about this elite education and, even though the system of the 'grandes écoles' is periodically attacked in a relatively ritualistic way, everyone knows that this attack will not have any major consequences. The same cannot be said of 'mass' education which is surrounded by an extremely lively political conflict.

'Mass' education

In a vision that might be termed 'right-wing', the fate of the masses (i.e. those who have failed to prove that they possess superior abilities in the initial stages of school selection, which starts to take concrete shape at the beginning of primary education) is to occupy the lowly rank of underlings. They need to receive training that is in keeping with their circumstances and which is essentially practical (technical) with a directly vocational leaning. Giving them training which is too theoretical in so-called 'general' streams - considered to be noble - might cause them to become embittered¹³. Short school education intended to provide basic skills in reading, writing and maths taught from a practical point of view needs to be rapidly followed by vocational training, largely controlled by enterprises whether it is provided within these enterprises (apprenticeship, in-house training centres) or within a specialist system (technical education).

In a vision that might be termed 'left-wing', the fate of the masses is to escape from the control of the new masters represented by enterprises and in particular

"These various elements of the education system are for the most part financed and organised by the State and are free or almost free for students. This situation, surprising from the economic point of view of investment in human capital, is more comprehensible when seen against the outline sketched out above. It is a meeting point for those who place the emphasis on the elitist nature of education and those who place the emphasis on its democratic aspect."

12) Philippe d'Iribarne, 'Une aristocratie des talents: l'Ecole polytechnique et le modèle français d'organisation', in *Les polytechniciens dans le siècle; 1894 - 1994*, Dunod, 1994.

13) This kind of view, which currently tends to be expressed only in a veiled way, was put forward much more crudely in the past; Pierre Rosanvallon, *Le sacre du citoyen; histoire du suffrage universel en France*, Gallimard, 1992.



14) For instance, the statements of Jean Auroux, former technical lycée teacher and former socialist Minister of Labour: 'For my part, I think that the role of enterprise is to produce, but also that the longer general education is, the better adapted it is to a rapidly evolving situation. (...) We need to invent (...) a new concept of education that places the emphasis not on the demand from enterprise but on the labour supply from young people', interview in *La Vie*, 2 September 1993.

15) We know that, for the economists, public intervention is justified when there is a gap between 'economic performance' and 'social performance'.

16) See for instance Myriam Campinos-Dubernet and Jean Marc Grando, 'Formation professionnelle ouvrière: trois modèles européens', in *Entreprise, Etat et formation en Europe, Numéro spécial: Allemagne, France, Grande-Bretagne, Italie*, Revue Formation Emploi, No 22, April-June 1988, pp5-29.

17) This 'societal' perception of institutional methods of regulating education systems and their relations with production systems is absolutely indispensable if we are also to understand both their architectures and methods of operation and the methods by which they change. This is particularly true, for instance, if we wish to understand the differences that can be seen between the methods used in France and Germany to reform and innovate in the area of the 'certification' of vocational training.

See M. Möbus, E. Verdier: *La construction des diplômes professionnels en Allemagne et en France: des dispositifs institutionnels de coordination*. In *Les diplômes professionnels en Allemagne et en France*, op cit. E. Verdier and C. F. Buechteman also use the notion of 'education and vocational training regimes' to take account of specific national institutional features in this area and to analyse their relative performance as regards the operation of the labour market.

E. Verdier and C. F. Buechteman: 'Education and training regimes: macro-institutional evidence' in *Revue d'économie politique* No 108 (3), May-June 1998, pp 292 - 320.

their managers, in order fully to gain the dignity of citizens. The teaching that they are given must be as noble as that of the elite, which means either that the practical has to be 'ennobled' or that the theoretical and abstract side of this education has to be developed. It is important in any case that this education is provided by an educational 'public service' protected from any pressures from enterprise which would be incompatible with the enfranchising role of this education system. Teachers, whose task is to work towards this enfranchisement, must be protected from the pressure of the 'bosses'. Schools cannot be made into the subjects of the production world. Apprenticeship in enterprises has to be condemned because it harks back to a domestic vision of the enterprise where workers, there to do their masters' bidding, were subject to the whim of a master with divine right (the term '*formation maison*' (in-house training) also harking back to this kind of domestic image). It is the quality of vocational education, guaranteed by teachers driven by their professional conscience, that will provide the economy with workers who are both competent and independent¹⁴.

In practice the organisation of the initial vocational training system is a compromise, albeit changing as time passes, between these two visions. This system has long been separated in a very radical way from general education (even the 'national education' and 'vocational training' authorities were separated and enterprise schools played a non-negligible role). While the rise of democratic values may seem on the surface to have brought about a rapprochement between these two systems, the extent of this rapprochement remains questionable.

State hegemony in initial education and the coordination of training and employment

These various elements of the education system are for the most part financed and organised by the State and are free or almost free for students. This situation, surprising from the economic point of view of investment in human capital, is more comprehensible when seen against the outline sketched out above¹⁵. It is a meeting point for those who place the em-

phasis on the elitist nature of education and those who place the emphasis on its democratic aspect.

Since the task of education is to select an elite of talents, through predominantly political action undertaken by the public power, and more broadly to determine everyone's proper rank on the basis of their educational nobility, the introduction of any selection based on money would be quite wrong. People cannot legally buy a noble title. The State, moreover, is the guarantor of the validity of the tests that locate everyone in the educational hierarchy and of the value that is attached to each type of education (just as it is the guardian of the value of currency). This helps to understand the role that the State plays in formulating curricula and monitoring diplomas and certificates and the place occupied by national qualifications¹⁶. The State's role is, moreover, to find political compromises between the hierarchical and the democratic approaches in the design of the various streams and the links between them¹⁷.

Since education also has the task of training people as citizens, who are fundamentally equal, it cannot offer privileges to those who are well off. The State must therefore ensure that education is free.

The links between the hierarchical and egalitarian approaches are tending to take the form, increasingly so it would seem, of a combination of formal equalities (between the different types of lycée and the qualifications of the various universities) and real inequalities, with perfectly evident unofficial hierarchies and relatively hidden forms of selection for entry into the best schools. There is a kind of market with unofficial competition between establishments to obtain the best students and between students to gain access to the best establishments, without the latter charging, however, for the quality of the product that they provide.

There are also private establishments charging high fees, especially in the 'business training' sector. While these establishments enable those who attend them to increase their income, they do little to increase their educational nobility and concern a field that French society does not tend to perceive as noble. The charge



being levied against them at present is that they are only in it for the profits they can make. They may also help people to prepare to return to education in more legitimate streams, through a method of acquiring knowledge that French society pejoratively sees as 'cramming'.

While the members of the public education system are extremely keen to defend the independence of this system against any outside 'interference', this does not mean that they are indifferent to the future, including the career future, of the people that they educate. They are willing to take account of this when designing training courses. At a whole range of levels, from civil servants responsible for questions of education at national level (with different divisions at different times) to teachers in this or that vocational lycée at local level, they are finding out about enterprises' expectations. This information may be gained from bodies for official concertation, linked in particular to French-style 'guideline planning', or through contacts forged informally with an enterprise through a teacher's personal initiative. The usefulness of this information may vary greatly. In central concertation bodies, the stress is placed on the economic side of education, in keeping with the fact that the French administration, and in particular the planning system, wants the wherewithal to 'modernise' society. Issues of links between education and rank, educational nobility, etc., tend to be left to one side, as they are seen as 'archaic' obstacles that will disappear with the development of a modern society and economy. Many plans that disregard these issues have been sketched out. They nevertheless re-appear, explicitly or implicitly, at the time when words need to be put into action. In the recent past, the problems raised by the reform of the French education system, to which we will return below, are a good illustration of this.

Continuing training

Leaving aside continuing training schemes linked to the fight against unemployment whose aim is directly vocational - in particular for young people under 'youth measures' - continuing training in principle takes two complementary approaches: a cultural approach of 'lifelong education'

at the initiative of individuals and a professional approach of production of 'skills' at the initiative of enterprises. The logic that underpins the latter case is the reverse of that of initial education. Its aim is not to decide people's rank since its goals are manifestly economic. Enterprises, which run it for the most part, largely have control over it. They can 'certify' training and, if they wish, award diplomas to people who have attended such training, although these have no value if they are not recognised by the State which alone has the power legitimately to intervene in matters that decide people's rank¹⁸.

A Law of 16 July 1971 made it compulsory for employers of nine or more employees to contribute to the financing of continuing vocational training. In practice, however, enterprises' real expenditure is substantially higher than the statutory minimum (over 3% of the wage bill in 1997 in comparison with a statutory minimum of 1.2%). The extent of this expenditure is such that the total training effort of French enterprises (initial and continuing training) is equivalent to that of German enterprises even though they play a much more modest role in initial training (Gehin, Méhaut, etc.). Most of this training is provided by private agencies or agencies linked to professional associations - the training insurance funds - with the result that there is a genuine training market. The State's role is largely to provide a legal framework. In theory this should provide workers' and employers' organisations with an important role in formulating continuing training policies, but this role remains modest in practice.

This situation is socially acceptable since what is involved is training whose aim is to make people employable and is therefore clearly economic. Enterprises are seen as both the main beneficiaries and the main contributors. Financing in the form of individual investment is, however, very small in scale¹⁹.

In innovative enterprises, however, there are some hybrid cases of so-called 'qualifying' training given in enterprises and having a scope which goes beyond them²⁰. This type of training is designed to provide a better link between theoretical and practical knowledge than in

"While the members of the public education system are extremely keen to defend the independence of this system against any outside 'interference', this does not mean that they are indifferent to the future, including the career future, of the people that they educate."

18) The findings of comparative research on the development of continuing training in the 'Europe of fifteen' conducted by CEREQ provide a good illustration of our argument. In comparison with the other EU Member States, enterprises play a key role in continuing training to the detriment of individual initiative, leaving the field open for the State as regards initial vocational training. Individuals are well aware that the 'second chance diploma', designed with a view to improving people's rank in French society, is largely illusory, which does little to encourage their continuing training initiatives. 'Les facteurs de développement de la formation continue dans l'Europe des quinze' in *CEREQ Bref*, No 150 - February 1999.

19) In comparison with Germany, the situation again seems ambiguous in France since the 'performance level' of this continuing training at the initiative of enterprises, expressed in terms of wage increases, is tending to drop. 'The allocation of training apparently took place on the basis of a system of selection and categorisation whose effect was to send out recurrent favourable signals to employees who the firm hoped would be loyal and remain with the company'. P Béret and A Dupray: 'Remuneration of continuing vocational training and skill-building under the German and French education systems' in the *European Journal Vocational Training*, No 14, pp 36 - 46.

20) This is true for instance of enterprises such as Pechiney which have tried to combine enterprise evaluations with 'diploma' certification using training by 'credit units': P Doray 'Formation et mobilisation. Le cas d'aluminium Pechiney' Presses Universitaires de Lille, 1989.



21) See M Périsset 'La certification d'entreprise: héritage ou nouvelles règles de gestion de la main-d'œuvre? L'exemple d'un groupe chimique' in *Revue Formation Emploi*, No 63, July-September 1998, pp 27 - 41.

22) European Commission: 'Teaching and learning. Towards the learning society', White Paper, 1995. M de Virville, 'Donner un nouvel élan à la formation professionnelle'. Report by the Minister of Labour and Social Affairs. La documentation française, Paris, 1996.

23) On different methods of managing skills in various countries, see: D Colardyn 'La gestion des compétences', PUF Paris 1996. On the inferior status of 'second chance' certificates, and diplomas, in France, see J-F Germe and F Potier 'Own-initiative continuing training in France: decline or renewal?' in the *European Journal Vocational Training* No 8/9, May/December 1996/II/III, pp 50 - 57. More generally, it is not by chance that this question of the shift of 'certification systems' away from qualifications has been questioned from a whole range of points of view. See 'What do we know? Measuring knowledge, skills and competences in the labour market' *European Journal Vocational Training* No 12, September-December 1997/III which is given over to this issue in its entirety.

24) M Fournier and V Bedin 'L'ingénierie de formation entre traditionalisme et modernisme' in *Revue Formation Emploi*, No 63, July-September 1998, pp 43 - 59.

25) This problem is well known to those managing youth schemes, in particular the 'Local Missions' and the PAIO (Reception, Information and Guidance Centres) set up in 1982 at the initiative of the Mauroy government in order to help the most disadvantaged 16-25-year-olds to find jobs. The Local Missions have been placed in a difficult position by the transfer of the corresponding training to the regions, in 1993, under the five-year Law on employment, which makes it difficult for them to participate in programmes such as "TRACE" (Employment Access Routes) which is intended to provide, every year, some sixty thousand young people facing problems with personalised help lasting a maximum of eighteen months.

traditional types of training. It requires agreements, difficult to set up, between the enterprises concerned and the education system with the latter then exerting control over the training given and awarding a diploma²¹.

Inadequacies of the system as perceived at present and problems of development

Those aspects of the French education system most directly linked to its role in defining people's status were, in the past, in relative harmony with the efficiency of the production system. The combination of top-flight designer-engineers and skilled 'operatives' able to cope with the practical side of production proved to be efficient for a long time. Changes in production methods, and in particular the calling into question of Taylorist production methods, have changed this situation (d'Iribarne, 1989). Solutions are being sought for the problems that this has created. Those solutions that seem most fruitful from a strictly economic point of view are often difficult to put into practice, however, while those changes that can be most simply implemented are not necessarily the most propitious.

If we leave aside, in this article, all the issues connected with teacher training and training in the legal and health fields, and focus on those issues that concern enterprises most directly, a number of problems can be seen at various levels of the education system. These problems cannot be expressed simply in terms of a lack of investment in human capital, represented by years of education. It is more the case that investment that is in keeping with a symbolic approach may not be very well geared towards an approach of economic efficiency. This explains the particular debate that has taken place in France about the place that could be occupied by a 'certification of vocational abilities' awarded by enterprises, alongside diplomas, in the management of the labour market, from the point of view of both 'lifelong education' and of 'breathing new life into vocational training'²². In comparison with other countries such as

the United Kingdom, these debates cannot be understood without taking into account all the preceding comments and in particular 'societal' differences in managing skills and the key place of the diploma in enterprise management practices, despite all their talk about the key nature of 'competencies'²³.

Problems raised by low qualification levels

These problems are increasing as time passes. The proportion of students leaving school at the lowest levels (VI and Va to use the jargon of French educational studies) and without vocational training, is remarkably resistant to increases in the average level of education. This is increasingly leading to 'rejects' from the education system who leave school (at 16 after compulsory education) having gained little from the years of school that they have attended, a substantial proportion of whom (even though there is no agreement about the figures) have not even gained an appropriate mastery of the basics of writing, reading and maths. Strictly from the point of view of skill acquisition, it might well be possible to find a solution to this problem by designing some kind of appropriate teaching of a more hands-on type for people who do not do well in 'normal' courses. This would, however, seriously question the role of schools as the guarantors of the symbolic equality of citizens, and would from the outset confirm that some people are lesser citizens than others, which seems unthinkable.

While compromise solutions are being sought that attempt to take account of both practical and symbolic imperatives, they are very difficult to find. Progress has been made as regards the design of suitable teaching methods for adults with educational difficulties and in continuing vocational training²⁴. This presents less of a problem, however, as it does not have the same the symbolic dimension since what is involved is teaching that is aimed clearly at producers and not at citizens. A similar type of education is being developed for young people under the 'youth measures' for 16-25-year-olds, placing the emphasis on alternance training for those people who cannot find a 'normal' job on the labour market²⁵. These measures



are being criticised, however, on the grounds that they provide enterprises with 'cheap' labour.

People successful in vocational education at a level below university (levels V and IV) face different problems. The concern to improve the educational nobility attached to this education and to keep it independent from enterprises means that the emphasis is being placed on theoretical aspects and anything that involves practical dexterity is being disregarded and learnt 'on the job'. In practice this is a regular choice for all the vocational training streams: their status tends to be regularly 'upgraded' by reducing 'practical teaching passing on expertise' and increasing theoretical teaching that places the emphasis on 'general knowledge' much to the displeasure of SMEs who see the immediate 'employability' of young people reduced by the same extent (Campinos-Dubernet, 1998).

It might have been imagined in the past that the modernisation of the production system and the development of automation would have caused this expertise to become less important and that the replacement of workers trained chiefly on the job by workers with a much more theoretical kind of education could only be advantageous. It would seem now, however, that there is a need for a solid combination of practical expertise and theoretical knowledge. Neither schools nor enterprises seem well equipped to provide this combination and, bearing in mind what we have said above, it is not easy for them to cooperate at an overall institutional level that goes beyond the many instances of cooperation that may be forged here and there by local initiatives²⁶.

This training is, moreover, being developed in service sector streams to an extent that is out of kilter with the needs of the production system; this is being reflected by a worsening of employment conditions where the pay of those with service-sector CAPs or BEPs tends for instance to be the same as that of young people who have left school with no qualifications²⁷. This situation is helping to strengthen the resolve of those who return to the system to go on to higher education.

Problems on the border between mass and elite education

This border was unoccupied for a long time, in the sense that there was practically nothing between long higher education courses at universities or 'grandes écoles', clearly intended to educate the elite, and education at much lower levels; there were, moreover, no bridges between these various streams. The development of 'baccalauréat+2' schemes, i.e. the BTS (Higher Technicians' Certificates awarded by technical lycées) and the DUT (University Technology Diplomas awarded by universities in university technology institutes), now means that this border is heavily occupied. These qualifications are largely in keeping with labour market needs since course contents place a major stress on technological knowledge. Their holders are snapped up on good employment conditions, especially in industrial streams. Their social identity nevertheless raises questions.

The type of knowledge that is taught does not enable them to gain access to the elite; this is evident, within enterprises, from the fact they find it difficult to gain access to the 'cadre' (executive) category (a specifically French category which has no justification other than status). It is enough, however, for them to escape from the 'common herd' of those who do not possess technological knowledge and to enable them to gain direct access to the 'intermediate professions'. This knowledge itself has a status midway between theoretical and practical knowledge which explains why it occupies a pivotal position among those desires for reform that fail to take concrete shape²⁸. If they leave technical posts where the frontiers between ranks are relatively fluid, they are then in a difficult position in the enterprise. Hopes of making them into a link in the chain of command have largely been disappointed. In these circumstances, even though it had been said from the very outset that people attending this kind of training would not go any further, increasing numbers of these people are continuing their education in order to acquire a genuine university qualification and therefore a clear place in society²⁹.

There is a high failure rate among those who return to university; many do not

26) This question of the transition from 'local experiences' to 'changes in collective standards' is in our eyes a key question in France, judging by the number of times it recurs. These problems of transition which reflect a 'blocked' society are no more than the reflections of those compromises between rules and practices that can operate only when they are tacitly perceived as non-existent or practically non-existent. This is true for instance of restricted intakes in university streams which are widespread but which are acceptable only if it is clearly trumpeted elsewhere that entrance selection is not tolerable in the 'University of the Republic'.

27) See the findings of the CEREQ survey of the situation in 1997-98 of young people who left the education system in 1992. Gaps between their jobs and the qualification levels they had obtained and depending on whether or not, at a given level, the qualification had been obtained, confirms, were this necessary, that in France the qualification is the main criterion that employers use when recruiting for jobs.

28) These problems are clearly evident in all the 'higher technological' courses which do not manage to set themselves up as coherent bac+2 or bac+5 streams. The hesitations that appeared at the time of the announcement by Claude Allègre of an 'alignment' of French streams on the European 3, 5, 8 (years after the baccalauréat) model offers a further illustration of this: 'While Ministers and experts have been tearing their hair out for ten or so years to find a way of introducing a 'technological stream' as highly thought of as traditional general education, it seemed almost as though the labour market had already set up (...) a new technical elite'. Supplement to the newspaper *Le Monde* 'Choisir ses études, DUT et BTS', Thursday 18 February 1999, p 11.

29) The proportion of DUT holders continuing their education full time in the year following the award of the diploma therefore increased from 33% in 1984 to 45% in 1998; *Cereq bref*, December 1992. Since then, this percentage has continued to rise to 63% in 1992. There is even a risk that it may become a general trend with the current '3, 5, 8' reform project which would add a further year after the bac+2.



“Renewed interest, on paper at least and inspired by the German model, is now being shown in apprenticeship, which had been in sharp decline over the last twenty to thirty years. It is thought that apprenticeship will provide young people with few qualifications (...) with better job prospects. In practice, its development is being impeded by the social image of apprenticeship which is not very productive from the point of view of educational nobility.”

obtain a degree or only obtain one that has little value in the labour market. The Republican view that everyone should be able to gain access to a high level of educational nobility makes it very difficult to introduce any kind of university entrance selection (with the exception of faculties of medicine where a much more professional approach is taken) in an official and widespread way. Solutions of a German or Swedish kind, where places in higher education are regulated on the basis of occupational outlets are difficult to envisage in the French context, outside of streams with clear-cut vocational goals. The development of ‘short’ university streams and professionally-oriented streams has gone some way towards resolving this problem, with the limits that have been discussed above.

What might be seen as the natural trend in the system is a kind of forward leap in the raising of educational levels, marked in particular by the famous slogan ‘80% of baccalauréat holders’ (in an age group). This slogan has been justified by a comparison with the economic success of Japan and the level of education of Japanese workers. It has been particularly successful among the ‘forces of progress’ as it satisfies the desire for a more democratic society by providing wider access to education that offers a high level of educational nobility. Its effects as regards the match between education and employment are, however, highly questionable.

