

European perspectives on learning while working

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This paper has been produced in order to contribute some European perspectives to the discussion on supporting personal development in small and medium size enterprises through a consideration of the relationship between learning and working. It draws upon a mixture of general themes, such as learning while working, self-directed learning, non-formal learning and support for learning at work, together with examples drawn from particular national contexts, including Germany, France, Denmark, Netherlands and the UK.

1. Germany: continuing key role of employer co-ordination, different ways to develop tacit knowledge and greater attention being given to learning in the workplace

German vocational education and training (VET) policy was long regarded as one of the key ingredients for a high skills economy and it was thought that it would provide the platform for continuing prosperity. However, the German skills machine faltered in the 1990s and the edited volume by Culpepper and Finegold (1999) reviewed the merits and viability of the German model of skills development in the face of technological and organisational change. What is of interest in this context is that the volume is very strong on the role of employers, including many small companies, in skill development. Culpepper (1999), drawing upon evidence from France and eastern Germany, highlights the critical importance of well-functioning institutions of employer co-ordination, if employers are to be encouraged to make substantive investments in skill provision.

Point 1: critical importance of well-functioning institutions of employer co-ordination, if (small) employers are to be encouraged to make substantive investments in skill provision.

Finegold and Wagner (1999) focused their attention upon what was traditionally one of the strengths of the German economy and their approach to skill development: capital goods manufacturing built upon a system of diversified quality production, using the abilities of highly skilled workers and engineers. They point out, however, that this system was essentially based around individual performance. Hence the shift towards the multi-functional team as the basic organisational unit for work performance in lean manufacturing, typical of US practice, posed particular challenges in a German context. These authors, in a study of the pump industry in the US and Germany, confirmed the thesis of Herrigel and Sabel that “most German assemble-to-order and customized plants had made relatively little use of multi-functional teams, at least in part because the personal identity of German skilled workers appeared to conflict with the blurring of individual roles and narrowing of some technical skill requirements that can accompany the move toward a team-based organization” (pp. 152-153).

Finegold and Wagner (1999) go on to advocate that German manufacturing companies need to develop their own production concepts that “fully utilize the

potential of their highly skilled worked and newly-deployed *Meisters*” (p.155). This has the apparent advantage of reinforcing the importance of career pathways within the firm in ways that build upon the extensive initial training typical of the German VET system. This may be a sensible approach in those industries where competitive advantage can be extracted from knowledge and expertise that mainly resides within individuals strongly associated with particular companies. On the other hand, in more dynamic sectors such as telecommunications it may be that tacit knowledge is generated and shared at least partly through individuals moving between companies in the industry (Mason and Wagner, 2000).

Point 2: diversified quality production, using the abilities of highly skilled workers and engineers, can be built around individual performance and clear occupational pathways, where a company builds up its store of knowledge and expertise. This approach works best in a relatively stable environment where depth of technical knowledge developed over time remains a continuing asset. However, a viable alternative approach may be for (tacit) knowledge to be spread between companies by a comparatively rapid employee churn.

From the above it is clear that a very strong system of initial training on its own is not sufficient to guarantee effective performance in all types of work. Indeed Dehnbostel (forthcoming) argues that since the 1970s learning in Germany has undergone a revival in the workplace. This can generally be attributed to the widespread use of new information and communication technologies, new work and organisational concepts and the shift from an industrial to an information society, coupled with the desire of companies to facilitate improvement, optimisation, development and innovation processes. These can only be achieved through intensive learning processes. New learning approaches and forms, such as independent learning, lifelong learning, learning bays and quality circles represented an initial response to these changes and were particularly designed to help people acquire key qualifications and extensive occupational competence.

One central contention of this approach was that that the level of key qualifications (or transversal skills) needed for occupational competence could only be acquired through the work process. As a result of this, learning bays were established within the work process in the early 1990s. They were based on the following assumptions. Hardly any key qualifications are learned at general education schools; and in training workshops within the context of initial vocational training around 20% key qualifications and 80% specialised qualifications are learned. This contrasts with learning bays where around 80% key qualifications and 20% specialised qualifications are learned (Bittmann et al, 1992). Key qualifications included concepts such as ability to work as a member of a team, draw conclusions, systematic thinking and personal qualities.

Dehnbostel (forthcoming) argues that the rediscovery of learning in the workplace represents an about-turn in vocational training development in Germany. Since the early days of industrial vocational training in the last thirty years of the 1800s, vocational training had become increasingly centralised, systematised and regulated. Until the 1980s, the prevailing trend to improve the quality of vocational training concentrated on taking learning out of the workplace. The reversal of this trend goes hand in hand with new learning approaches and a move away from centralised

learning and organisational concepts. In continuing training this is reflected by cuts in out-of-company courses, more attention being given to the interaction of work and learning in the work process and the promotion of independent and lifelong learning. The changes in the 'dual system', the German initial training system, which was strictly regulated up to now, are more deep-seated