When the school boom started in France after the Second World War, a large proportion of those who occupied ‘qualified’ posts had a level of education which, as customarily perceived, was lower than the level of the post that they occupied. As a result of growth, the manager category could not be filled completely from grande école or university educated people, most of those who occupied skilled worker posts had had no real vocational training, etc. In the first instance, the raising of levels of education made it possible to offset the lack of qualifications and to move in the direction of a ‘normal’ correspondence between levels of training and levels of employment (i.e. between the nobility of jobs and that of the people in them). Gradually, however, with increases in the number of people

with qualifications and the slowing down of growth, increasing numbers of people have had, to find a job, to accept ‘deskilled’ posts where they are demeaned. This kind of development, which disturbs the operation of the labour market, may well play a part in the high level of unemployment in France (d’Iribarne, P., 1990). Many young people are being swallowed up by ‘dead-end’ education which is socially acceptable (especially general secondary education) while other types of education, more likely to lead to a job, are being neglected.

This raising of the level of theoretical education does not necessarily promote the development of the solid link between theoretical and empirical knowledge that enterprises really need. It is for this reason that current research into a better match between education and enterprise needs is proposing a set of reforms of the education system whose actual introduction is being complicated by the symbolic aspects of education.

Renewed interest, on paper at least and inspired by the German model, is now being shown in apprenticeship, which had been in sharp decline over the last twenty to thirty years. It is thought that apprenticeship will provide young people with few qualifications, among whom the unemployment rate is currently substantial, with better job prospects. In practice, its development is being impeded by the social image of apprenticeship which is not very productive from the point of view of educational nobility. In Alsace, however, where social perceptions owe something to German culture, apprenticeship is being viewed much more favourably than in the rest of the country. Since 1987, however, the law has allowed universities and schools to offer their students apprentice status in order to consolidate their vocational training through experience in enterprise, the aim being to ‘give apprenticeship a noble status as well’ (Faujas, 1999). After a difficult beginning, the number of apprentices in post-baccalauréat training more than doubled between 1994-1995 and 1997-1998 reaching 31,000, i.e. 10% of all apprentices. They tend to be concentrated, however, in ‘small’ private schools, working in the commercial area, that enable ‘disadvan-



taged' young people to attend costly education schemes.

Similarly, there are plans to develop a stream of engineers who return to education after a number of years of vocational experience (stream known as the Decomps stream after the name of its creator). The establishment of this stream is coming up against problems. Will people trained in this way be 'real' engineers or 'cheap' engineers? Will they have the title of 'engineers' or of 'technical engineers' thereby showing that they form a relatively inferior subgroup of the superior category of managers? Their training, lacking nobility, should be geared towards the manufacturing tasks, which also lack nobility, for which they are destined. How-

ever, at a time when there are demands for a more democratic education and a more democratic society, is it acceptable to act in this way?

Overall, and looking from a European point of view, many efforts are still needed, at all levels, to adapt the French education system to society's current needs, while continuing to take account of the specific features of French society. This is true of 'mass education'. It is also true of elite education as can be seen from the violent criticisms of the direction of the Ecole Normale Supérieure which decided this year to inaugurate a competition for European students, in English, and not involving transition from a 'preparatory class'³⁰.

Bibliography

Campinos-Dubernet M., (1998): *Standardisation des diplômes et diversité des conventions de productivité des entreprises*. GIP Mutation Industrielle. Multigraphié, Paris, 27 p.

Cheminade J., (May-June 1998): Le mouvement des Arts et Métiers: 'Hausser l'ordre du monde', in *FUSION* No 71, pp 27 - 37.

d'Iribarne A., (1989): *La compétitivité, défi social, enjeu éducatif*, Paris, presses du CNRS.

d'Iribarne P., (1990): *Le chômage paradoxal*, Paris, Puf.

Duby G., (1978): *Les trois ordres ou l'imaginaire du féodalisme*, Paris, Gallimard.

Elias N., (1939): *La civilisation des mœurs*, Calmann-Lévy, 1973.

Faujas A., (January 1999): 'La dérive élitiste de l'apprentissage' in *Le Monde*, supplément 'Initiative' 19.

Gehin J.-P., Méhaut P., *Apprentissage ou formation continue? stratégies éducatives des entreprises en Allemagne et en France*, Paris, l'Harmattan, p 73.

Maurice M., Sellier F., Silvestre J.-J., (1982): *Politique d'éducation et organisation industrielle en France et en Allemagne*, Paris, PUF, 1982.

Hillau B., (October-December 1998): 'Progrès technique et acteurs du changement dans la soierie lyonnaise au XVIIIème siècle', in *Revue Formation Emploi*, No 64, pp 5 - 24.

30) C Cohen-Tannoudji and S Haroche: 'L'ENS doit s'ouvrir sur l'Europe' in *Le Monde*, 11 March 1999, p 15.



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The funding of vocational education and training – an international comparison of objectives and impact

Occupational skills mean better career opportunities for young people and help them ward off the threat of unemployment. The availability of qualified skilled workers enhances their employers' competitiveness. By promoting a broad spectrum of financing for vocational skills acquisition, educationists hope to achieve political aims and to solve economic, social and labour market problems.

Political dimension

In recent years policy-makers have increasingly focused their attention on initial and continuing vocational training. This trend can be observed in many European countries. As a result, the significance of vocational training has increased. Politicians are convinced that occupational qualifications provide young people with good career opportunities, helping to combat unemployment or the threat of unemployment. By the same token, they are convinced that the availability of qualified skilled workers increases enterprises' competitiveness. This assessment of the positive impact of vocational education and training has increasingly stimulated political activity geared to heightening its impact as a significant element of a comprehensive problem-solving strategy. Specific measures implemented in this connection concentrate mainly on the objectives, content and quality of initial and continuing vocational training, but also on funding.

Basically, the financing of vocational education and training is part of a national regulatory system within which the responsible authorities decide, in accordance with the social consensus, to what extent the State, enterprises or individuals will bear direct and indirect costs, regardless of the expected or real benefits they accrue. Thus, within the financial systems of initial and continuing vocational training, the generation, channelling and targets of financial flows to or from potential trainees and

providers are determined by mechanisms of organisation and the deployment of appropriate instruments. The pattern of overall spending on initial and continuing vocational training is a funding structure which fails to deliver sufficient, satisfactory training to individuals and enterprises, especially when external conditions change, through internationalisation of the labour markets or technological upheaval, for example. Such situations demand the redirection, concentration or augmentation of financial flows for the benefit of specific target groups, regions or sectors of industry. Political reactions to such measures vary. Critics view a lack of flexibility in the existing funding system as the essential cause of adverse developments, and call for far-reaching changes to traditional systems or even reject them entirely. Pragmatists put their faith in supplementary, state-financed promotional programmes which leave the funding system intact. They hope that promoting a broad spectrum of financing schemes – some of which are based on agreements between employers and trade unions to help young people acquire vocational skills and to help employees' and unemployed people to acquire, adapt, enhance or upgrade skills and qualifications – will achieve political aims and solve economic, social and labour market problems at the same time.

The German debate over apparently problem-solving funding regulations for vocational education and training often cites pilot projects in neighbouring countries as examples. Therefore it seems appropriate and useful to make a comparative



analysis of financial regulations and instruments in four European countries (Denmark, France, the United Kingdom and Germany).

State regulations and programmes

Observation of the role of the State as provider and regulator of financing in the four countries reveals the following picture:

The State bears most of the cost of initial and continuing training in full-time schools. The scale of involvement differs from one country to another, depending on the basic institutional system.

In Denmark and France enterprises are required by law to contribute to the funding of vocational education and training – sometimes taking into account enterprise size, but regardless of whether or not they are active in providing skills. In France, all enterprises have to make a fixed compulsory contribution which covers all aspects of initial and continuing vocational training. A tax payment is imposed on enterprises failing to comply. In Denmark all enterprises are legally required to pay a levy, but only for initial training. The money goes into a fund which reimburses training enterprises for phases of training not related to the workplace. Continuing vocational training in Denmark is financed from a labour market fund which is currently fed by legally stipulated contributions by employers and employees. Until 1995 it had been financed entirely from taxes.

In Germany and the United Kingdom enterprise-based initial and continuing vocational training activities operate on a voluntary basis and are financed by individual enterprises. There are no legally binding financial obligations for enterprises not actively providing initial or continuing training. In Germany, part of employers' and employees' contributions to unemployment insurance goes to finance non-enterprise-based training for disadvantaged young people and for skills upgrading for the unemployed. This could be considered indirect cost sharing, but only in the broadest sense.

In all four countries the State bears some part of the cost of out-of-school training in the form of direct and indirect financial participation. The United Kingdom makes the biggest State contribution, through the funding of the NVQ (National Vocational Qualification) and TFW (Training for Work) programmes, which are the recommended standard programmes. Participants in these programmes can acquire various levels of qualifications by passing standardised examinations. In Denmark the share of State financing towards enterprise-based initial training is approximately one quarter of the money generated by an enterprise levy, while the State still provides the bulk of total funding for continuing vocational training at present, although the amount is shrinking.

In Germany, as a rule, the State refrains from directly funding enterprise-based training through subsidies. According to a ruling by the Federal Constitutional Court (BVerfG) of 10 December 1980, employers, as a social group, have a duty to ensure continuous provision of a quantitatively and qualitatively satisfactory variety of training places. However, owing especially to the long-term difficulties in providing enough initial training places in the east German *Länder* [states of the Federation], this principle has been constantly disregarded. Federal government bonuses are awarded for training contracts, and the federal and *Länder* governments finance Community initiative programmes supported by the EU, which replace some enterprise-based training. The *Länder*, in particular, finance a number of programmes for target groups or specific measures to alleviate acute hardship. Long-term State aid focuses on investment and cost sharing in central vocational training workshops which essentially supplement the in-company training offered by small and middle-sized enterprises.

Finally, German State aid to participants in continuing training takes the form of grants for career advancement, scholarships for particularly successful participants in initial training, or low-interest loans.

In France the State finances training measures for labour market problem groups from tax revenues and rewards enterprises

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especially active in providing training with tax bonuses. The resulting tax losses add up to a considerable State financial contribution.

Social-partner regulations

The involvement of the social partners in the organisation of initial and continuing training funding is especially characteristic of Denmark. It features national and regional collective labour agreements to reduce residual individual contributions to financing. Collective agreements on the funding of initial training in Germany are essentially restricted to the construction industry. In some sectors the unions have recently agreed to a reduction or freeze on trainee pay or refrained from other general wage and salary demands in return for a commitment by employers to increasing initial and continuing training efforts. In the end this basically means a partial increase in trainee contributions to financing through the sacrifice of material gains.

In France, money from statutory training-related taxes paid by enterprises, which amount to 2.5% of company payrolls, is administered partially by funds agreed on at regional and/or sector level and allocated to training enterprises or institutions as grants. In the United Kingdom, where vocational education and training are financed and implemented mainly by individual enterprises – although not in the form of systematically regulated courses, as in Germany – the influence of the trade unions is missing, especially since their role in policy-making was deliberately trimmed back in the 1980s.

Individual financial contributions

In all four countries the share of direct or indirect costs borne by participants in training is a result of decisions by the State and, to a lesser extent, by the social partners and enterprises. In the field of continuing training to upgrade skills, in particular, the current general political climate significantly affects the scale of funding to be provided by the individual. In

times of public budgets deficits and crises on the labour market, policy-makers tend to demand a higher personal financial contribution from well-situated groups of people. No substantial drop in interest in education is expected in conjunction with such a policy. Thus, in Germany, the Federal Labour Office has completely stopped using money from the unemployment insurance fund, paid in equal parts by employers and employees, to subsidise further training for occupational advancement. This was necessary in order to concentrate support measures financed from employers' and employees' social insurance contributions on groups affected by unemployment or the shortage of training places. The total loss of further training for occupational advancement was softened by legislation on partial funding by the State, which, for reasons of labour market policy, acts as deficiency guarantor for continuing training funding as a labour market policy measure.

Countries other than the United Kingdom and Germany are not known to grant tax relief to participants in education for tuition fees for programmes which are only partially subsidised or not subsidised at all. Here the State not only directly but also indirectly co-finances individual education.

Joint versus individual enterprise funding

A new round in the two-decade old German discussion between trade unions and employers on a reform of training funding was triggered by growing shortages of in-company training places as a result of a recession, and the simultaneous demographically engendered growth in demand for training opportunities. The trade unions maintain that financing by individual enterprises should be replaced by joint financing, which includes enterprises offering little or no training, as in Denmark and France. The employers categorically oppose any such State intervention.

When applying elements of the French and Danish model to Germany it should be remembered that the supply of training places each year in Denmark is up to



15% below demand, and the enterprise-based share of overall training is considerably below the German level anyway. The success of transplanting financing mechanisms from other countries depends primarily on whether vocational training is a priority for the beneficiaries. In Denmark, and even more so in France, the percentage of in-company training (trainee to employee ratio) is relatively low compared with Germany (6% compared to 2.5% in Denmark). Collective, jointly organised funding probably has a stimulating effect where enterprise training performance is low, although there is no empirical evidence to prove it. There are some doubts about its impact in Germany, where the comprehensive system of initial training pervades all occupational fields. The great majority of training places are provided by enterprises without the need for financial incentives because it is the tradition and also because of the expected returns. The system probably leaves only limited scope for mobilising more activity.

However, even German employers do not necessarily regard a levy procedure which would distribute costs more evenly between training and non-training enterprises as a fundamental contravention of the system. This is demonstrated by collective labour agreements and chamber regulations for financing non-enterprise-based phases of initial training to ensure the quality of training, especially in crafts.

Tax incentives

A survey of modes of financing in the four countries reveals that no country except France has State fiscal policies to provide incentives for improving, guaranteeing or enhancing the quality and quantity of vocational education and training.

The EU Commission sees scope for action in this political field. In its 1995 White Paper on 'Teaching and Learning: Towards the Learning Society' the Commission's fifth objective is to 'treat capital investment and investment in training on an equal basis' and it calls for appropriate action. The aim is to make clear that business spending on training is an investment in human capital which for tax purposes

should be treated the same as capital investment.

In Germany, the French tax credit for enterprises with above-average expenditure on initial and continuing vocational training is considered the most effective, just and transparent form of all tax preferences. The same financial incentive could be achieved by deducting a fixed sum from the tax debt for training enterprises (e.g. for the provision of additional training places).

Vouchers

Training vouchers can be employed as incentives to stimulate demand. They can be made available to young people and adults in the form of a guarantee of payment by public or private institutions for potential trainees.

However, they cannot make up for gaps in the supply of enterprise-based systems of vocational training any more than fully financed programmes for the promotion of training places. The level of demand could possibly be sustained by vouchers covering part of the cost, but only if potential trainees were willing to bear the residual cost. In view of the scarcity of funds this would even make it possible to increase the number of people receiving support. However, it entails the latent risk of a falling demand for education and training, and thus the risk of a future skills deficit, should potential participants consider their financial contribution too high and lose interest. This solution to funding problems tends to make initial and continuing training a personal issue. It would primarily affect persons at a disadvantage in the labour market. A voucher system has recently been introduced in the United Kingdom to strengthen the motivation of potential trainees and their position in the labour market, and thus possibly to refocus programmes administered by training and enterprise councils. This may not work, however, as long as contracts between the government and the training and enterprise councils are not revised and the capacities of training institutions increased. The use of vouchers, both for potential training consumers and for pro-

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“In view of the political significance accorded everywhere to the funding of vocational education and training, the question arises whether this state has come about as a result of using inappropriate instruments of funding, or whether it is, as is often claimed, the expression of conceptual and organisational weaknesses in the system of vocational training.”

viders, could prove much more effective in the sphere of continuing training.

Tentative evaluation

When politicians are under pressure to act in the sphere of vocational education and training, researchers are required to provide conclusive answers to questions relating to the efficacy of financing procedures and tools. In this context it becomes abundantly clear that comprehensive, systematic and longitudinal empirical data are in short supply.

It also becomes apparent that the ‘success’ of vocational education and training cannot be measured, because there is no generally accepted set of criteria for its evaluation (for example, is finding a job proof of the ‘success’ of training?) and the causes of success or failure (e.g. poor training but good connections) cannot be filtered out.

Apart from the necessity for employing generally valid, isolated indicators of success, questions on the operation and impact of funding regulations and tools presuppose clarity as to expenditure and costs. Only then would it be possible to state whether

- the individual’s desire for skills matches the skills needs of enterprises,
- a better job qualification can be achieved,
- distortions of competition among different-sized enterprises and among sectors and regions are more likely to be cancelled out or reinforced.

No EU country fulfils this set of conditions at present, either overall or in part. In view of the political significance accorded everywhere to the funding of vocational education and training, the question arises whether this state has come about as a result of using inappropriate instruments of funding, or whether it is, as is often claimed, the expression of conceptual and organisational weaknesses in the system of vocational training. This question can be answered with a clear ‘no’, since it reflects a much too narrow viewpoint, inadmissibly instrumentalising vocational education and training policies with their different funding regulations as

deciding factors in solutions. Actually they can only help offset existing imbalances within the framework of a comprehensive labour market policy.

Germany

Evaluating the quantitative effect of any funding procedure would mean establishing the volume of funding it stimulates in relation to demand. Two German examples will illustrate how difficult it is to obtain reliable data on the degree of efficiency.

In Germany there was a legally controlled levy system from 1976 to 1980. The government could levy enterprises when too few training opportunities were made available. The idea was that revenue from this system would support additional enterprise-based training contracts. Although circumstances dictated application of this regulation, in fact it was never applied. While enterprises did offer a growing number of training places during the time the regulation was in force, overall demand was still not met. Expansion stopped, however, after the law was declared unconstitutional on procedural grounds. Up to now, no scientific investigation has been undertaken in Germany to find evidence of a causal relationship between the threat of levy financing and growth in provision of training places by enterprises. However, the government and the parties in power at the time never tired of emphasising the ‘sword of Damocles’ effect of this regulation.

Since the mid-1970s the construction sector has operated a levy funding regulation based on a generally binding collective agreement. In times of great demand for training a large number of contracts were concluded, but as general demand fell in the mid-1980s the number of contracts dropped by up to 40%. However, at no time since 1974 has the number of training contracts concluded in the construction sector fallen to the pre-levy level, when the social partners were forced to intervene.

The relationship of cost and quality in vocational education and training is considerably more complicated to evaluate. In 1974 the Expert Commission on ‘Costs



and Financing' (Edding Commission) worked out a method of evaluating the German system of training with the aid of input and output quality indices. The Commission defined input quality factors as organisation, technology, intensity, personnel and methods of training. They classified the output qualification according to four criteria of aptitude achieved on completion of training: formal, occupation-related, work-related and social aptitude. No evaluation of financing mechanisms was ever conducted on the basis of this methodological structure, because of the time and effort it entailed.

United Kingdom

The financial management of training in the United Kingdom has been critically investigated. State funds are allocated to the training and enterprise councils on the basis of a points system. The main criteria are

- ❑ cost of different training programmes;
- ❑ successful completions of training per 100 participants;
- ❑ number of applicants who wait more than eight weeks to start a training programme;
- ❑ number of participants actually entering employment or further full-time education per 100 participants.

The study (Felstead, 1994) concludes that this points system reduces financial incentives for high-cost and high-quality training programmes and favours the cheapest, easiest and shortest training courses. The condition attached to government funding, to achieve better and more efficient returns on training through the financing of training programmes, in practice achieves the opposite.

France

A survey commissioned by the national office of statistics (INSEE) in France (Goux, 1997) revealed that, between 1989 and 1993, 25% of the employees interviewed had participated in continuing training measures, whereas in the period from 1973 to 1977, i.e. shortly after the introduction of a statutory minimum con-

tribution to the financing of continuing training, the rate was only 11%. The same study also showed that the income of participants rises after continuing training measures by an average of 2.5%.

International comparison

Comparative evaluation of the different national financing regulations seems completely impossible, and also superfluous. Vocational education and training systems have developed over time. Their institutional and organisational structures depend on specific socio-economic framework conditions and philosophical and cultural foundations which make comparison extremely difficult, if not impossible. The difficulty involves serious methodological problems. In-depth knowledge about the diversity of the relevant constituting foundation network is insufficient; the understanding necessary for a correct approach and adequately framed questions is not given. For these reasons the OECD aborted an unsuccessful attempt at a similar investigation in the 1980s.

Even if no comprehensive solution to current problems is possible in the short term, concrete activities which have been initiated across Europe should still provide substantial gains in knowledge in the medium term. The financing portraits of the individual EU Member States instigated by CEDEFOP can make the network of funding from different sources with all their tributary financial flows more transparent than it has been up to now. At the same time they will provide important information for a human resource accounting as advocated in the European Commission's 1995 White Paper.

However, there is no easy recipe for a system of funding which would ensure the greatest possible efficiency in satisfying vocational training, employment, economic and socio-political demands. Funding regulations can only achieve maximum performance levels within the control and organisational framework of the relevant education and training systems if they are based on a broad social consensus. This requires political decisions which have to be endorsed at the national level by all the groups involved in vocational education and training.

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Bibliography

Bodenhöfer H.-J., (1985): Probleme der Bildungsfinanzierung – Zum Stand der Diskussion, in: Brinkmann G., (ed): Probleme der Bildungsfinanzierung, Schriften des Vereins für Socialpolitik, Gesellschaft für Wirtschafts- und Sozialwissenschaften, Neue Folge, Volume 146, Berlin 1985

Federal Institute for Vocational Training – the General Secretary – (ed), (March 1982): Finanzielle Förderung der beruflichen Bildung, in: Berufsbildung in Wissenschaft und Praxis, special edition,

Felstead A., (September 1994): Funding Government Training Schemes: Mechanisms and Consequences, in: British Journal of Education and Work, Volume 7, Number 3,

Goux D., Maurin E., (February 1997): Train or Play: Does it Reduce Inequalities to Encourage Firms to Train their Workers?; INSEE working paper presented at the CEPR Workshop, 'Rising Inequalities', La Coruna 14

Heidemann W.: Finanzierungsregelungen der Beruflichen Bildung im europäischen Vergleich, in: Münch, Joachim (ed): A European comparison of financing arrangements for vocational training), special publication of the European Trade Union Institute

Jeger E.: L'investissement des entreprises dans la formation continue et son efficacité, no place or date of publication

Kath F., (1995): Finanzierung der Berufsbildung im Dualen System, Probleme und Lösungsansätze, Berlin and Bonn

Kath F.: Finanzierungsquellen und –arten betrieblicher Bildungsarbeit, in: Münch, Joachim (ed), ibid

Kath F., (1998): Berufsbildungsfinanzierung, in: Dybowsky, Gisela: Aspekte beruflicher Aus- und Weiterbildung im europäischen Vergleich, Bielefeld

Rode J.: Ausbildung durch Arbeitgeber-Umlage: Das dänische Modell, no place or date of publication

Sachverständigenkommission Kosten und Finanzierung der beruflichen Bildung, (1974): Kosten und Finanzierung der außerschulischen beruflichen Bildung (Abschlußbericht), Bielefeld

Schmidt H.: Die Finanzierung der betrieblichen Berufsausbildung als Gegenstand der Berufsbildungspolitik in der Bundesrepublik Deutschland mit Ausblick auf Entwicklungen in anderen Industrienationen, in: Brinkmann G., (ed.) ibid

Sellin B., (1995): Finanzierung der beruflichen Bildung – Internationale Erfahrungen, in: Münterfering F., (ed.): Jugend-Beruf-Zukunft, Marburg



New efforts at reform of the Swiss vocational training system



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Some structural features

Vocational training is one of the few areas of education in Switzerland which are regulated at national level. While the primary schools, secondary schools, schools of engineering and other specialised technical colleges, as well as most of the universities, come under the governments of the 26 cantons, initial and continuing vocational training are a matter for the central authorities. The subject-matter of training courses and other aspects of vocational training set out in the Swiss Law on Vocational Training of 1978 are determined by the employers' associations and trade unions in consultation with a government body, the Swiss Office for Training and Technology (Bundesamt für Bildung und Technologie - BBT).

Implementation in the individual cantons is based on specific introductory Laws and in the case of industrial, trade and commercial occupations takes account of local and employers' needs. A similar Law governs vocational training for agriculture. Only regulation of the caring professions is entrusted by the cantons to an association, the Swiss Red Cross. The generally markedly federal character of the Swiss educational system means that any necessary coordination in other areas of education takes place on a voluntary basis at inter-cantonal level. Matters relating to vocational training, on the other hand, are centrally regulated so as to ensure, for example, that a carpenter has received the same or equivalent training regardless of whether he comes from the area of Lake Constance or of Lake Geneva. To this end training regulations are drawn up stating the appropriate requirements in terms of knowledge and skills, and stipulate the

examination procedure to be followed, the curriculum, and how instruction is to be organised. Although the vocational schools are financed by the cantons or communes, they must adhere to the rules regarding the content of instruction laid down by central government (Wettstein 1994). Unlike the German dual system of vocational training, under the Swiss system general education and general subjects taught by the vocational schools are regarded as a component of and given due weighting in the final examination on completion of training.

The important role played by both the central government authorities and the two sides of industry, particularly employers' organisations, in guiding and regulating the form of vocational training is the result of a 'historic compromise' reached by the representatives of smaller firms, domestic-oriented industry, non-profit organisations, and subsequently also representatives of employers and employees and the central government authorities. The parties concerned initially sit down round a table and discuss a wide range of questions connected with vocational training, after which the necessary points are embodied in legal ordinances or legally binding agreements. Unlike the situation in Germany, research still plays little part in determining the content of training regulations.

Historical aspects of the Swiss vocational training system

With the introduction of freedom of trade and the exercise of crafts, the traditional manual trades and smaller businesses

The 'dual system' is probably nowhere so firmly established as in Switzerland. Almost three-quarters of pupils ending their secondary schooling each year still go on to complete a course of vocational training which combines academic education with on-the-job learning. This article describes how the Swiss vocational training system, which is not very well known abroad, has developed and discusses a number of recent plans for reform. Particular stress is laid on turning out students with a two-fold qualification known in Switzerland as the *Berufsmaturität*. All efforts at reform, which are currently being combined in a new law on vocational training, share the aim of enhancing the attractiveness of vocational training.



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found themselves under pressure. Industrialisation, which came early in Switzerland compared with other countries in continental Europe, led many young people to prefer a wage-earning job in industry to apprenticeship under a master craftsman, particularly since remuneration and working conditions looked very promising. The abolition of the requirement of membership of a craft guild as early as the start of the 19th century, coupled with the technological lead and export orientation of young industries in the textile and engineering sectors plus growing competition from foreign products, generated anxiety among smaller-scale industry. Since protective tariffs were not feasible the Swiss Association of Industry founded in 1879, seized upon the idea of improving the situation through training measures. As a first step apprenticeship and master examinations were redesigned at trade association level. In the 1880s Swiss industry actually asked the government to intervene to maintain its competitiveness! The result was a reorganisation of the apprenticeship system. At the same time the central government authorities were asked to subsidise establishments providing further vocational training, specialist schools and public training workshops. This request was duly met and in 1884 the first government decision to subsidise vocational training centres was taken. After the turn of the century vocational training also became a focus of interest for worker and industrial associations for different reasons, among them the protection of apprentices, maintenance and extension of qualifications and civic education, resulting in the drafting of a federal Law on vocational training which, however, was not passed until 1930. Training on the job was supplemented by school attendance, which was made obligatory for all apprentices (Tabin 1989). Following the ideas of the Schweizerische Gemeinnützige Gesellschaft - a public benefit organisation - that were later developed by Heinrich Bendel, Gustav Frauenfelder and others, subjects taught included students' mother tongue and occupationally related arithmetic as well as drawing, commerce and civics.

Introduction of compulsory school attendance officially sanctioned the vocational education system as it exists today as a mixture of on-the-job learning supple-

mented by occupationally related instruction and general education in vocational schools. The subsequent Laws of 1964 and 1978 merely modified this basis.

Dominance of vocational training at upper secondary school level

Historically the principal focus was on securing a younger-generation follow-on for the trades, establishing uniform training standards and creating or reorganising schools to supplement skills acquired on the job. However, the Laws passed during the 1930s also paved the way for this type of vocational training to be extended beyond the manual trades to industrial production. Whereas at the beginning of the century apprenticeship was regarded solely as a principal means of protecting smaller firms, the dual system of vocational training now spread steadily to almost every area of activity at middle level.

Subsequently the curricula of the vocational schools were also altered. Whereas initially teaching at further training schools, which later developed into vocational schools for industry and commerce, was somewhat unsystematic, organised to take place in people's free time and hardly graduated at all - young people were often put in the same class as workers who had already acquired a certain experience on the job - in the 20th century the teaching in schools became organised by class year and was based on a clear plan of content and teaching aids. The subjects taught were also differently weighted. Vocational school teaching was no longer a repetition of subject-matter already taught at primary school, drawing and occupationally related commercial subjects, but more and more specialist occupational instruction with an expansion of general subjects that put considerable emphasis on specialisation and specific occupations.

This form of vocational training which in general occupied 1 or 1½ days of schooling a week and developed mainly in the industrial and commercial areas though also extending to other forms of training for agriculture and social work and the



caring professions, gained considerable emphasis after the Second World War. Up to the mid-1980s it continued to make steady progress to become the normal form of training for 16 to 19 year-olds who wished to follow their compulsory schooling with a course other than that offered by the *Gymnasium*. While initially vocational training tended to be confined to the working elite, during the 1950s, 1960s and 1970s it gradually became the norm for those completing their compulsory education. The fact that a large proportion of young people followed this route resulted in the proportion of young people who, having completed compulsory schooling, go on to a second stage of secondary schooling rising to over 90%, very high by international standards. The proportion of each class year opting for vocational training remains very high. In 1995 12,900 pupils gained a *Matura* certificate, equivalent to A Levels, and 3,100 gained teaching diplomas. This compared with 46,000 certificates of competence for industrial and commercial occupations and 4,000 qualifications for caring professions (cf. Borkowsky and Gonon 1996). The proportion of young people opting for *Gymnasium* or other general academic courses at upper secondary level is consequently still less than a fifth for Switzerland as a whole, while more than two-thirds of young people pursue the vocational route.

However, this type of vocational training, referred to internationally as the apprenticeship system, cannot only be regarded as a success because of its wide catchment. International comparisons show that the degree of youth unemployment and in general the integration of young people into the world of work is generally far better than in other countries of comparable economic status (Bierhoff and Prais 1997). Even within Switzerland, where the extension of the dual system varies considerably in regional terms, it is clear that young people are more successfully integrated in cantons which have a well developed vocational training system.

The dual system - which in Switzerland is, in fact, more generally referred to as the 'trinal system' because it combines learning at school, on-the-job and in training centres (cf. Wettstein et al. 1985) -

continues to prove attractive both to young people and to society at large.

Reforms in the 1970s: educational content and differentiation

During the 1970s, the less advantageous side of the dual system coin showed itself. The expansion of education that began in the 1960s and was expressed mainly in an increasing number of those attending *Gymnasium*, put the vocational training system under growing pressure to justify itself. Perceived weaknesses were its marked dependence on the economic cycle which limited the range of apprenticeship vacancies according to type of occupation, prestige and region, as well as the fact that vocational training operated more to the advantage of firms' profitability than to that of the young people themselves, who were often trained for occupations with little in the way of career prospects. A play on words in German transformed *Lehrstellen* (apprenticeships) into *Leerstellen* (Leer = empty) expressing the scepticism with which the teaching abilities of trainers in firms, who had very little in the way of formal training for the job, were viewed. To remedy the deficiencies it was therefore decided inter alia to set up government-run training workshops; these were schools offering full-time education and combining occupational theory with practice.

It was the restlessness of young people during the 1960s which led first to a revision of the basic legislation in 1963 and then to a broader reorganisation of vocational training by the Vocational Training Law of 1978 (*Berufsbildungsgesetz* - BBG). This Law, which was advocated by the trade unions, came into force in 1980 and is still in force today, has two characterising elements. The first is a further stress on the educational component of the dual system by clarifying and newly regulating the training required by training personnel in firms and in schools. The Law also provides the possibility of differences in occupational training. Young people who are less able can now follow a course leading to a semi-skilled job requiring lower manual skills and less theo-

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retical knowledge while the vocational schools offer better performers the possibility of additional theoretical instruction. The reform of the *Berufsmaturität* to which I shall refer later is based on this possibility of differentiation.

Current need for reform

Whereas until the mid-1980s the reforms introduced appeared to be having their effect, reflected among other things in an increase in the number of those opting for an apprenticeship, since 1985 the demand for apprenticeship vacancies has steadily decreased. Apart from the fact that, with the long-term economic outlook uncertain, young people now tend to regard an academic education as more worthwhile and especially as offering a wider range of options, the decrease in the number of those pursuing vocational training is also attributable to technology-based measures on the part of firms offering such training. As technology becomes more sophisticated on-the-job training becomes more expensive and complex. Firms are therefore less ready to offer vacancies for apprentices for cost reasons. Given this situation training policy is in need of more wider-ranging reforms in order to maintain or enhance the attractiveness of training. A whole raft of measures designed to do so have been taken since the early 1990s. General education has been revised following closely monitored experiments at school level. Instead of a fixed curriculum for commercial subjects, civics and teaching of the mother tongue the curriculum has been broadened to allow explicitly for project-based teaching. At the same time, a number of training regulations have been revised and brought up to date within a short period. Currently efforts are being made to devise a new form of commercial training that will be increasingly modular. The 1996 report by the Federal Council on vocational training which is the preliminary to a thorough revision of the Law, lists a number of necessary measures, among them improving transferability between vocational and general courses, greater cooperation with those concerned with adult education, testing the use of modules in continuing training, simplifying final examinations on

completion of apprenticeship training, and seeking new forms of cooperation between firms and schools to allow more flexible organisation of both school-based and on-the-job learning without thereby reducing the amount of school-based education. These many innovations will be based on a new Law on vocational training which at the time of writing (1998/99) is in draft form. A further change is that the caring and health professions are to be included, so that vocational training at upper secondary level and further vocational training will largely be uniformly regulated.

Introduction of the *Berufsmaturität* and specialist colleges of higher education

Probably the most important innovation in recent years has been the creation of a course providing a two-fold qualification, known as the *Berufsmaturität*. The word, which means ‘occupational maturity’, combines a certificate of competence in a given occupation and the entitlement to pursue a course at a specialist college of higher education. Thanks to a revision of the relevant ordinance this *Berufsmaturität*, which has existed since 1993, can be gained by students of technical, commercial, trade and crafts and design subjects and will soon also be available for the social work and caring professions.

Apart from the certificate of occupational competence importance is attributed to the ability to proceed to higher education. Appropriate additional instruction is provided for. Those following four-year technical courses have to attend 1 440 additional lessons in subjects going beyond the compulsory material on a second day of attendance at a vocational school. These are made up equally of languages, mathematics and the natural sciences and optional subjects that are specifically occupationally related. In general, therefore, the *Berufsmaturität* is acquired as part of an apprenticeship, although once an apprenticeship has been completed it can also be acquired while continuing to work or by following a full-time course lasting one year.



The main purpose of this innovation was by providing additional instruction to make it possible to combine an apprenticeship qualification with nationally regulated access to higher education. It was also to ensure that occupational training remained attractive to academically gifted young people with higher educational aspirations. Originally those concerned with education policy were thinking that this type of training would be taken up by about 15% of a class year, but this has so far turned out to be too optimistic. Even so, the number of those working towards a *Berufsmaturität* is increasing each year.

The introduction of the *Berufsmaturität* in Switzerland benefited from the transformation of specialised technical colleges (Höhere Fachschulen) in the technical and commercial area to specialist colleges of higher education (Fachhochschulen).

An important factor triggering the creation of the *Berufsmaturität* were namely the efforts made by the schools of engineering over many years to strengthen their position in the educational structure at both national and at international level. Quoting examples from other countries, the engineering schools demanded recognition as institutes of higher education utilising economic arguments. Swiss engineers, they claimed, were at a disadvantage internationally not only as regards salaries but also as regards contracts, which according to European quality criteria called for a university level qualification. In the view of the engineering schools the skills and qualifications obtained during an apprenticeship were also not sufficient for going on to study at a specialist college of higher education. Although apprenticeship as such was positively regarded in principle, it was criticised for its considerable lack of general and theoretical content. The demands made on teaching by the vocational schools it was urged, should be more stringent so as to render apprenticeship training a natural catchment area for the specialist colleges of higher education being created. This argument was considered by policy-makers to be convincing, among other things in the light of future labour market requirements, and appropriate steps were taken to bring in a Law on specialist colleges of higher education in 1996. Consequently, the

Berufsmaturität came into being as a result of the discussion on specialist colleges of higher education. The upgrading of specialist technical colleges to specialist colleges of higher education, which did not merely involve a change of name but also a marked upgrading of teaching content, was designed to match formal requirements at European level (Kiener and Gonon 1998).

Grounds for the reform

Looking back it is surprising how great was the spirit of innovation and how much effort to achieve reform was at work in the educational sphere during the 1990s. This was lent considerable impetus by a general questioning as to Switzerland's international role on the part of the Swiss themselves and of outsiders. Particular the discussion concerning Europe, which began with the question as to whether Switzerland should join the European Economic Area at the beginning of the 1990s, led to a thrust for reform in a great many sectors besides education after a long period of stagnation. This was undoubtedly due to a combination of an 'internal' need for reform of the education system and to external stimuli. As is usually the case with educational reforms, a great many demands by different parties coincided. Economic and employment considerations were less important at the time; it was not demands for adjustments taking account of new technology or in order to integrate young people into the world of work that were central to the reform process but more a desire to achieve a greater differentiation within the education system. It is hardly surprising that the chief protagonists were not the social partners, but the engineering schools, the vocational schools and representatives of the education authorities.

Two points should be made in conclusion:

The reform of vocational training in an international context

For a long time the Swiss education system was marked by an attitude of 'no-one is quite like us'. People were accustomed to regard international vocational

“The upgrading of specialist technical colleges to specialist colleges of higher education, which did not merely involve a change of name but also a marked upgrading of teaching content, was designed to match formal requirements at European level”



“As a result those responsible for vocational training saw the introduction of the Berufsmaturität as a way of creating a broader, improved vocational school training that would considerably enhance the position of vocational training as a major catchment area for higher education, thereby rendering vocational training more attractive to academically gifted young people.”

“The task of vocational training policy over the next few years will be to convince young people, and even more so employers, that this increment in school-based education not only operates to the benefit of the educational institutions concerned but will also bring benefits in the long term.”

training at best as connected with development aid or as a model which came off badly in comparison with Swiss education. The uniqueness of Switzerland, it was felt, made comparisons with other countries almost impossible. This traditional attitude has undergone a somewhat abrupt change since the early 1990s in the course of the debate about Europe. The question of ‘Euro-compatibility’ opened the door wider to international arguments, in education policy as elsewhere (Gonon 1998). This effect was boosted by the publication of a first OECD study on the Swiss education system (OECD 1991). This study, while unconvincing in some areas, was seen as having a positive reformatory effect. Vocational training looked at by outsiders in a broader than national context revealed more shortcomings than had hitherto been felt. The international dimension grew in importance because of the difficulties experienced by Swiss engineering schools and others in having their qualifications recognised. Education policy-makers realised increasingly that a desirable increase in the crossborder mobility of labour and people in general called for a greater openness of the education system at all levels.

Competition with general school education and firms’ lesser willingness to provide training

This view from the outside has gone hand in hand with a more longstanding problem of the justification of the dual system of vocational training. As in Germany, the dual system is still very highly regarded. Nonetheless in the long term its significance is declining. Demand for the *Gymnasium* type of education continues to increase. Despite the lavish praise, work-based vocational training is losing ground and the segment of upper secondary school education providing more general education and qualifying for higher education is increasingly being viewed by individuals as offering a wider range of options.

It is not only the attitude of young people and their parents that is at the root of this situation but also the degree of willingness of firms to provide training. Particularly innovative firms and those with a more international orientation are steadily

reducing the number of apprenticeship vacancies on offer. Instead of taking on apprentices who will in time become skilled workers they are tending more and more to employ people with a completed *Gymnasium* or other form of higher school education.

As a result those responsible for vocational training saw the introduction of the *Berufsmaturität* as a way of creating a broader, improved vocational school training that would considerably enhance the position of vocational training as a major catchment area for higher education, thereby rendering vocational training more attractive to academically gifted young people. Anyone opting for vocational training should on completion of his or her apprenticeship still have the possibility of embarking on a course of specialist education. Thus it was - rightly - hoped that young people hesitating between an apprenticeship and a *Gymnasium* education would be drawn towards the former. Business and industry, too, viewed such considerations far more benevolently than in the past.

Conclusion and outlook

The introduction of the *Berufsmaturität* and other reforms in vocational training are designed to preserve the significance of the dual system. However, the existence of the *Berufsmaturität* has not done much to challenge the clear distinction between general and vocational education at upper secondary school level. In contrast to many other European countries, occupational and general education have not been integrated into a single system. Instead the intention is to make a clear distinction between two types of education at upper secondary level with the possibility of going on to higher education.

The differentiation in vocational training lends additional weight to the academic element. The task of vocational training policy over the next few years will be to convince young people, and even more so employers, that this increment in school-based education not only operates to the benefit of the educational institutions concerned but will also bring



benefits in the long term. At the same time there is growing pressure for a reform of the remainder of the vocational training sector to ensure that its value

does not depreciate. Anyone undertaking reforms must, to cope with consequential problems, prepare themselves for further reforms.

Bibliography

Bierhoff H., Prais S. J. (1997): From school to productive work. Britain and Switzerland compared. Cambridge University Press.

Borkowsky A., Gonon Ph., (1996): Berufsbildung in der Schweiz. Beteiligung gestern und heute - neue Herausforderungen. Published by the Federal Statistical Office, Berne.

OECD, (1991): Reviews of National Policies for Education - Switzerland. Paris: OECD Publications 1991.

Gonon Ph., (1998): Das internationale Argument in der Bildungsreform. Die Rolle internationaler Bezüge in den bildungspolitischen Debatten zur schweizerischen Berufsbildung und zur englischen Reform der Sekundarstufe II. Berne, Peter Lang.

Kiener U., Gonon Ph., (1998): Die Berufsmatur als Fallbeispiel Schweizerischer Berufsbildungspolitik. Zurich: Ruegger.

Tabin J.-P. (1989): Formation Professionnelle en Suisse. Histoire et Actualité. Lucerne: Realités Sociales 1989.

Wettstein E., Bossy R., Dommann F., Villiger D. (1985): Die Berufsbildung in der Schweiz. Eine Einführung. Lucerne: DBK 1985

Wettstein E. (1994): Vocational education in Switzerland, Lucerne: DBK.



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Structural characteristics and target categories of holistic vocational training

Holistic vocational training is not just oriented towards the acquisition of technical competencies. It seeks to actively encourage the self-determination of individuals, their social co-responsibility and democratic co-determination of the worlds of life and work. On the one hand this means that vocational school pupils or trainees (in the concrete individual case) must be able to recognise systematic technical relations and to think and act in a constructive and analytical manner. On the other hand this also means promoting social behaviour, emancipation, creativity and scope for co-determination as integral components of holistic vocational learning.

Introduction

Holistic vocational training is not just oriented towards the acquisition of technical competencies. It seeks to actively encourage the self-determination of individuals, their social co-responsibility and democratic co-determination of the worlds of life and work. On the one hand this means that vocational school pupils or trainees (in the concrete individual case) must be able to recognise systematic technical relations and to think and act in a constructive and analytical manner. On the other hand this also means promoting social behaviour, emancipation, creativity and scope for co-determination as integral components of holistic vocational learning.

Structural characteristics of holistic vocational training

The basic prerequisite for prospective vocational training is that school-based and in-company learning must meet the demands for professional competence and character development (cf. Ott, 1995, 50f.).

Professional competence

In the past professional competence was often equated with a purely technical qualification, which could be imparted by means of narrow technically-oriented knowledge and skills. This approach, however, is no longer sufficient for forward-looking vocational training. Besides increased cognitive demands, professional competence today means above all a far clearer individual and methodological

competence which is characterised by core skills of a material, formal and social kind, such as an ability to communicate and co-operate, mastery of learning and work techniques or an ability to take decisions and come up with ideas. The constitutive factors of professional competence are occupational expertise, independent thought processes and actions, interpersonal co-operation and specialised interest as the motivating factor.

The target aspect is the specialised or technical competence of vocational pupils or trainees, i.e. the ability to undertake targeted, effective and independent work. This training goal has already been laid down in the German Vocational Training Act (BBiG) of 1969, "Vocational training must impart broadly based initial vocational training as well as the skills and know-how required to pursue a qualified occupational activity in a structured training course. Furthermore, it must facilitate the acquisition of the necessary occupational experience" (§1, para 2 BBiG).

Character development

Character development refers first and foremost to how one deals with oneself. The goal is to encourage self-recognition, independent action, interests and life plans. The target aspect of character development is to encourage the individual competencies of pupils and trainees. This is deemed to be the development of their own powers of discernment (including self-criticism) and practising social skills and political action. Socio-political action does not mean merely carrying out instructions but interpreting a situation. This means that the individual first interprets and then reacts to a situation, event and experiences of his world (by draw-



ing on interpretation patterns and benchmarks). Reflective learning or self-reflection is the ability to see through the conditions and consequences of one's own thoughts and actions and to acknowledge and assume responsibility for the meaning and legitimation of one's own actions.

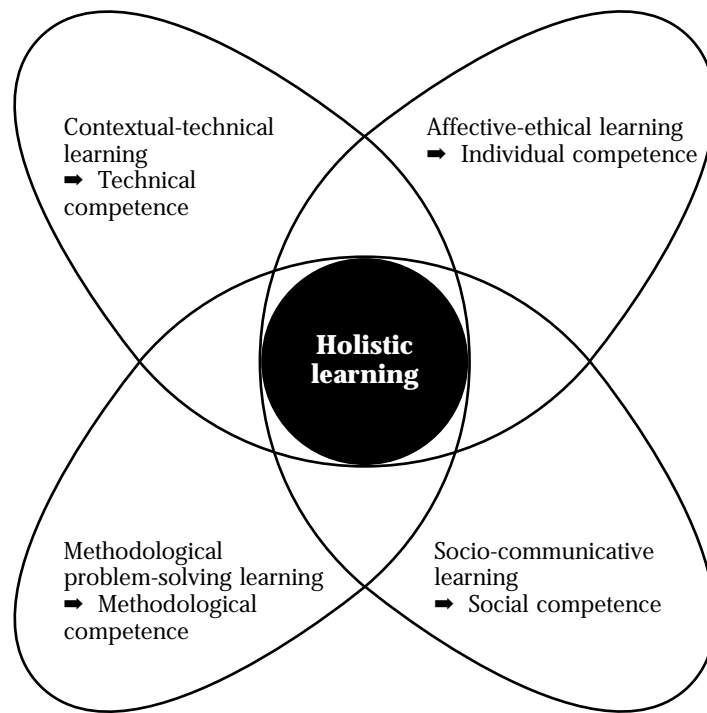
In this context it comes down to socio-cultural identity, an individual's feeling for life and his individual perspectives within his own world. On the one hand, this means reacting in a flexible manner to technical, economic and work organisation developments. On the other, it also means a willingness to reflect on and critically examine values and then take them on board.

Against this backdrop, the vocational school (according to Schelten, 1994, 139pp.) has a fourfold educational task (cf. Blättner, 1958, 89ff., Grüner, 1984, 50ff.):

- a) as a venue for the continuation of general education
- b) as a venue for education
- c) as a venue for additional vocational education
- d) as a venue for non-specific education through an occupation.

Individual competence is also the precondition for socio-political competence. Both are irrevocably linked. The (ethical) individual competence must precede and accompany the (critical) social competence (cf. Bonz, 1980, 61ff.) - the target aspect is occupational maturity. "From the angle of occupational pedagogics, occupational maturity means in the narrower sense occupational autonomy. This is considered to be the sum of the skills needed in order to survive in the world of work according to pre-established performance standards whilst at the same time challenging these very standards. In the wider context, the term "maturity of the individual" encompasses self-reflection and reflection on social structures and processes. The objectives are to break down inherent constraints and to widen each individual's scope for action, to present situations which impede developments of this kind as transient and to enable the individual to think and act in a rational manner". (Lipsmeier, 1982, 233).

Fig.1:
Dimensions of holistic learning



Source: Ott, Bernd: Grundlagen des beruflichen Lernens und Lehrens. Ganzheitliches Lernen in der beruflichen Bildung. Berlin 1997, p. 14.

Methodological-operative learning

Holistic training, seen as a symbiosis between professional competence and character development is the "common interface" between cognitive-motor and psycho-social learning. In the case of holistic learning the cognitive-motor and psycho-social learning areas are not diametrically opposed but rather permeate and supplement each other (in the common interface) to form methodological-operative learning - the path and goal of which is "learning to learn".

The cognitive-motor components (methodological problem-solving learning) are made up of learning and work techniques such as

- independent information collection and productive information processing,
- work planning or work design or
- the ability to solve problems and heuristics.

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**Table 1:
Goals and contents of holistic learning**

Contextual-technical learning	Methodological problem-solving learning	Socio-communicative learning	Affective-ethical learning
Target aspect: <i>Technical competence</i>	Target aspect: <i>Methodological competence</i>	Target aspect: <i>Social competence</i>	Target aspect: Individual competence
Technological knowledge	Independent information collection	Objectivity in argumentation	Intellectual-normative ability
Ecological knowledge	Productive information processing	Openness and ability to integrate	Artistic - aesthetic ability
Economic knowledge	Ability to solve problems	Development of discussion rules	Political and social ability
Structural knowledge	Metaplan method	Active listening	Self-confidence
System knowledge	Guiding text method	Discussion moderation	Self-criticism
Transferability	Case analysis	Conflict management	Ability to reflect
Power of discernment	Work/time planning	Feedback methods	Maturity

□ a cognitive dimension since these are elementary methods of independent learning or tackling a complex task,

□ a psycho-motor dimension in that they have a specific content of manual skills when it comes to the automation of a technique and

□ a social dimension in that they serve communication purposes.

Interim summary: The path and goal of holistic vocational training is holistic learning, related to four types of learning (cf. Ott, 1997, 9ff):

Contextual-technical learning refers to cognitive skills and motor skills which are laid down in the new training ordinances - the goal is to obtain **TECHNICAL COMPETENCE**.

Methodological problem-solving learning refers to the acquisition of fundamental learning and work techniques - the goal is to obtain **METHODOLOGICAL COMPETENCE**.

Socio-communicative learning refers to the acquisition of fundamental co-operation and communication techniques - the goal is the acquisition of **SOCIAL COMPETENCE**.

Affective-ethical learning refers to how one deals with oneself. Its goal is self-recognition, independent (social and political) action, the structuring of a person's interests and life plans - the goal is the acquisition of **INDIVIDUAL COMPETENCE**.

The following table gives the main goals and contents of holistic learning (Ott, 1997, 14):

Target categories of holistic vocational training

The foundation and precondition for the prospective, holistic understanding of education is a new learning and corporate culture. From the angle of occupational and corporate pedagogics, a more up-to-date concept of education must (in the narrower sense) establish a link be-

The psycho-social components (socio-communicative learning) are made up of co-operation and communication techniques, e.g. with the individual skills:

- written and oral expression skills,
- development of discussion rules and feedback methods,
- team development and discussion facilitation,
- conflict management and metacommunication.

The learning contents of methodological-operative learning are thus first and foremost operational techniques (cf. Bonz, 1999, 109 ff.). They have



tween theory and practice, i.e. between learning and working and (in the wider sense) ensuring the interweaving of the worlds of work and life.

To put it briefly: there is a shift from the traditional (instruction-oriented) paradigm to the constructive (subject-oriented) paradigm! In the traditional paradigm there was a corporate hierarchic order with a fixed organisation structure and this normally imposed sharply defined structured learning. The constructive paradigm, by contrast, is oriented towards lean, flexible (fractal) organisation forms with self-referenced management of knowledge in the “learning company” (cf. Schneider, 1991, 45ff.).

New learning and corporate culture

In order to be competitive and successful, companies must in future give priority to a learning and corporate culture of self-organisation and self-qualification of their employees. This must be oriented towards “the normative subjectivisation of work”, i.e. “people want to be closely involved in work, to input themselves as an individual and receive confirmation by means of their skills” (Baethge, 1991, 7f). Hence more recent restructuring approaches are not only oriented towards conventional business management parameters such as cash flow or shareholder value. By means of a clear process-oriented view of added value (cf. Kühnle, 1997, 19) they are oriented towards

- an ongoing success process;
- new forms of co-operation;
- competence development;
- problem solution in teams.

These new reorganisation programmes also require new (leadership) skills which Salovey (1990, 185ff) sums up under the concept “emotional intelligence” (cf. Goleman, 1996, 65f). This doesn’t mean merely knowing (recognising) and understanding emotions but rather developing a feeling for people in order to know what others feel (empathy).

Industrial pedagogics seem to have already fundamentally accepted this holistic approach because “vocational training in the learning company” (Meyer-Dohm/Schneider, 1991) pursues the guiding idea

of the “self-qualification of employees”. These developments are oriented towards the networking of learning and there are three characteristic model developments (cf. Weissker, 1992, 29f):

a) Learning model: learning to learn through experience-based learning and work-based learning

Work is holistic; it requires and promotes learning at the same time, i.e. experience-based learning through the process of work is on the increase. The “target function of work-based learning” is made up of

- technical skills in the field of occupation-specific knowledge and skills (technical competence) and in the field of (also multi-disciplinary) technology-specific methodological competence,
- multi-disciplinary technical and occupational skills which can be categorised in the following groups:
 - an ability to solve problems (including an ability to take decisions, power of discernment, systematic approach, independence, creativity as well as the multi-disciplinary technical and occupational dimension to methodological competence);
 - an ability to interact (including communication and co-operation skills),
 - an ability to assume responsibility (self-responsibility and social responsibility)” (Halfpap, 1991, 157/158).

b) Action model: learning to act through learning to take decisions

Instruction learning is being enhanced with construction learning, i.e. informal and intentional learning processes are being linked up. New forms and concepts of learning aim to provide greater scope for action, related to

- room for manoeuvre allowing employees to themselves determine the course of their actions;
- decision-making scope which they use to solve problems independently and
- interaction scope which they use to discuss possible solutions to a problem with a partner or in a group.

“In order to be competitive and successful, companies must in future give priority to a learning and corporate culture of self-organisation and self-qualification of their employees(...), i.e. “people want to be closely involved in work, to input themselves as an individual and receive confirmation by means of their skills (...)”



“(..) it is above all the change in skill requirements which prompts a new learning culture in vocational education. Hence even more recent conceptual models and structural approaches are assuming a constantly changing area of occupational action and are working towards “active-productive learning” as the central components of vocational (continuing) training.”

c) Development model: learning to structure through learning to be responsible for oneself

In order to increase the scope for human action at work by means of the goal of achieving “structural competence” (cf. Rauner, 1987, 266ff), there must be several changes in cultural awareness both in in-company and in school-based vocational education (cf. Ropohl, 1992, 7). This must be based on a constructive error and problem solving culture and a culture of participation and responsibility.

Constructive error and problem-solving culture: we must relearn, by challenging our habit of labelling things as right or wrong, to accept mistakes and to learn from them. A constructive error culture means that there is open discussion of errors and creativity is rewarded. This also means not giving up when confronted with problems, frictions and disruptions but rather seeing them as a challenge.

Culture of participation and responsibility: we have to relearn that we must give pupils and trainees, students and employees more opportunities for self-determination and co-determination. We must involve them more in planning, execution and evaluation processes. More particularly we must give them scope to develop responsibility on the basis of ethical-normative principles. This means that people develop critical-constructive benchmarks for future situations on which they can base their actions. The “learning goal responsibility” (H. Jonas, 1984), corresponds to the new occupational maxims and ability for self-determination and co-determination. This is understood to be self-responsibility and co-responsibility. It reveals a major precondition for responsibility: increased responsibility needs a higher degree of freedom since taking decisions implies freedom to decide about various alternative actions.

New skill requirements

An answer to the question about the future development of skill structures and qualification profiles of technical occupational work can only partly be identified: the networking of control, manufacturing and inspection systems always leads to

greater complexity in technical functions and plants and calls for

- technical problem solutions with work process-related knowledge and experience of tools, materials and processes,
- occupational problem solutions in a dynamic interdependent construct of planning, execution and control as well as
- social problem solutions in diverse group structures by means of co-operation, organisation and conflict management.

Given the high or steadily increasing technical requirements, manual skills and concrete (trade) activities are losing in importance. By contrast planning, steering and supervisory functions with people skill requirements such as abstract analysis, planning, systematic thinking and self-steered (autonomous) learning are increasingly gaining ground. Besides the rapidly available highly specialised individual skills, there is a need for a broad range of skills for varying functional areas. What are particularly important are so-called soft skills such as the ability to work in a team, solve problems and communicate.

Consequently, it is above all the change in skill requirements which prompts a new learning culture in vocational education. Hence even more recent conceptual models and structural approaches are assuming a constantly changing area of occupational action and are working towards “active-productive learning” as the central components of vocational (continuing) training. The goal of active-productive learning is on the one hand to facilitate effective learning of technical learning contents by means of active confrontation with the learning contents. On the other hand it is also a matter of encouraging “critical-dialectic competence development” (cf. Arnold, 1998, 496ff.) by means of action-oriented learning forms in pupils and trainees, related to three main areas (cf. Ott, 1997, 130f.):

- self-learning techniques,
- communication and co-operation techniques,
- creativity techniques.

Self-learning techniques (learning and work techniques) have to do with the in-



dependent collection of information, productive information processing and targeted information reproduction.

Communication and co-operation techniques are oriented towards constructive team work. This ranges from elementary discussion techniques to central co-operation techniques.

Creativity techniques have to do on the one hand with working in a structured and mediative manner. On the other they are also a central tool in order to analyse problems and structures and develop and optimise solutions. In line with this initial target there is a broad range of conceptual, mediative and problem-solving creativity methods.

New teaching and training processes

New qualification requirements and competence development also call for new problem and action-oriented teaching and training processes, oriented towards

- holistic, multi-dimensional tasks and work realities,
- problem-related action systematics with more scope for the learner as well as
- active experienced-based, co-operative learning forms and open learning environments.

Problem and action-oriented instruction and training procedures have three holistic foundations: first of all the structural goals are grouped under the technical system aspect, then the structural process is examined from the procedural and interaction angle and finally the structural context is discussed in terms of the socio-technical system aspect.

Action is always conscious and targeted and consists of the steps: target setting, planning, implementing and controlling/assessing. They are all phases in a cycle which is undertaken (where appropriate several times). In parallel to this, there is the articulation of the problem and action-oriented instruction or training processes in four phases (cf. Nashan/Ott, 1995, p. 62ff.:

- Problem identification
- Problem structuring
- Problem solution
- Application of the problem solution.

Table 2: Self-learning techniques

Techniques of independent information collection	Techniques of productive information processing	Techniques of targeted information reproduction
Reading techniques	Taking notes	Writing reports
Listening techniques	Recording/extracting	Justifying/explaining
Using	Marking/structuring	Summarising
- reference books	Visualisation of	Lecturing/public speaking
- tables of contents	- wall newspapers	Presenting
- keyword indices	- tables/diagrams	Telephoning
- specialised texts and books	- learning posters	Sending e-mails
- catalogues and libraries	Designing a learning game	Panel discussion
- PC tools und networks	Producing a radio play	Hearing

Table 3: Kommunikation techniques

Communication techniques	Co-operation techniques
Flashlight	Group work
Ballbearing	Role play
Pro and cons debate	Management game
Fish-bowling	Project method
Beehive	Discussion round
Group puzzle	Theatre play

Table 4: Creativity techniques

Concept-oriented creativity methods	Mediative-oriented creativity methods	Problem-solving creativity methods
Working with photos and images	Fantasy journey	Delphie method
Collages, creative painting	Metaphor meditation	Functional analysis
Pantomime	Suggestopedics	Method 635
Creative writing		Morphology

Problem identification

Depending on the “didactic range”, problem and action-oriented instruction/training begins with a problem or structural task, which also takes into consideration



“Action is always conscious and targeted and consists of the steps: target setting, planning, implementing and controlling/assessing. They make up a cycle which is undertaken (where appropriate several times). In parallel to this, there is the articulation of the problem and action-oriented instruction or training processes in four phases (...):

- Problem identification***
- Problem structure***
- Problem solution***
- Application of the problem solution”***

the procedural side to the learning process. The goal, a didactic tool, is only then sufficient if the conditions and requirements in respect of the system to be structured (“specifications”) are transparent for the pupils. Therefore, it is essential that the problem be clearly structured.

Problem structuring

The goal of the problem structuring phase is that the pupils if possible themselves lay down the mechanism of action and the work goal.

This structuring process involves incorporating the construct of technical facts in such a manner into the existing cognitive structure of the pupil in such a way that he can apply new knowledge and new skills usefully to what he has still to learn. Once individual knowledge is anchored in a network of interrelations and characteristics, the learner acquires system knowledge. What emerges from this system knowledge is a general insight into the interrelations and structures of the system and specific knowledge about necessary causal relationships which have to be borne in mind. This, in turn, demonstrates the position and importance of interrelations. Therefore, in the problem-oriented, action-oriented learning process, linear (sectorial) thinking is replaced with networked thinking and holistic problem solutions.

Problem solution

Problems are solved by drawing on all kinds of thoughts and actions, by concrete and formal operations linked with intuition and imagination, by combining and modifying experience and existing knowledge as well as tapping new information. The target is the structuring, control and possible shaping of the system by the learner (“action product”).

The problem-solving process takes place in four learning situations:

- Task-transfer-situation:** the work goal is formulated and outlined in a “learning contract” (target agreement, competence and time schedule).
- Independent productive elaboration:** the pupils solve (preferably by means of

group work) the problem using the principle of “methodological self-selection”.

- Presentation situation:** the pupils present their work results and the problem solution path.

- Discussion situation:** the pupils reflect on the learning process bearing in mind the structuring and co-operation process (feedback phase) and evaluate the structured system.

Application of the problem solution

Application is the last phase in the problem and action-oriented learning process. It aims to anchor learning results in the memory of the learner, to stimulate familiarity and to work towards automation. In this learning phase depending on the subject matter and problem there may be:

- repetition as a renewed tackling of the solution path and the solution with the goal of anchoring the knowledge, skills and understanding in respect of awareness, availability, completeness and sustainability;

- practise as the repeated carrying out of the solution path and the solution with the goal of finely tuning and partially mechanising skills and habits;

- application as the relatively independent handling of the solution path and the problem solution under new circumstances in new situations and relations with the goal of deeper understanding by extending, varying and structuring the problem situation;

- transfer as the handing over of the identified and clear structural features of the solution path and the solution with the goal of recognising identical moments in other problem situations.

Extended technical didactic learning and research areas

It is obvious that holistic vocational training can only be achieved by means of extended vocational technical didactics (cf. Ott, 1998, 9ff.) The difficulties encountered in structuring vocational training didactics which satisfy changing social demands are that



- ❑ this involves a complex task structure coupled with manifold responsibilities and, in some cases, conflicting interests;
- ❑ the theory-practice problem is more in evidence than in general education;
- ❑ there has been a greater feeling of uncertainty as a consequence of the discussion about goals and contents than in general education;
- ❑ vocational training is especially linked to the structures and processes of the world of work" (Lipsmeier, 1980, 49).

Almost "from the very outset", vocational technical didactics suffered the stigma of an exclusive transfer orientation. Under the given technological and structural learning developments, however, a change in paradigms would seem appropriate (cf. Lipsmeier, 1991, 103ff.). The diverse learning and research areas of holistic occupational didactics are demonstrated in wide ranging (open curricular) aspects (cf. Ott, 1998, 22f.):

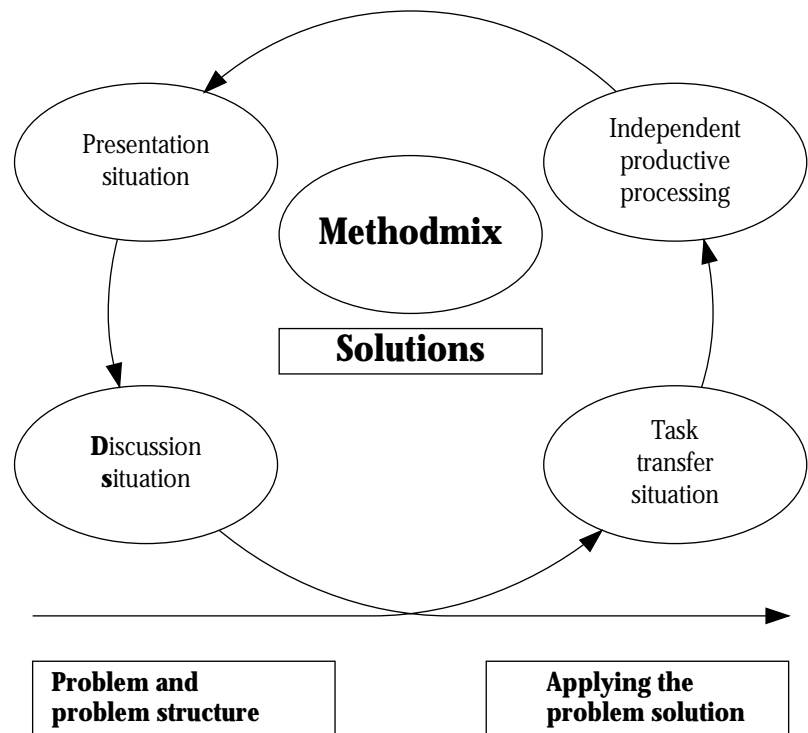
Interdisciplinary aspect: identification of normative, theoretical educational principles such as "holistic vocational training" (cf. Ott, 1997a, 30ff.) and the interpretation of their meaning within the context of intellectual history and cultural science streams (e.g. an ability to communicate and assume responsibility). Scientific theory, social philosophy, industrial sociology and technical history etc. are the stepping stones.

Socio-political aspect: analysis of the industrial society and industrial culture which structure occupational work as well as identification of the ecological and social effects of work, technology, education, industry and society, e.g. related to a new learning and corporate culture.

The technical-curricular aspect: assessment of new (international) expert findings (e.g. computer-aided information and communication technologies) in respect of the skills and competence development necessary in the future and their learning goal oriented transformation and classification in "open and autonomous curricula" in the form of didactic guiding principles.

Socio-psychological aspect: research into new learning preconditions for pupils and

Fig. 2:
Action-oriented learning and reflection loop



Source: Ott, Bernd: Grundlagen des beruflichen Lernens und Lehrens. Ganzheitliches Lernen in der beruflichen Bildung. Berlin 1997, p. 175.

trainees, also in the case of heterogeneous learning groups (problem areas in internal and external differentiation) as well as more recent skill requirements for teachers and initial and continuing trainers.

Practical instruction and training aspect: integration of vocational and general education into holistic instruction. The development of technical (self-)learning materials. Testing of action-oriented instruction and training models with a view to self-controlled, methodological-operative learning and holistic learning assessment.

Summary: The analysis of modern industrial working situations reveals very extensive skill requirements for employees with a trend towards greater production of knowledge and structural scope coupled with a far wider (holistic) competence profile (cf. Ott, 1995, 55ff):

"The analysis of modern industrial working situations reveals very extensive skill requirements for employees with a trend towards greater production of knowledge and structural scope coupled with a far wider (holistic) competence profile."



□ From the angle of the subject matter complicated knowledge and complex skills are needed which have to do with the contextual dimension of work (*technical competence*).

□ From the angle of procedures it is important to master technical procedures, processes and activities in order to find operative solutions and take independent decisions (*methodological competence*).

□ From the angle of behaviour personal (team) skills should be mentioned which particularly encompass social interaction processes in a specific task (*social competence*).

□ From the socio-human aspect the meaning of occupational actions and processes in the context of social and anthropological conditions is to be identified and assessed (*individual competence*).

Hence, holistic vocational training based on these guiding principles aims not only to develop technical competence but, more particularly, to codetermine the world of work. To this end, it is necessary that “lifelong learners” can recognise systematic technical relations and think and act in a constructive and analytical manner. Furthermore, the promotion of

social behaviour, training in creativity and tapping the scope for co-determination are an integral part of “holistic vocational learning and teaching” (cf. Ott, 1997).

New didactic orientations in occupational pedagogics are based on four goals which all have a guiding function (cf. Dehnbostel/Walter-Lezius, 1992, 175ff):

- the work reference,
- structural orientation,
- action orientation and
- the acquisition of core skills.

Two qualification approaches are particularly relevant for the implementation of these “guiding principles” for vocational training: on the one hand the promotion of system thinking and understanding of interrelations, on the other “ongoing and co-operative self-qualification and self-organisation” (cf. Schneider/Sabel, 1996). Many arguments would seem to advocate process-oriented and holistic learning and training concepts on the basis of qualified group work as a viable development option and guideline for vocational training. Prospective vocational training would, therefore, have to be based on problems and actions in order to ensure that technical, methodological, social and individual competencies can be learned or experienced in a holistic manner.



References:

- Arnold R.** (1998): Kompetenzentwicklung. Anmerkungen zur Proklamation einer konzeptionellen Wende in der Berufs- und Wirtschaftspädagogik. In: Zeitschrift für Berufs- und Wirtschaftspädagogik, 94th volume, Issue 4, pp. 496-504.
- Arnold R., Dobischat R., Ott, B.** (1997): Weiterungen der Berufspädagogik. Von der Berufsbildungstheorie zur internationalen Berufsbildung. Stuttgart.
- Baethge M.** (1991): Arbeit, Vergesellschaftung, Identität. Zur zunehmenden normativen Subjektivierung der Arbeit. In: Soziale Welt, 42, pp. 6-20.
- Blättner F.** (1958): Pädagogik der Berufsschule, Heidelberg.
- Bonz B.** (1980): Individuelle und gesellschaftliche Ansprüche im Technikunterricht. In: Bonz B., Lipsmeier A., (Ed.): Allgemeine Technikdidaktik - Bedingungen und Ansätze des Technikunterrichts, Stuttgart, pp. 61-73.
- Bonz B., Ott B.** (Ed.) (1998): Fachdidaktik des beruflichen Lernens. Stuttgart.
- Bonz B.,** (1999): Methoden der Berufsbildung; ein Lehrbuch. Stuttgart.
- Dehnbostel P., Walter-Lezius H.-J.** (1992): Didaktische Ansätze zur Untersuchung des Modellversuchsbereichs "Neue Technologien in der beruflichen Bildung". In: Dehnbostel P., et al.: Neue Technologien und berufliche Bildung - Modellhafte Entwicklungen und theoretische Erkenntnisse. Berichte zur beruflichen Bildung, Issue 151. Berlin, pp. 175-192.
- Goleman D.** (1996): Emotionale Intelligenz. Munich, Vienna.
- Grüner G.** (1984): Die Berufsschule im ausgehenden 20. Jahrhundert: Ein Beispiel zur Berufsbildungspolitik. Bielefeld.
- Halfpap K.** (1991): Praxisbeispiele - Lernfeld Schule. In: Zur Frage der Ganzheitlichkeit in der beruflichen Bildung, Evangelische Akademie Bad Boll (Protokolldienst), 2, pp. 149-174.
- Jonas H.** (1984): Das Prinzip Verantwortung. Versuch einer Ethik für die technologische Zivilisation. Frankfurt a.M. 1984.
- Kühnle H.** (1997): Das lernende Produktionsunternehmen - die Organisationsentwicklung geht weiter. In: VDI-Z Integrierte Produktion, 139, No. 10, pp. 18-22.
- Lipsmeier A.** (1980): Qualifikationsanforderungen des Beschäftigungssystems und Reform der Berufsausbildung. In: Bonz B., Lipsmeier A., (Ed.): Allgemeine Technikdidaktik - Bedingungen und Ansätze des Technikunterrichts, Stuttgart, pp. 49-60.
- Lipsmeier A.** (1982): Die didaktische Struktur des beruflichen Bildungswesens. In: Blankertz H., et al. (Ed.): Sekundarstufe II - Jugendbildung zwischen Schule und Beruf. Enzyklopädie Erziehungswissenschaft. Bd. 9.1, Stuttgart, pp. 227-249.
- Lipsmeier A.** (1991): Ganzheitlichkeit, Handlungsorientierung und Schlüsselqualifikationen - über den berufspädagogischen Gehalt der neuen Zielgrößen für die berufliche Bildung im Kontext der neuen Technologien, In: Bonz B., Lipsmeier A.,: Computer und Berufsbildung. Beiträge zur Didaktik neuer Technologien in der gewerblich-technischen Berufsausbildung, Stuttgart, pp. 103-124.
- Meyer-Dohm P., Schneider P.** (Hrsg.) (1991): Berufliche Bildung im lernenden Unternehmen. Neue Wege zur beruflichen Qualifizierung, Stuttgart, Dresden.
- Ott, B.** (1995): Ganzheitliche Berufsbildung. Theorie und Praxis handlungsorientierter Techniklehre in Schule und Beruf. Stuttgart.
- Ott, B.** (1997): Grundlagen des beruflichen Lernens und Lehrens. Berlin.
- Ott, B.** (1997a): Neuere bildungstheoretische Ansätze und Positionen in der Berufs- und Wirtschaftspädagogik. In: Anold R., Dobischat R., Ott B.,: Weiterungen der Berufspädagogik. Von der Berufsbildungstheorie zur internationalen Berufsbildung. Stuttgart, pp. 23-35.
- Ott, B.** (1998): Ganzheitliche Berufsbildung als Leitziel beruflicher Fachdidaktik. In: Bonz B., Ott B., (Ed): Fachdidaktik des beruflichen Lernens. Stuttgart, pp. 9-30.
- Rauner F.** (1987): Zur Konstitution einer neuen Bildungsidee: "Befähigung zur Technikgestaltung", In: Drechsel, R., et al.(Ed.): Ende der Aufklärung? Zur Aktualität einer Theorie der Bildung. Forschungsreihe des Forschungsschwerpunktes "Arbeit und Bildung", Volume 6, Bremen, pp. 266-297.
- Ropohl G.** (1992): Philosophie und technische Bildung. In: arbeit + lernen/Technik, 8, pp. 6-9
- Salovey P., Mayer J.D.** (1990): Emotional Intelligence. In: Imagination, Cognition and Personality, 9, pp. 185-211.
- Schelten A.** (1994): Einführung in die Berufspädagogik. Stuttgart (2nd ed.)
- Schneider P.** (1991): Selbstqualifizierung und Selbstorganisation: Zwei Leitideen einer neuen Berufsbildung. In: Meyer-Dohm P., Schneider P. (Ed.): Berufliche Bildung im lernenden Unternehmen. Neue Wege zur beruflichen Qualifizierung, Stuttgart, Dresden, pp. 45-71.
- Schneider P., Sabel M.** (1996): Lernen und Arbeiten im Team. Volume 3: Ergebnisse und Abschlußbericht der wissenschaftlichen Begleitung zum Modellversuch "Kontinuierliche und Kooperative Selbstqualifikation und Selbstorganisation". Bielefeld.
- Weissker D.** (1992): Neue Ausbildungsmethoden im Test. Aktuelle Modellversuche, In: Berufsbildung (16), August, pp. 29-30.



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The importance of the Internet and online systems for the future development of qualification requirements; Hypotheses and the results of experience

The following article is linked to the practical work and partial evaluation of the implementation of two pilot projects on continuing vocational training. The empirical basis taken for the article is the experience acquired and the reflections which followed the completion of two model projects by the Land of Berlin within the framework of the ADAPT Community initiative.

Empirical basis and relevance of the experience acquired

The following article is linked to the practical work and partial evaluation of the implementation of two pilot projects on continuing vocational training. The empirical basis taken for the following article is the experience acquired and the reflections which followed the completion of two model projects by the Land of Berlin with a duration of 24 months each (1996-1998) within the framework of the ADAPT Community initiative. The pilot projects taken for the empirical basis were:

□ Pilot project 'Facts for Europe'; in-service qualification for a small group of workers and enterprises in the pre-printing sector, Land Berlin, Objective 4 Region

□ Pilot project 'ASTRANET'; in-service Internet qualification for workers from small and medium-sized enterprises in the eastern part of Berlin. 217 small and medium-sized enterprises with 378 employees from different sectors participated in the project. The majority of the participating firms were service enterprises in the broadest sense of the term. With regard to the initial vocational qualifications of the employees receiving training, they were mostly well qualified professional

staff with degrees from higher technical colleges (Fachhochschule) and/or various university degrees. About one-half of those who successfully completed the basic course were women; but in the advanced course women only accounted for one-third of the trainees. The total course offered a curriculum of 240 hours of pure Internet training consisting of six blocks of 40 teaching units each. Because of the short duration of the financial support period, adequate empirical testing could only be undertaken on two central qualification units. The empirical implementation of the measure and all related questions and considerations are of vital importance for further studies and regular measures in the field of additional information technology training.

The following contribution is not the product of a commissioned research project, nor does it claim to be an independent venture. Rather, it is an attempt to take the experience gathered in active backing research, i.e. the evaluation of the practical work of the on-going project, and to clothe it in the form of hypotheses and the resulting reflections in order to obtain additional elements for the scientific investigation of the problem on a broader scale. As project coordinator of the Internet project the author acquired many insights into the interests and motivation of the trainees through her contacts with the participating enterprises and



employees. In many cases these insights give rise to concern as, even in the case of highly and well qualified professional staff with higher technical college and/or university degrees, there is often a complete lack of basic information technology knowledge needed for the use of IT instruments.

The experience acquired from the practical work was complemented by a written questionnaire after completion of the course, observations and talks with the participants, representatives of the participating SMEs and the newly emerging group of Internet specialists who worked as lecturers in the courses. The author is neither a euphorically ardent advocate of technical innovation nor an 'anti-machine Luddite'; she sees herself as an interested user with professional links to the social sciences and VET policy. The following remarks therefore serve the purpose of placing the new medium Internet in the context of an effective VET policy against the background of different vocational training systems in the EU Member States.

The Europe-wide relevance of the introduction of Internet and online work to improve competitive conditions in threatened industrial locations was the original point of departure for the planned publication by CEDEFOP. The important task of the future will be to give a more effective and quicker response to relevant developments and trends in the area of work requirements, possibly at European level, in the context of the anticipated modularisation of vocational training (initial and continuing training). One goal could be - while maintaining the principle of subsidiarity - to tackle desirable future changes and trends in the development of the initial and continuing training systems of the Member States of the Union in a more targeted manner. This article has the aim of contributing to the future Europe-wide discussion of questions relating to tele-work, the use of the Internet and the pedagogical and sociological networking of enterprises.

The following hypotheses will show that some paradoxical developments are taking place as a result of technical progress; careful thought has to be given to their importance and future impact in the field of vocational education and training and

vocational training policy, they therefore have to be observed closely, especially with a view to the development of new occupational profiles and new location requirements which have to be integrated in all job profiles. Some of the most important hypotheses are presented in the following:

The Internet is more of a means than an end: The new working medium Internet, despite its spectacular features, is simply a support instrument; it enables new forms of work; what is more important: it can generate structures but not contents, even though there are some attempts to develop a philosophy on this!

The autonomy paradox: Despite the increasing influence from outside we must be in a position, even in the WWW, to generate our own contents. What is decisive is the professional position based on criteria which serve the goal and the contents and are not only a matter of publicity-effective packaging.

The workplace paradox: although labour productivity is rising with the aid of the Internet and online work, few additional jobs have been created up to now. This situation should be changed by exploiting the opportunities of online work to create new products and services.

The employment paradox: IT generates new jobs; but there is a danger that a large number of old jobs will be destroyed at the same time. Caution is required!

The competence paradox: IT enables access to much more information and knowledge. At the same time the demands on the qualification of the users are growing.

It is becoming increasingly difficult to master or understand the available knowledge. This means that the ability to participate in team work is becoming much more important.

The polarisation paradox: Through IT more people than ever before have access to information, at the same time the disparities between users and non-users are growing. Large industrial units and large medium-sized enterprises find it easier to introduce the Internet than small

"Some of the most important hypotheses are the following:

- The Internet is more of a means than an end: The new working medium Internet, despite its spectacular features, is simply a support instrument; (...)

- The autonomy paradox: Despite the increasing influence from outside we must be in a position, (...) to generate our own contents. (...)

- The workplace paradox: although labour productivity is rising with the aid of the Internet and online work, few additional jobs have been created up to now. (...)

- The employment paradox: IT generates new jobs; (...)

- The competence paradox: IT enables access to much more information and knowledge. (...)

- The polarisation paradox: Through IT more people than ever before have access to information, but at the same time the disparities between users and non-users are growing. (...)"



“Lack of confidence, ignorance and, above all, lack of application skills are three crucial barriers to the current spread of the Internet, particularly in small and medium-sized enterprises. SMEs – in contrast to the wide-spread lack of attention to their economic potential – account for almost eighty percent of all jobs and thus play a highly important role in work and employment in Europe.”

and medium-sized enterprises with less than 15 workers because the former have greater financial and personnel reserves at their disposal than small or micro enterprises. Existing disparities between large companies and SMEs, and also between well-qualified and less well-qualified skilled workers are growing and tend to become more pronounced rather than decline, because the demands on EDP skills and other concealed demands are rising. This also applies to growing polarisation and the establishment of new standards in VET, which should be available for disadvantaged youth too.

This list of paradoxical developments and effects can be continued indefinitely. But the fundamental paradox in connection with VET issues, industrial location and use of the Internet is the fact that everyone is in agreement on the future importance of online media, but very few policy makers – apart from the sector itself – are taking any steps to support the massive implementation of information and communication technology in SMEs, let alone encourage improvement of qualitative use and mastery by the majority of the users.

Technical innovations

Intranet, online systems and the Internet as new work tools lead to organisational change and the creation of new work requirements in a networked corporate landscape of EDP users

Lack of confidence, ignorance and, above all, lack of application skills are three crucial barriers to the current spread of the Internet, particularly in small and medium-sized enterprises. SMEs – in contrast to the wide-spread lack of attention to their economic potential – account for almost eighty percent of all jobs and thus play a highly important role in work and employment in Europe.

How fundamental the future role of the Internet will be is perhaps expressed best in the following sentence: ‘It hardly matters anymore whether one’s neighbour lives next door or at the other end of the world’.

Today sending e-mails has become a routine practice like the use of the fax ma-

chine and the telephone or the non-networked single workstation system.

Process, product and service innovations can, through targeted promotion, lead to the progressive creation of new jobs. Apart from risks, the use of online systems and the Internet also offers numerous opportunities to develop new products, new services which will secure existing jobs, and to create new employment. The use of the Internet is not a step-by-step procedure but a radical innovation. From the angle of internal company activities, the reorganisation of commercial and administrative procedures through the networking of in-company functions and organisational structures through Intranet can help to satisfy commercial and technical requirements, particularly if the networking links single departments and areas which were separate from one another before. Corporate activities directed to the exterior will also change through this opportunity of using the Internet. It is already being seen today that central functional areas such as marketing and sales, but also research and development or integration of supra-company communication structures, are undergoing radical change through the use of the Internet.

However, from our angle, the introduction and use of these technical innovations does not mean a substitution of technical knowledge and skills in the field of vocational requirements. Changes in instrumental competences, i.e. the ability to use technical innovations such as the Internet and intranet and to do online work, are the most visible changes in corporate procedures. The new additional requirements tend to be concealed adaptation skills in the area of work organisation covering different forms of the necessary team work as part of overall corporate activities, and the necessary additional technical, mental and social competences for the integration of new available information in a highly complex package of competences. These are not fully visible new requirements and they tend to be overlooked by potential users in the initial phase of the introduction of online work with networked systems.

The veiled ‘must’ for a new organisation of enterprise activities is the real obstacle to innovation in the use of new work in-



struments, especially in the case of the small and medium-sized enterprises. That is why qualification for this medium within vocational initial and continuing training has to be more than just a partial training of users by the system providers. The existing inter-activity, speed of communication and economic efficiency of the Internet, Intranet and online work lead to the conclusion that in future many new areas of application and - at present still unthought of - opportunities for the creation of new services and products will arise and can be exploited through the general spread of the medium.

Given the anticipated economic importance and the impact arising from the widespread use of the Internet as a new strategic corporate management instrument, an economic shock could be in store for all those who have not yet devoted much thought to this instrument (mostly with the argument: 'Not worth the trouble!')

In any case, within a few years, the entire economic system, if not the whole face of society, will be altered through the use of this new work medium. The spread of this medium will, in all probability, not take 50-80 years - compared with electricity and the telephone - if its colossal speed of diffusion in the last 5 years is taken into account. Given this extremely fast spread of the Internet it will probably only take 10 years at the most before online work and use of the Internet and electronic mail have become standard features of the professional and working world.

The current substantiated number of computers in Germany is put at 1 132 174 by De-Nic (Dec 30 1997). In Europe there are certainly more than 6 million computers in use at the moment. In Germany there are at present only 114,602 domains with full Internet capability but this figure is swiftly rising. 11 million Internet connections are being forecast in Europe up to the year 2002. Projections indicate that by then 47 million connections will exist world-wide (Internet Domain Survey 25.01.99)

At present we are still in the early stage of the diffusion of the Internet in Europe. Banks and insurance companies, real estate management and the liberal profes-

sions have already started to adapt to the new technology. The pre-printing sector and the entire multi-media branch have been undergoing a tremendous re-structuring process for many years and are therefore the trailblazers of this development. Because of this the enterprises in the newly developing multi-media branch, also called the 'media industry', which have successfully adapted now have a leading edge in technological development.

Electronic commerce with goods and services is gaining ground in Europe. In the USA and Canada it has been generating high turnover figures for a long time.

Today the traditional demarcation lines between the branches are being erased and it may be assumed that in the course of further development, new concentration processes will take place in the economy which will lead to an integration of media, electronic, computer and financial services. These new 'inter-disciplinary, cross-sectoral production/service providers' find it much easier to develop new electronically-supported services than the small and medium-sized enterprises which still use traditional means, especially in the German crafts sector.

Recommendations from practical experience for further development

Process-related qualification means giving up of purely sector-oriented qualification methods in order to acquire the ability to handle the latest technology. It calls for the ability to deal with the online work requirements arising from the new corporate application concepts within the context of global economic activities. Integrated training provision in this case not only contains pure EDP training but also other components such as business management skills and the learning of project management methods for order-oriented action with corporate goals. In doing this, the present basis of vocational knowledge and skills and comprehensive professional experience should be taken as the point of departure for the core qualification of the skilled workers to be trained. New qualifications should enhance the exist-

"Recommendations from practical experience for further development

a) process-related qualification means giving up of purely sector-oriented qualification methods (...)

b) electronic publishing is no longer the exclusive domain of printing and publishing firms. (...)

c) strategic communication and information management skills require the acquisition of a new cross-sectional qualification (...)

d) strategic online management means a far-reaching reorganisation of industrial locations and corporate processes (...)

e) it also seems to be useful to give unemployed groups of people with an initial training certificate training for the acquisition of EDP cross-sectional qualifications in the area of online commercial transactions (...)"



“Through targeted promotion measures, process, product and service innovations can contribute to the creation of new jobs. They can become an integral part of a strategic policy which systematically leads to a reorganisation of industrial locations by strengthening the human resources of SMEs.”

“Online management and Internet applications will certainly play a key role in these processes in the coming years. The creation of new jobs through the development of new markets, new products and services are the vital demands arising from global change, but they are not self-propelling processes.”

ing knowledge and skills. They should be 'adapted' with a view to new current requirements which should, in part, be seen as transsectoral requirements calling for new cross-sectional qualifications.

Independent of the additional computer-specific skills, target group-specific, holistic enterprise concepts should also be taught. Furthermore, the different access conditions and various intended levels of use of the information and communication technology instruments have an important effect on the methodological and didactic design of the measure concerned, even if training contents and objectives are almost identical.

Electronic publishing is no longer the exclusive domain of printing and publishing firms.

Electronic publishing is increasingly becoming an integral part of daily routine communication and interaction processes in small and medium-sized enterprises. It has lost the nature of an exclusive service as every PC user with a connection to the WorldWideWeb virtually publishes news and thus contributes to its electronic reproduction.

Strategic communication and information management skills require the acquisition of a new cross-sectional qualification which can be called 'online computer use competence'.

In addition to the classification in core and peripheral EDP occupations following Dostal, 'online computer use competence' is emerging as a cross-sectional qualification for the functional areas of purchase and procurement and also marketing and sales in the company. These are central strategic areas of activity which are relevant for all small and medium-sized enterprises.

This new cross-sectional qualification for skilled online work is an addition to the existing package of professional qualifications and requires not only EDP application skills in handling networked systems, but also a whole series of additional competences such as business acumen, skills in providing independent services, virtual competences and transcultural skills.

The concept of media competence (Gut, P./Walch, P.: Thesis paper on tele-work) in the broadest sense of the term should be viewed as the future pre-requisite to achieve the target of equal opportunities and it is thus much broader than the exclusively functional ability to handle hardware and software.

Performing online transactions means the ability to use the Internet as an instrument, to see its tools and applications in a new strategic overall frame which enables the provision of services and the manufacture of goods. This is important because: user competence alone is not equivalent to an integrated technical competence which adds the innovations of information and communication technology as working instruments to technical contents and thus produces a synthesis. In other words, we are dealing with a general need for integrated training provision which combines technical, methodological and online skills and imparts them in a practice-oriented, time-efficient modular course.

Strategic online management means a far-reaching reorganisation of industrial locations and corporate processes which take place both at the regional and company level and at the inter-company and supra-regional level.

The epochal innovation, the Internet, accelerates these processes and leads to the building of online communities at regional level and at European and international level. The new division of labour affects digital mass production as a world-wide process of information processing and further processing.

Within this new division of labour, as the project shows, different forms emerge of access to and use of the possibilities of networked activities, both between persons and enterprises, and between companies and countries.

It also seems to be useful to give unemployed groups of people with an initial training certificate training for the acquisition of EDP cross-sectional qualifications in the area of online commercial transactions so that they are in a position to handle networked systems, particularly if the initial qualification is a technical certificate.



In continuing training for information technology, increased efforts should be undertaken to ensure that companies willing to cooperate are included as early as possible in the implementation of the training measure – after it has been approved – and that steps are taken, e.g. wage subsidies or other job integration measures, to ensure that trainees, immediately after completion, get a job where they can directly apply this newly acquired knowledge.

Summing up:

Through targeted promotion measures, process, product and service innovations can contribute to the creation of new jobs. They can become an integral part of a strategic policy which systematically leads to a reorganisation of industrial locations by strengthening the human resources of SMEs.

Online management and Internet applications will certainly play a key role in these processes over the coming years. The creation of new jobs through the development of new markets, new products and services are the vital demands arising from global change, but they are not self-propelling processes.

Evidently interventions and public subsidies in the field of continuing training and, in some cases, economic promotion are required here. There is a real need for government-supported, internationally relevant initial and continuing training projects which is of vital importance for coping with structural change in Europe.

What is needed is public measures which assist the enterprises to make effective use of the new tools and, at the same time, give unemployed workers the chance to re-enter the social process of work through the acquisition of additional knowledge and skills. In the last resort, this means the targeted creation of initial and continuing training provision for enterprises and workers, including the target groups with difficulties on the labour market (in particular, the unemployed and the long-term unemployed), a comprehensive training provision which is actively oriented to the future and implies an integrated cross-sectoral qualification including online EDP skills.

A pluralist European vocational training system, to be created, should establish a standard oriented to best practice and the most successful solutions in the existing initial and continuing training systems in the countries of Europe.

The image of a Europe with an unequal distribution of chances and opportunities will be cemented if single regulations from other countries can be used as an alibi to make a so-called 'modern feature' socially acceptable – in Germany, the abolition of the regular dual training system would mean a step backwards – especially if it is remembered that the central ideal which is the real 'modern feature' is equal opportunities for all.

Liberté, Egalité, Fraternité, are these the future-oriented goals for occupational profiles in the European context or the dusty remnants of an antiquated tradition? This question will, among other things, have a decisive impact on the availability and the ability to master the new media, on the acquisition of media competence! Here we evidently need dynamic measures to cope with the future!

In terms of vocational training this means the best possible training opportunities for those youngsters who have not managed to get a regular training place or to complete regular training. Remedial training courses should be created for them so that, through special pedagogical assistance and additional training components, they are able to learn and get the chance of acquiring the best possible recognised initial training certificate which is not below the normal standard prevailing in the dual system.

In terms of continuing training this means that a standard should be established here too in the transfer of knowledge and skills for the application of information technology, so that this standard is not set and developed by the software market leaders alone. A standard of this nature could be incorporated in the regular provision of initial and continuing vocational training. This would be a major step towards equal opportunities and the acquisition of media skills as an integral part of the general competence of responsible citizens.

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But who can create, finance and subsidise such model VET (initial and continuing training) projects which can establish European standards in information and communication technology?

Outmoded attitudes, such as outdated management concepts, lack of IT competence and financial constraints are the obstacles to the necessary, inevitable and unwanted change. Unwanted, because up to now productivity rises have meant more destruction than creation of employment.

These developments mean new demands on institutions, enterprises and workers, including the jobless and social welfare recipients who are being marginalised by society. This means that initial and continuing training will in future have to as-

sume crucial tasks which have to be tackled without too much loss of time.

The creation of new jobs through the development of new sales and procurement markets and the further development of traditionally produced services and products are the central issues of global change but they are not self-propelling processes. They should be put in the centre of policy issues and should not be viewed by those responsible for economic questions, economic progress and training issues as exotic elements but as real and immediate concerns.

In our view this is an action area for the creation of public projects, in particular, transnational and Europe-relevant IT studies and initial and continuing training schemes.



The state of European vocational training research, its functions and its problems¹



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Introduction

We hear and read many statements about the growing importance of international and comparative research into education and vocational training in connection with the political process of European unification and supranational cooperation, both in national and supranational discussions, but also in literature on research strategy or vocational training policy.

Comparative or supranational research goes hand in hand with international cooperation between research establishments or between individual researchers. The researchers engaged in such cooperation not only learn from each other about the subject of their study (e.g. the vocational training systems of the participating countries or regions), but also acquire knowledge about diverse national and linguistic – or, to use a more general term, cultural – characteristics of scientific research and the conditions to which it is subject in the various participating countries. The acquisition and awareness of such knowledge are essential to the success of supranational research (Drexel, 1999).

Besides the diverse national traditions in the realm of vocational training research, discipline-like structures are developing at the level of the European Union. These may take the form, for example, of repeated communications on issues, subjects and topics relevant to the research field of vocational training. These developments are occurring in connection with an ever-increasing level of publishing

activity. While similar *numbers* of major players are active in the field of vocational training research at the national and international levels, they are not necessarily the same players.

Apart from some initial probings, (Dietzen Kuhn 1996, Tessaring 1998) the field of knowledge described here has scarcely been documented in any detail. This paper collates some of these initial findings and is designed to encourage further study. It borrows, though not exclusively, from interpretative models rooted in the tradition of comparative educational research.

In view of the diversity of national and cultural understandings of vocational training and of research, and hence of vocational training research, we propose the following definition as a working basis:²

Vocational training research is the study, on the basis of scientific criteria and appropriate methodology, of personal and social conditions, of the processes involved in imparting and acquiring knowledge and skills and the outcome of those processes, and of attitudes and behaviour patterns which have a particular bearing on potential or actual roles in the economic and social division of labour.

In this paper, the term *European vocational training research* is used to describe the relevant research activities that are commissioned, conducted and funded pursuant to a decision taken independently or jointly by the European Union. There is, of course, a considerable volume of national and international research

We hear and read many statements about the growing importance of international and comparative research into (vocational) education and training, both in national and supranational discussions, but also in literature on research strategy or vocational training policy. This paper collates some initial findings and is designed to encourage further study.

1) This essay is an abridged and amended version of the paper by Grollmann and Sellin, *The state of (comparative) vocational training research in the European Union – results of a preliminary study*, 1999.

2) Adapted from the definition formulated by the German Research Society Senate Commission on Vocational Training Research, 1990.



“Vocational training research is the study, on the basis of scientific criteria and appropriate methodology, of personal and social conditions, of the processes involved in imparting and acquiring knowledge and skills and the outcome of those processes, and of attitudes and behaviour patterns which have a particular bearing on potential or actual roles in the economic and social division of labour.”

into vocational training which lies beyond the scope of our definition.

Subject-matter and discipline, methodology and research aims

The historical processes whereby an academic discipline evolves and the selection of the research aims and methodology of that discipline are far from being clear-cut. They depend to a great extent on regional, sectoral and national circumstances (Kämäräinen, 1998).

A few examples follow by way of illustration.

The academic discipline of vocational education (*Berufspädagogik*) in German-speaking countries is closely connected with the training of instructors for technical colleges (*Berufsschulen*), which has been done at university level since the 1960s. *Berufspädagogik* is both a generic and a specialised term, in the sense that it is used primarily to denote the training of instructors in technical trades for manufacturing industry and small craft businesses.

The traditional separation in German-speaking countries of vocational education, with its focus on technical training, from commercial education, with its focus on training for careers in the service sector, may be highlighted as a prime example of the way in which history shapes the profile of vocational training systems. Even the academic study of technical subjects derived from the trade schools in Germany at the end of the 19th century. The higher commercial colleges (*Handelshochschulen* or *Wirtschaftshochschulen*) were a subsequent development. The division into these two streams of teacher training (Keiner and Schriewer, 1990) is therefore a legacy of the historical differentiation between two different institutional frameworks (on the one hand the higher commercial colleges, where teachers are trained for commercial colleges, and on the other hand the technical education departments of higher technical colleges or universities, where trade instructors are trained). Although these institutions originally engaged exclusively

in the training of teachers or instructors, the lecturers who worked there gradually developed an academic interest in their respective forms of training: technical training on the one hand and commercial training on the other.³ The subject-matter of this type of research is therefore closely linked to the historical development of vocational training; moreover, its establishment as an academic discipline was also connected with the interests of particular occupational classes.

The continuing significance of the guild chambers (*Handwerkskammern*), the trade guilds and the chambers of industry and commerce in the German system of vocational training is one of the symptoms of the great importance attached to occupational status in German vocational training.

In other countries where vocational training has traditionally played more of a stopgap role alongside general secondary education and further education in technical and scientific disciplines, vocational training research as such has had a great struggle to establish its legitimacy and suffers from a fragile infrastructure (Patiniotis, 1998).

German teacher training in the technical and commercial domains is rooted in a long tradition of studying educational philosophy and practice and the more recent tradition of educational research. It has also focused constantly on fundamental issues on the general educational agenda and their implications for technical and commercial training (Stratmann, 1993). For all the differences that may exist, the basic fact is that the ontological reference value is the individual and the conditions in which his or her personal qualities, whatever form they might take, can develop.⁴ Ever since the 1970s, studies from the realms of economics and the social sciences have become increasingly relevant to vocational training research. In this context, we should highlight research into the labour market, occupational research, sociological research into the impact of qualifications on industry, research into career patterns and (socio-) psychological research (German Research Society, 1990).

In simplified terms, it could be said that French vocational training research, for

3) Cf. Deutsche Forschungsgemeinschaft (German Research Society), 1990, Lauterbach and Mitter, 1998, and Georg, 1998.

4) For a critique of this approach, see, for example, Klaassen, Kraayvanger and Onna 1992.



example, is far more firmly rooted in the development of the positive empirical sciences than is the case with the German tradition of teacher training. The discussions that have long been conducted in Germany on issues of educational philosophy have no equivalent in France, or at least not as part of a more general discipline (Schriewer, 1983, p. 361). More so than in Germany, the term 'vocational training research' seems to be used in France to define a common body of subject-matter, irrespective of the angle from which it is approached. For that reason, there is scarcely any discussion in France about the value and importance of socio-economic research compared with research into technical and commercial education theory in the context of the vocational training research category to which both belong. In France, vocational training research rather seems to merge into socioeconomic research (Keiner and Schriewer, 1991). Research into general education and educational theory, however, largely eclipses vocational training research, which is symptomatic of the less exalted status enjoyed by the latter.⁵

Certain links that have only recently been explored by the German school of researchers, for example, have already been the subject of vocational training research in other countries for quite some time. This is the case, for instance, with the link between vocational training and organisational development (Dybowski, Pütz and Rauner, 1995). In countries where the organisational structure of companies is strongly influenced by occupational demarcation, which acts implicitly in determining future organisational development (Drexel, 1995), such questions, which are answered elsewhere with the aid of organisational theory and research, are a matter for the relevant occupational sciences and for trade-specific educational theory.

In the Anglo-Saxon tradition, a different significance is undoubtedly attached to research into the transition from school to work than, for example, in Germany, where the transition is relatively 'gentle', especially because of the *duales System* of alternating theoretical and practical training (Rauner, 1998; Finch, Mulder, Attwell, Rauner and Streumer, 1997). The relatively advanced development and the

very significant volume of this research in the United Kingdom (and in other English-speaking countries such as Canada and the United States) should be seen in the context of a specific set of problems, conditioned to a great extent by the way in which the employment system and the education system operate and interact.

European vocational training research

The diversity of approaches, subjects and development levels to be found in vocational training research conducted in the EU Member States, of which only a few examples have been given here, provide some indication of the everyday problems that tend to affect European vocational training research. From the very practical initial problem of identifying the 'right' partner for a research project to the joint definition of the research subject, and from there to the recording of the findings, research processes on a European scale have particular difficulties to overcome.

In general, and more so at European level than within individual Member States, it may be said that the defining element of research into vocational training is its subject-matter rather than its assignability to the realm of a particular academic discipline.

Research goals in the field of European vocational training are very closely linked, as a rule, to the political process of European unification. Relevance to this process and the potential to solve problems associated with it are generally essential criteria for the provision of support.

A close connection with political issues and potential solutions to political problems is not unusual; indeed, it has long been a generator of international and supranational research. To simplify matters somewhat, we can juxtapose these practical interests of international social research with a possible interest in the empirical testing or validation of theories.

In the context of European vocational training research, we frequently encounter the question (sometimes implicit and

"In general, and more so at European level than within individual Member States, it may be said that the defining element of research on vocational training is its subject matter rather than its assignability to the realm of a particular academic discipline."

⁵ This question of status, however, is not a specifically French problem. The tendency to marginalise research and educational theory relating to vocational training from the educationalist mainstream may also be observed in the United Kingdom and Germany, albeit to a lesser extent.



“(...) the crossing of two pairs of opposites: theoretical and practical interest on the one hand and specificity and universality on the other (...) produces four different (ideal) types of underlying research goal.”

sometimes explicit) whether acceptance of the principle of increasing European integration does not imply the need to replace the traditional comparative form of research into general and vocational education with new approaches.

In its logic, this debate is reminiscent of the discussion on the relationship between these very disciplines that took place in the fields of *comparative and international research into education theory* (Epstein 1994, Mitter 1993, Schriewer 1992). While the defining feature of *comparative* research tends to be an analytical interest in ‘putting relationships into relation’, i.e. comparing relationships that exist in the context of particular systems with those that exist in other systems (Schriewer, 1987), the purpose of *international* (or *internationalist*) research is to acquire rationally grounded knowledge as a means of promoting mutual understanding and unity between people from different cultural backgrounds.

Both of these goals underlie European vocational research projects to varying degrees. The aims of the Europrof project,⁶ for example, are defined as follows:

“The long-term aim of the project is to develop a ‘community’ of VET researchers and practitioners and the ‘professionalisation’ of VET [our italics], in other words to gain the recognition of VET as a discipline and a profession in its own right. In the shorter term, the project aims to build an international network of VET researchers and to develop new qualifications for VET professionals, planners, teachers and trainers, through a European Masters (MA) qualification to be offered in universities in different European countries.”⁷

Hannan, on the other hand, defines the following objective:

“To analyse in detail the impact of national institutional differences in education/training arrangements [our italics] and in ET and labour market linkages on the nature and success of transitions: issues such as exclusion, extent of level and content congruence (‘job matching’), ‘qualification inflation’, over-qualification,

etc. The main hypothesis is that substantial interaction effects exist between such national institutional arrangements and the relationships between social origins and education/training outcomes, as well as the relationships between the latter and school-to-work transition processes and outcomes.”(Hannan, 1999)

In both cases, the defined aims are legitimate goals of supranational research. Each presupposes the other, so the two are interrelated.

If we wish to classify supranational research projects by research goal, further categories may be borrowed from the tradition of comparative education. Hörner distinguishes four functions of comparative research,

“which derive from the crossing of two pairs of opposites: theoretical and practical interest on the one hand and specificity and universality on the other” (Hörner, 1997).⁸

This combination produces four different (ideal) types of underlying research goal:

The first type of research goal, rather theoretical in nature and associated with the search for the specific features of a particular social structure or ‘culture’, serves what is known as the idiographic purpose of comparative research. This category would include what we call national studies, in which the development of vocational training, for example, is examined in its national or cultural historical context.

A fairly frequent research goal of European projects is ‘meliorism’, which is a cross between the dimensions of practical interest and specificity. The most obvious example of this type of activity is the so-called ‘best-practice’ research. Since supranational research work in Europe is closely associated with the political process of European unification, research projects with a ‘meliorist’ goal are particularly commonplace. Many pilot projects under the Leonardo programme, for instance, are undoubtedly based - at least implicitly - on this type of rationale.

However, researchers cannot be warned enough against the simplistic assumption

6) Europrof: New Forms of Education of Professionals in VET.

7) <http://www.itb.uni-bremen.de/projekte/europrof/default.htm>; details of World Wide Web sources were checked for currency at the time of going to print.

8) This was introduced into the discussion on European vocational training research by Mitter and Lauterbach in Cedefop research report (Tessaring, 1998).



that alien models can easily be adapted into one's own culture.

The almost experimental function created by the combination of the dimensions of theoretical interest and the quest for the universal can often be seen fairly clearly, for example, in the research into the transition from school to work. This quest for general scientific laws might also be referred to as nomothetic research.

The 'close-matching' method, as the empirical observation of the transition from school to work and of its subjective dimension in environments which, though differing from one country to another, are similar in nature (e.g. regional and industrial/commercial structure, occupational profile), represents an attempt to create a quasi-experimental situation in which specific features are observed and compared within identical settings (cf. Brown, 1999).

A practical research goal combined with the quest for the universal was termed evolutionary by Hörner. The objectives of the Cedefop network Ciretoq⁹ and of the new Cedefop-ETF project *Scenarios and strategies for CVET in Europe* (Van Wieringen, 1998, and Cedefop, 1999) can also be subsumed under the same heading.

It is not enough merely to illustrate these four categories we have briefly outlined by citing individual projects; in order to demonstrate their analytical value, we should also examine which of these four functions are covered by the existing body of European vocational training research.

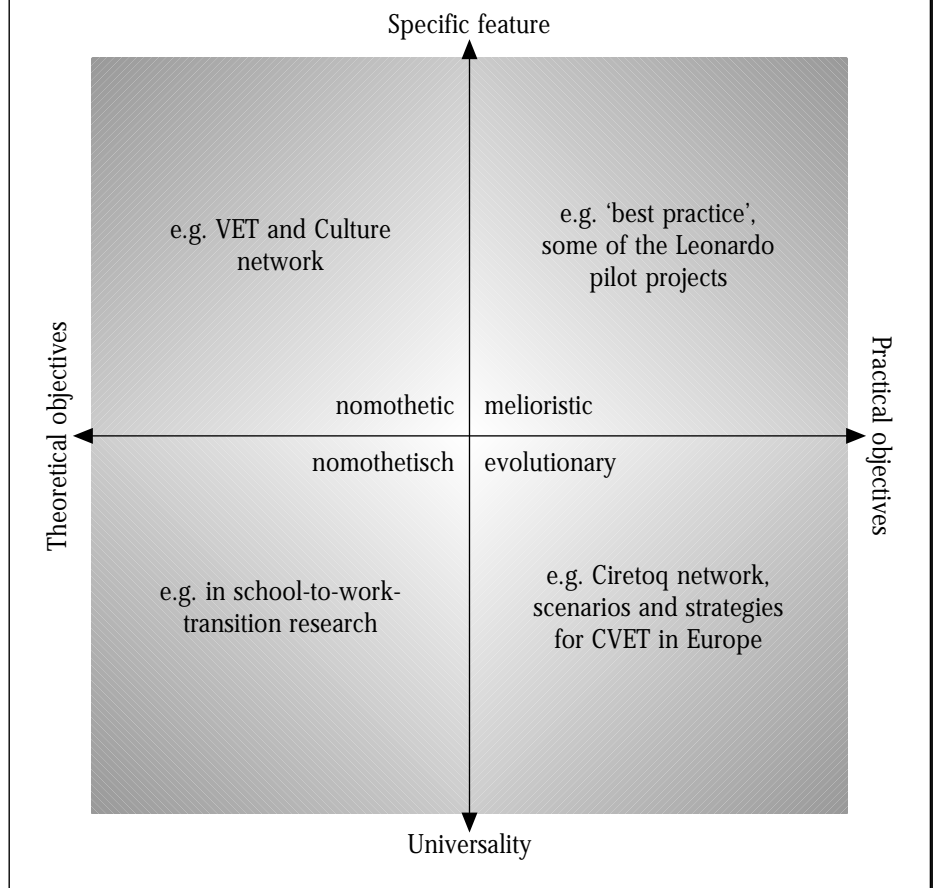
It is noticeable that the idiographic and experimental research goals, i.e. the two types of comparative research that focus on the theoretical dimension of typology, occur least frequently.¹⁰

In the diagram below, this is reflected in the fact that European educational and vocational training research - as we defined it at the start of this paper - is essentially concentrated on the right of the matrix.

The functions on the left of the matrix, however, constitute an important basis for the proper interpretation of the findings

Diagram 1
Objectives of European vocational training research

(in accordance with the analytical model in Hörner, 1997)



of supranational research projects and hence for the rational adaptation of these findings to political practice.

Outlook

A more detailed analysis of research activity in the field of vocational training with reference to the process of European unification remains a desirable goal for each of the Member States in the context of their respective priorities. The documentation of this subject area is extremely important if transparency is to be established with regard to the future development of European vocational training research.

Not least as a result of European research in the field of vocational training, there is now a considerable fund of both explicit

9) Circle for Research Cooperation on European Trends in Occupations and Qualifications.

10) See, for example, the proportions of the EU budget allocated to pilot projects and to studies and analyses respectively under the Leonardo da Vinci programme as set out in COM(97)399.



“A more detailed analysis of research activity in the field of vocational training with reference to the process of European unification remains a desirable goal for each of the Member States in the context of their respective priorities. The documentation of this subject area is extremely important if transparency is to be established with regard to the future development of European vocational training research.”

and implicit knowledge of supranational research and research cooperation (this includes not only knowledge of the various research subjects, but also familiarity with the cooperative process itself). Apart from some preliminary work on the subject, however, this knowledge has not yet been documented in any detail or in a comparative form. This deficit will not encourage the development of discipline-like structures in the field of European vocational training research, since the failure to disseminate hard-won knowledge to a broad target population will often result in a succession of other researchers having to set off in quest of the same knowledge. Further studies in this field should not only contain an inventory of previous research findings on the subject in question, but should also explain those findings with reference to their discovery and their function in relation to other aspects of the research field.

Likewise, consideration ought to be given to neater dovetailing of national research and European research in the field of vocational training, so as to avoid a situation in which each research system operates in isolation. Vocational training research bodies in the Member States could, for example, enjoy the huge advantages that result from the use of external assessors (in this case experts from other national research traditions) (Klaasen, Kraayvanger and Onna, 1992).

The aim must be to achieve understanding on quality standards, methods and objectives of research at European level. The first preliminary work in this direction has either appeared or is awaiting publication (Dietzen and Kuhn 1998, Tessaring 1998, Lauterbach and Sellin, 1999). This field, which has traditionally been regarded as the preserve of basic research, could also be fertile ground for applied research. It has scarcely featured to date in the support policies of the EU. Existing imbalances in terms of its development as a discipline in the various Member States have been untouched by European policy. Moreover, if research is too closely bound to predetermined and perhaps short-term interests, this will impair its function as a ‘social corrective’.

This discussion, then, should not only be conducted in academic circles or in theoretical terms; it must also figure on the political agenda (Dietzen and Sellin, 1998). Given the rather large number of networks on vocational training research that now exist (see above), we shall presumably witness a process in which networks develop their own specific profiles. What the outcome of this process will be, however, remains uncertain for the time being. Perhaps as the process unfolds and structures develop it will be able to break down conventional divisions, such as those between applied and basic research or between so-called qualitative and quantitative research.

Bibliography

Attwell, G. (1997): *New Forms of Education for Professionals in Vocational Education and Training (EUROPROF)*, in Agnes Dietzen and Michael Kuhn (ed.), *Building a European Co-operative Research Tradition in Vocational Education and Training. The Contribution of the Leonardo da Vinci programme's surveys and analyses*. Berlin and Bonn, pp. 69-83.

Antal A. B., Dierkes M. (1992): *Internationally comparative research in Europe: The underutilized resource*, in Dierkes M., Biervert B. (ed.), *European Social Science in Transition. Assessment and Outlook*. Campus, Frankfurt/Main, and Westview Press, Boulder, Colorado, pp. 585-610.

Brown A.: *Comparative analysis of skill formation processes in England, Germany and the Netherlands*, in: Lauterbach U., Sellin B. (ed.), *Vergleichende Berufsbildungsforschung in Europa. Ansätze, Politikbezüge, Innovationstransfer*. Due for publication in 1999.

CEDEFOP (1998): *Training for a changing society. A Report on current vocational education and training research in Europe*. Luxembourg.

CEDEFOP (1998): *Vocational education and training - the European research field. Background report 1998*. Vols 1 and 2, Thessaloniki.

CEDEFOP (1999): *Work Programme 1999*. Thessaloniki.

Deutsche Forschungsgemeinschaft (German Research Society) (1990): *Berufsbildungsforschung an den Hochschulen der Bundesrepublik Deutschland* (report). VCH, Acta Humaniora - Weinheim, Basle, Cambridge and New York, 1990.

Dietzen A., Kuhn M. (ed.) (1997): *Building a European Co-operative Research Tradition in Vocational Education and Training. The Contribution of the Leonardo da Vinci programme's surveys and analyses*. Berlin and Bonn, .



- Ingrid Drexel I.** (1999): *Vergleichende Berufsbildungsforschung mit bildungspolitischen Nutzen - konzeptuelle, forschungsorganisatorische und förderpolitische Erfordernisse der Qualitätssicherung*, in Lauterbach U., Sellin B. (ed.), *Vergleichende Berufsbildungsforschung in Europa. Ansätze, Politikbezüge, Innovationstransfer*. Due for publication in 1999.
- Dybowski G., Pütz H., Rauner F.** (ed.) (1995): *Berufsbildung und Organisationsentwicklung*. Donat, Bremen.
- Epstein E.H.** (1988): *Comparative and International Education: Overview and historical Development*, in Thomas Neville Postlethwaite (ed.), *The Encyclopaedia of Comparative Education and National Systems of Education*. Pergamon Press, Oxford, pp. 918-922.
- Finch C., Mulder M., Attwell G., Rauner F., Streumer J.** (1997): *International Comparisons of School-to-Work Transition*, in *EERA Bulletin*, October, pp. 3-15.
- Georg W.** (1998): *Berufs- und Wirtschaftspädagogische Perspektiven*, in *Bildung und Erziehung*, Vol. 51, No 1, pp. 59-65.
- Hannan D.:** *Comparative Analysis of Transitions from Education to Work in Europe (CATEWE)*, in Lauterbach U., Sellin B. (ed.), *Vergleichende Berufsbildungsforschung in Europa. Ansätze, Politikbezüge, Innovationstransfer*. Due for publication in 1999.
- Hörner W.** (1997): *'Europa' als Herausforderung für die Vergleichende Erziehungswissenschaft - Reflexionen über die politische Funktion einer pädagogischen Disziplin*, in Kodron Ch., von Kopp B., Lauterbach U., Schäfer U., Schmidt G. (ed.), *Vergleichende Erziehungswissenschaft. Herausforderungen - Vermittlung - Praxis*. Commemorative publication to mark the 70th birthday of Wolfgang Mitter. Böhlau, Cologne, pp. 65-80.
- Keiner E., Schriewer J.** (1990), *Fach oder Disziplin. Kommunikationsverhältnisse der Erziehungswissenschaft in Frankreich und Deutschland*, in: *Zeitschrift für Pädagogik*, Vol. 36, No 1, pp 99-119.
- Klaasen C., Kraayvanger G., van Onna B. (1992):** *Forschung zwischen Bildung und Beruf, Diskussionsthesen zur DFG Denkschrift 'Berufsbildungsforschung an den Hochschulen der Bundesrepublik Deutschland'*, in *Zeitschrift für Berufs- und Wirtschaftspädagogik*, Vol. 88, No 3, pp. 245-251.
- Lauterbach U., Mitter W.** (1998): *Theory and Methodology of International Comparisons*, in Tessaring M. (ed.), *Training for a changing society. A report on current vocational education and training research in Europe*. Luxembourg, pp. 235-272.
- Lauterbach U., Sellin B.** (ed.): *Vergleichende Berufsbildungsforschung in Europa. Ansätze, Politikbezüge, Innovationstransfer*. Due for publication in 1999.
- Mitter W.** (1993): *Vergleichende Pädagogik*, in Lenzen D. (ed.), *Pädagogische Grundbegriffe*. Rowohlt, Reinbek bei Hamburg.
- Patiniotis N.** (1998): *Labour market and functioning of VET in Greece*, paper presented at the FORUM workshop on VET and the Labour Market, Berlin, 22-25 October.
- Rauner F.** (1998): *Moderne Beruflichkeit*, in Euler D., AG Berufsbildungsforschungsnetz (ed.) *Berufliches Lernen im Wandel - Konsequenzen für die Lernorte?* Documents of the third Forum on Vocational Training Research at the Friedrich Alexander University of Erlangen and Nürnberg. Institut für Arbeitsmarkt- und Berufsforschung, Research Publication No 214, pp. 154-171.
- Schriewer J.** (1983): *Pädagogik - ein deutsches Syndrom? Universitäre Erziehungswissenschaft im deutsch-französischen Vergleich*, in *Zeitschrift für Pädagogik*, Vol. 29, No 3, pp. 359-388.
- Schriewer J.:** *Welt-System und Interrelationsgefüge. Die Internationalisierung der Pädagogik als Problem Vergleichender Erziehungswissenschaft*, Inaugural lecture in the Faculty of Arts (IV) of the Humboldt University of Berlin, 7 December 1992.
- Schriewer J.:** *Funktionssymbiosen von Überschneidungsbereichen: Systemtheoretische Konstrukte in vergleichender Erziehungsforschung*, in Oelkers J., Tenorth H.-E. (ed.), *Pädagogik, Erziehungswissenschaft, Systemtheorie*. Weinheim and Basle, 1987, pp. 76-101.
- Stratmann K.** (1993): *Berufs-/Wirtschaftspädagogik*, in: Lenzen D. (ed.), *Pädagogische Grundbegriffe*. Rowohlt, Reinbek bei Hamburg.
- Teichler U.** (1997): *Vergleichende Hochschulforschung - Probleme und Perspektiven*, in Christoph Kodron, Botho von Kopp, Uwe Lauterbach, Ulrich Schäfer and Gerlind Schmidt (ed.), *Vergleichende Erziehungswissenschaft. Herausforderungen - Vermittlung - Praxis*. Commemorative publication to mark the 70th birthday of Wolfgang Mitter. Böhlau, Cologne, pp. 161-172.
- van Wieringen F.** (1998): *Scenarios and Strategies for the vocational training and adult education sector*. Amsterdam.

This section has been prepared by **Anne Waniart**, and the Documentation Service with the help of members of the national documentation network

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



Europe International

Information, comparative studies

Les transformations des compétences du personnel technico-commercial dans une société basée sur les connaissances : études de cas en France, au Portugal et en Ecosse.

PAUL J-J et al. (eds.)
Institut de recherche sur l'économie de l'éducation, IREDU; Dinâmia - Centro de Estudos sobre a Mudança Socioeconómica; Scottish Qualifications Authority, SQA; European Centre for the Development of Vocational Training, CEDEFOP
Luxembourg: EUR-OP, 1998, VII, 120 p. (Panorama, 77)
ISBN 92-828-3761-0, en
Cat. n°: HX-14-98-825-FR-C
From EU national sales offices - <http://eur-op.eu.int/en/general/s-ad.htm>.
FR

This study identifies the competences required by the technical/commercial staff (European level 3-4) working in the two sectors in which the impact of technological change has been very strong, i.e. the electronics and the telecommunications sector. These two sectors are developing rapidly due to R&D (research and development) activities and growing competition resulting from deregulation of the telecommunications markets. The study has the aim of identifying the place of Level 3-4 technicians in technical/commercial activities and showing how innovation has developed and had an impact on the structure of their occupational profiles

Identification, validation et accréditation de l'apprentissage antérieur et informel : France.

FEUTRIE M
European Centre for the Development of Vocational Training, CEDEFOP
Thessaloniki: CEDEFOP, 1998, V, 79 p. (Panorama, 71)
ISBN 92-828-2551-5, en
Cat. n°: HX-11-97-423-FR-C
From EU national sales offices - <http://eur-op.eu.int/en/general/s-ad.htm>.

[op.eu.int/en/general/s-ad.htm](http://eur-op.eu.int/en/general/s-ad.htm).
EN DA

The report on the assessment of prior and non-formal learning in France presents the contributions of experts on the following questions: to what extent can methodologies for the assessment of non-formal learning be considered valid and reliable? To what extent are these assessments accepted by individuals and the labour market?

Das Berufsbildungssystem in Österreich.

PISKATY G et al.
European Centre for the Development of Vocational Training, CEDEFOP
Luxembourg: EUR-OP, 1998, 125 p.
ISBN 92-828-3551-0, de
Cat. n°: HX-07-97-684-DE-C
From EU national sales offices - <http://eur-op.eu.int/en/general/s-ad.htm>.
DE

Following an introduction explaining the demographic and economic context, this document gives a comprehensive description of the vocational training system in Austria. It features the initial and continuing vocational education and training system, the regulatory and financial framework, quality aspects, and finally, trends and perspectives.

Development of standards in vocational education and training: volume 1.

KUNZMANN M; LAUR-ERNST U; HOENE B
European Training Foundation, ETF
Federal Institute for Vocational Training, BIBB
Luxembourg: EUR-OP, 1998, 47 p. (Manual)
ISBN 92-828-4427-7
Cat. n°: AF-07-98-001-EN-C
From EU national sales offices - <http://eur-op.eu.int/en/general/s-ad.htm>.
EN

This publication is an integral part of an on-going project on the role of standards



in vocational training which was launched by the European Training Foundation in 1995 within the framework of its Advisory Forum. The Advisory Forum, comprising training experts from EU Member States, the partner countries and international organisations, delivers opinions and advice on the Foundation's work programme. Four sub-groups of the Advisory Forum were established in 1994 to discuss and prepare papers on key vocational training themes. Standards in vocational education and training was identified as one of these. The selection of this topic responds to the urgent need in many of the Foundation's partner countries for international expert advice on the development of modern, forward-looking education and training standards for skilled manpower at intermediate level (skilled workers, craftsmen, qualified employees, skilled service providers). The international sub-group 'Standards in Vocational Educational and Training' set up by the Advisory Forum of the European Training Foundation met on three occasions in 1995, 1996 and 1997. At these meetings it addressed the following subjects: contents of occupational standards; procedure for their development; and implementation and evaluation.

URL: <http://etf.it//etfweb.nsf/pages/vetmanual.html>

Education and training: the transfer of knowledge.

Economic and Social Committee of the European Communities

Brussels: ESC, 1997, 34 p.

Economic and Social Committee of the EC, Rue Ravenstein 2, B-1000 Brussels

EN FR DE ES

The 5th International Meeting of Economic and Social Committee and Similar Bodies was held in Caracas on 7 and 8 March 1997 on the subject of a society in tune with its needs and potential. This pamphlet contains the final declaration of the Caracas conference together with the Economic and Social Committee's Opinion on the Green Paper on education, training and research, and on the obstacles to transnational mobility. Finally, the third part of the pamphlet presents a summary of the work of the Economic and Social Committee and the progress

achieved by the European Union in the field of education and continuing training.

Reviews of national policies for education: Italy.

Organisation for Economic Cooperation and Development, OECD
Paris: OECD, 1998, 117 p.
ISBN 92-64-16112-0, en
EN FR

A major reform of the entire Italian education and training system is in progress, aiming at the improvement and integration of learning in schools, universities and regional training institutions in order to respond to changing social and economic demands for knowledge, skills and qualifications. Fundamental changes will include the decentralisation of administrative responsibilities and increased school autonomy enabling the grassroots actors in education and training to respond more flexibly to the diversity of individuals, local and enterprise needs and to utilise more effectively available funds and technologies. Central elements in the reform will also provide evaluation and increased accountability across the system.

Transfer of Information and Experiences: further education and training in the social dialogue in Europe.

SCHMITT B

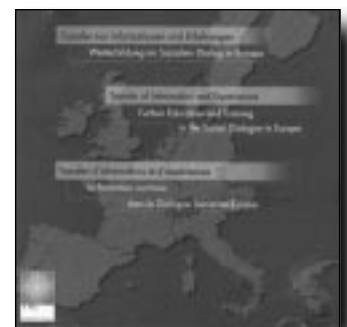
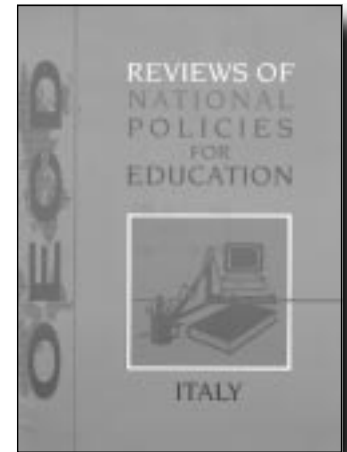
Fondation Hans-Böckler-Stiftung

Luxembourg: EUR-OP, 1998

From EU national sales offices - <http://europ.eu.int/en/general/s-ad.htm>.

EN FR DE

This CD-ROM presents the results of the project 'Transfer of information and experience (TIE)' which received financial support from 1996 to 1998 from the European Commission within the framework of the Leonardo programme (EUR/95/2/1182/PII, 1, 1b). It is based on two previous projects from the European Union's Force and Leonardo programmes. The aim of these projects is to compile the data on social dialogue and continuing vocational training in Europe and to present it in a form which can be used as a basis for the transfer of information and experience.





Innovation (Journal)

Grundlagen der Weiterbildung
(Neuwied) 2, 1998, VIII, p. 49-98
ISSN 0937-2172
DE

This issue of the journal addresses the status of the notion of innovation in vocational training. The authors are interested in differentiated approaches toward defining innovation and in the potential and limits of observing and describing innovation in continuing vocational training. Other issues addressed by the authors are the effects on innovation of European cooperation, and the limits and weaknesses of the concept of innovation. A number of the articles deal with the Leonardo da Vinci Programme.

Financing a system for lifelong learning.

LEVIN H M
Education Economics (Abingdon) 6/3,
1998, p. 201-217
ISSN 0964-5292
Carfax Publishing Ltd,
P.O. Box 25,
Abingdon,
Oxfordshire OX14 3UE, England
EN

This article attempts to set out a framework for financing lifelong learning that will be more comprehensive, efficient, equitable and flexible than the existing approach. After specifying the essential components of lifelong learning, it raises the question of how the system should be financed and who should pay. The article proceeds by suggesting a method for constructing both international and national databases on lifelong learning that can assist in improving finance. Special emphasis is placed on the roles of information, incentives and consolidation of existing sources of finance into a more nearly unified approach.

Vocational education as general education.

LEWIS T
Curriculum Inquiry (New York) 28/3,
1998, p. 283-310
ISSN 0362-06784
John Wiley Sons Inc.,
605 Third Avenue,

New York NY10016, USA
EN

It is argued that vocational education belongs in the common core of school knowledge. A distinction is made between vocational education for jobs and vocational education about work. It is the latter aspect of the subject that allows the general education claim to be made. The former aspect, it is argued, belongs beyond the secondary school. The resilience of the liberal/vocational divide is reflected upon. So is the 'new vocationalism', which seeks to narrow the divide. The ideas of those who, consistent with Deweyan ideals, have imagined a unitary curriculum that includes vocational knowledge are examined. A three-part rationale for vocational education as general education is then discussed, namely, meaning of work, practical knowledge as knowledge and situated cognition.

Individual lifelong learning accounts: towards a learning revolution.

SMITH J; SPURLING A
Leicester: NIACE, 1998, 96 p.
ISBN 1-86201-033-1
Publication Sales,
NIACE,
21 de Montfort Street,
Leicester LE1 7GE, England
EN

The authors argue that the existing fragmented, provider-led arrangements for education and training must be replaced by a responsive, learner-led system; and that a culture of lifelong learning must be developed throughout the population. Policies to achieve change of this magnitude will need to be thoroughly designed. They must have the range to support individuals' learning from cradle to grave, and the reach to cover the whole of society. In this book Smith and Spurling look at the funding aspects of a lifelong learning strategy, and set out the case for the development of a funding infrastructure to promote the development of a lifelong learning culture in the UK. The core of the model is a system of individual lifelong learning accounts, with save to learn, borrow to learn and credit to learn functions.



Lernkonzepte im Wandel: die Zukunft der Bildung.

DIECKMANN H; SCHACHTSIEK B
Stuttgart: Klett-Cotta, 1998, 238 p.
ISBN 3-608-91950-3
DE

This volume is a collection of articles which take a closer look at the problems of personalisation and the spread of technology. Various areas and issues of the contemporary further and continuing training situation are studied, possibilities of overcoming the current dilemma in education are presented and contrasting positions and views are dealt with in a controversial discussion. The debate on the future of education is conducted from the entirely different angle of further and continuing training. The following themes, among others, are discussed; changing education to avoid a dead-end, inefficient handling of adult learning, lifelong learning, multimedia - the key to the future of learning, technology and the future of education.

Lifelong learning: The key to Europe's economic revival.

LUNDGREN K
National institute for Working Life
Solna: National Institute for Working Life,
1999, 170 p.
ISBN 91-88384-85-3
*National Institute for Working Life,
SE-171 84 Solna, Sweden*
EN

The aim of this book is to contribute to implementation of the strategy of lifelong learning in everything, from individual businesses to European politics. Economics is all about optimal utilisation of resources. The most important thing to develop is human resources. This book will point out arguments, firmly based on science, for the necessity of lifelong learning and a possible strategy for attaining this.

Enterprises and vocational education and training: expenditure and expected returns.

BILLET S
Journal of Vocational Education and Training (Wallingford) 50/3, 1998, p. 387-402
ISSN 0305-7879

*Triangle Journals Ltd,
P.O. Box 65,
Wallingford,
Oxfordshire OX10 0YG, England*
EN

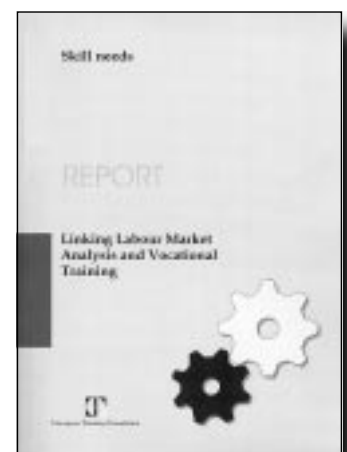
Governments are encouraging enterprises to enhance their expenditure on vocational education and training to assist with maintaining and developing further national skill bases, while sharing the cost with those enterprises. However, there are clear differences between what government intends and enterprise practice. This paper reports a review of the recent literature which focuses on the expenditure by enterprise on vocational education and their interest in securing returns on that expenditure. Enterprise expenditure is far from uniform and is influenced by factors including their size, speciality and location. Moreover, enterprise interest on returns on their expenditure is focused on goals which are of a different kind from those of government and may not be aligned to achieving long-term national goals of maintaining and developing the skilfulness of the workforce.

European Union: policies, programmes, participants

Skill needs: linking labour market analysis and vocational training.

European Training Foundation, ETF
Luxembourg: EUR-OP, 1998, 135 p.
ISBN 92-9157-161-X, en
Cat. n°: AF-12-98-093-EN-C
*ETF
Villa Gualino,
Viale Settimio Severo 65,
I-10133 Torino.
info@etf.it*
EN

This document is the follow-up to a two and a half day workshop which took place in Turin, Italy, on 20-22 November 1997. In the past, in the centrally planned economies of the partner countries, there was an inherently close link between production and training systems. Following the abolition of this centrally planned system, this close link, and the interrelated link between skill users and skill producers was broken. The growing private sector, emerging from the privatisation of





large state enterprises and the setting up of SMEs, does not as yet communicate directly and effectively with vocational education and training institutions and decision makers. As a consequence, vocational education and training decision makers in the partner countries are now facing a serious information gap between the skills required by society and the economy to proceed to a structural adaptation of their system and to design appropriate training programmes. The assumption behind the workshop was that information on the demand and supply of skills is a prerequisite for vocational education and training decision makers to allow them to adapt their systems to the needs of a changing socio-economic environment.

URL: <http://www.etf.it/etfweb.nsf/pages/vetreport3>

Free movement of persons in the European Union: an overview.

SUBHAN A (ed.); PAPAHAZI E
European Parliament - Directorate General for Research
Brussels: European Parliament, 1998, 46 p.
(Civil Liberties- PE 167.028)
European Parliament,
Rue Wiertz,
B-1047 Brussels,
Tel: (0032-2) 284 3684,
Fax: (0032-2) 284 9050,
e-mail:asubhan@europarl.eu.int
EN

This working paper seeks to contribute to an all-round understanding of the freedom to move and reside within the Union. Its main objective is to be used as a guide, both by EU citizens and third country nationals who are already legally resident within the EU or wish to enter and/or work in one of the Member States.

Teaching, learning, information: towards an open Socratic school: proceedings of the Ampere Seminar, February 1997.

European Commission - DG XXII; Amitié - Bologne; Université catholique de Louvain
Luxembourg: EUR-OP, 1998, 176 p.
ISBN 92-828-2414-4, en
Cat. n°: C2-07-97-046-EN-C

From EU national sales offices - <http://europ.eu.int/en/general/s-ad.htm>.

EN FR DE

The proceedings of this seminar are a part of the awareness-arousing efforts launched by the Commission in the action plan entitled 'Learning in the information society'. This is based on the principle that a sound integration of information technologies in education is not possible without improving the quality of the proposed products, developing the equipment of our schools and encouraging teachers to become more aware of the stakes involved in this change by offering them training in reformed teaching practices.

Public Sector Information: a key resource for Europe: green paper on public sector information in the information society.

European Commission
Luxembourg: EUR-OP, 1999, 28 p.
(Documents COM (98) 585 final)
ISSN 0254-1475, en
Cat. n°: CB-CO-99-021-EN-C
From EU national sales offices - <http://europ.eu.int/en/general/s-ad.htm>.
EN FR DE DA EL ES FI IT NL NO PT SV

Public sector information plays a fundamental role in the proper functioning of the internal market and the free circulation of goods, services and people. The objective of this Green Paper is to undertake a broad public consultation with a view to examining the main issues at stake and also to triggering a political discussion at European level. Some issues may require technical solutions, some may be dealt with by improving administrative procedures, others will require political solutions. The subjects addressed in the Green Paper were drawn from the results of the public consultation and proposals for action could be depended on them.

URL: <http://www.echo.lu/info2000/en/publicsector/greenpaper.html>

Job opportunities in the Information Society: exploiting the potential of the information revolution.

European Commission
Luxembourg: EUR-OP: 1999, 23 p.
(Documents COM (98) 590 final)



ISBN 92-828-1735-0, en

Cat. n°: CE-18-98-801-EN-C

From EU national sales offices - <http://europa.eu.int/en/general/s-ad.htm>.

EN FR DA DE EL ES FI IT NL NO PT SV

The report has been adopted by the European Commission in the framework of the European Employment Strategy and the preparation for the European Council in Vienna (Dec.'98). It concludes that employment prospects in the IS sector are bright if Europe acts to make the most of

the potential of this rapidly growing and changing industry. The report calls for concerted action in three main areas: development of an enterprise culture, organisational change and adaptability, boost of skills and technical literacy levels. It proposes a timetable for monitoring and benchmarking the progress being made and indicates the importance of the Information and Communication Technologies in the EU economy.

URL: http://europa.eu.int/comm/dg05/social/info_soc/jobopps/summen.htm





From the Member States

DK **Efteruddannelsesstrategier på danske erhvervsskoler.**

[Continuing vocational training strategies at Danish vocational schools].

BISBJERG NIELSEN C; HERTEL F

Danmarks Erhvervspædagogiske Læreruddannelse, DEL

Ålborg: DEL, 1998, 11 p.

DEL,

Rigensgade 13,

DK-1316 Copenhagen K

DA

Danish vocational schools offer a large number of continuing training courses. The aim of this report is to describe the schools' strategies for continuing training. It describes various strategies implemented at the schools, i.e., how continuing training courses are developed, planned, implemented and evaluated. Several models are presented which can be used for evaluating strategies. The report is targeted at both private training providers and vocational schools.

Efteruddannelsen arbejdspladsen: læring på jobbet - arbejdspladsen på skolebænken.

[Continuing training and the workplace: learning on the job - the workplace goes to school].

GOTTLIB B; HØYRUP S; SEEBERG T

Det Personalepolitiske Forum

Copenhagen: PF, 1998, 47 p.

ISBN 87-7848-175-9

Kommuneinformation,

Sommerstedgade 5,

DK-1718 Copenhagen V

DA

The focus in this report is on on-the-job training and lifelong learning. It describes the current development within the field from an empirical and theoretical perspective. Concrete examples from training courses for persons with a low level of educational attainment are given. Furthermore, it describes how a close relation between continuing training and daily work can be established, and how continuing training can be of use in connec-

tion with organisational change. The report is a collection of research results made in a number of projects initiated by the Municipal Continuing Training Committee. The report has character of a toolbox and is to inspire leaders responsible for education within counties and municipalities.

D **Handlungsorientierte Ausbildung der Ausbilder: neue Empfehlungen und Rechtsverordnungen: mit Rahmenstoffplan, Ausbilderverordnung, Musterprüfungsordnung.**

Bundesinstitut für Berufsbildung, BIBB

Bielefeld: Bertelsmann, 1998, 85 p.

ISBN 3-7639-0846-3

DE EN

The new Trainer Regulation for Trade and Industry (Ausbildereignungsverordnung gewerbliche Wirtschaft, AEVO-GW) went into effect on 1 November 1998. The legislation sets new standards for the training of trainers. The curriculum and examination regulations have been modernised as has the training concept, which is now more skills-oriented. The new concept does without overly theoretical teaching units organised by subject. Instead the trainers are prepared for their job with practical instructions on the processing of occupation-specific tasks and problems. The volume provides an overview of the newly adopted legislation and introduces the new programme design.

Kompetenzentwicklung in der Berufserziehung: kognitive, motivationale und moralische Dimensionen kaufmännischer Qualifizierungsprozesse.

BECK K; DUBS R (eds.)

Zeitschrift für Berufs- und Wirtschaftspädagogik (Stuttgart) Beiheft 14,

1998, 215 p. + bibl.

ISBN 3-515-07408-2

DE

Sponsored by the German Research Association (Deutsche Forschungsgemeinschaft) until the end of 1999, the pro-



gramme 'Teaching and Learning Processes in the Initial Training of Commercial Personnel' is the framework of the ten articles published in this issue of the journal. The contributions are examples of university business pedagogy for practical vocational training carried out in-plant or in vocational schools. The concern is with new work structures and conditions in this area. The issue presents preliminary findings on the topics of: knowledge acquisition through goal-oriented learning methods, acquisition of practical skills, the impact of the current situation and conditions, the interaction between occupation-related interests and skills, learning motivation and ethical skills.

Erfolgsfaktor Qualifikation: unternehmerische Aus- und Weiterbildung in Deutschland. Summarised version: Report commissioned by the Federal Ministry of Economics.

Institut für Mittelstandsforschung, Bonn;
Institut für Mittelstandsökonomie, Trier;
Bundesministerium für Wirtschaft, BMWi
Bonn: BMWi, 1998, II, 44 p.
(Studienreihe / BMWi, 98)
ISSN 0344-5445
DE

A number of self-employed individuals were interviewed for the report, which considers the relationship between continuing vocational training needs and supply for this group. The study takes into account all forms of training contents, from general education up to higher education. These curricula were examined as to their practical usefulness for launching business start-ups. Recommendations are also made for improving the willingness of business starters to invest more in their own training. The study shows that training and continuing vocational training provide what is necessary to meet demands in this area. This is true in terms of curricula, duration and price. It was also found that a considerable percentage of young entrepreneurs fail during the first five years due to inadequate training. An important reason for business failures is insufficient entrepreneur qualifications. The recommendations suggest ways of alleviating such deficiencies.

IRL Qualifications (Education and Training) Bill, 1999.

Government
Dublin: Stationery Office, 1999, 53 p.
Government Publications,
Postal Trade Section,
4-5 Harcourt Road,
IRL-Dublin 2.
EN

The principal features of this bill are: the establishment of a National Qualifications Authority which will promote quality in further and higher education and training and promote access, transfer and progression into and within education and training; the establishment of the Further Education and Training Awards Council which will incorporate the current certification functions of FAS-Training and Employment Authority and other training certification bodies; the establishment of the Higher Education and Training Awards Council which will incorporate the higher education and training certification functions of the National Council for Educational Awards and other relevant bodies; the provision for the first time for an Institute of Technology to have delegated to it the powers to make awards.

Note: A supplementary 'Explanatory and financial memorandum' is published with the Bill.

NL WEBnet Demonstratie CD.

Vereniging Landelijke Organen Beroeps-
onderwijs, COLO
Zoetermeer: COLO, 1999
1 CD Rom
COLO,
Postbus 7259,
2701 AG, Zoetermeer,
079-3523000
NL

The WEBnet (WEB = Adult and Vocational Education Act) is a project launched by the national vocational education bodies. The aim of the project is to improve communication between educational institutions and national bodies in respect of the development of occupational practice. This can be accomplished by facilitating mutual data exchange using Information and Communication Technology [ICT] applications. National bodies and all educational in-



stitutions can offer, exchange and combine information in an efficient and effective way. Jointly, they can work towards a situation in which (the right) on-the-job training organisations offer participants optimal educational routes in everyday occupational settings. The demonstration CD affords insight into the following WEBnet applications: a central register of on-the-job training organisations, a training placement bank, the National Vocational Education Bodies [LOB] module (details of on-the-job training organisations, practical instructors and participants) and the module Regional Training Centres [ROC] (mailing directories).

Monitoring and financing lifelong learning: country report The Netherlands.

BAAIJENS C et al.
Max Goote Kenniscentrum beroepsonderwijs volwasseneneducatie, MGK
Amsterdam: MGK, 1998, 213 p.
*Max Goote Kenniscentrum,
Wibautstraat 4,
1091 GM, Amsterdam,
020-5251245*
EN

How far is the Dutch society away from a society in which lifelong learning is a reality? This report tries to give an idea of the gap to lifelong learning that remains to be closed. In order to do so targets for participation in different forms of education are set, so that participation gaps can be calculated. These target rates are mostly based on the 'best practice' in OECD countries. Next, the costs of closing these gaps are calculated, based on the current costs of education. Of course these costs are only rough indicators of the costs that would turn out in reality. In some cases alternative targets were added to get a scenario approach which gives insight in the costs of reaching different targets. However it should be kept in mind that these targets are still somewhat arbitrary.

P **A edificação da escola de amanhã e as mudanças necessárias na administração pública.** [The building of tomorrow's school and the changes that are necessary in public administration].

BENAVENTE A
Instituto Nacional de Administração, INA
Lisbon: INA, 1998, p. 341-348
*Instituto Nacional de Administração,
Palácio do Marquês de Pombal,
P-2780 Oeiras*
PT

This communication points out strategic issues of the national education system, focusing the evaluation as an important factor of a new model of school management and envisaging a greater autonomy, responsibility and integration in the local communities. The author wonders, among other points, how effective is the actual centralised and bureaucratic model of the educational system in force at present. A new management is justified with a view to facilitating the community participation. The evaluation is presented as a major factor, as a tool capable of measuring the effectiveness and the efficiency of the education system.

UK **The beginnings of GNVQs: an analysis of key determining events and factors.**

SHARP P
Journal of Education and Work
(Abingdon) 11/3, 1998, p. 293-311
ISSN 1363-9080
*Carfax Publishing Ltd,
P.O. Box 25,
Abingdon,
Oxfordshire OX14 3UE,
England*
EN

This article is a historical analysis of the beginnings of General National Vocational Qualifications in the years 1989-91. Use is made of evidence obtained from interviews with key participants in the policy-making processes including a former minister, a former Confederation of British Industry leader, senior civil servants and awarding body administrators. The political impetus behind GNVQs is brought out and the way in which the National Council for Vocational Qualifications managed to take control of events and the proposals is analysed in depth. The importance of questions such as 'parity of esteem' with A levels and the factors determining the basic design framework of the 'Mark 1' GNVQ model are considered. The article concludes by showing how the short-



comings of the 'Mark 1' model coupled with the early emphasis on 'parity of esteem' have focused public attention on the failings of GNVQs rather than on their undoubted successes with the students for whom they were intended.

Targets and standards.

TWINING J

EDUCA (Guildford) 188, 1998, p. 8-10

Guildford Educational Services Ltd,

32 Castle Street,

Guildford GU1 3UW, England

EN

Reports on recent developments involving the linking of educational and training standards and targets. Comments on the National Learning Targets for England and on changes in employment resulting in changing skill requirements. Suggests that targets might prove an incentive in tackling poverty and social exclusion. Reports on new training standards proposed for employers and on a proposal to introduce accredited status for further education colleges. Comments on a Cedefop discussion paper on human resource accounting and the implications this has for training within organisations.



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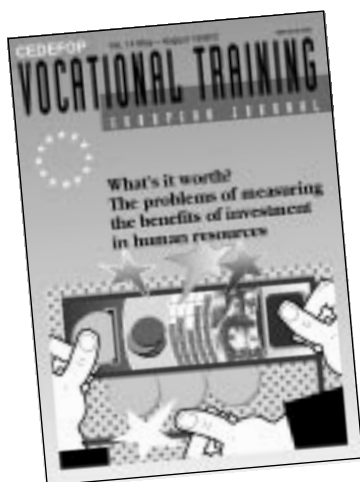
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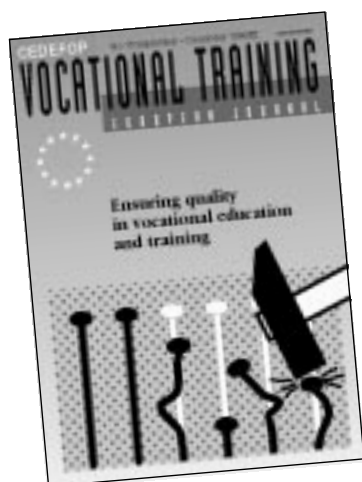
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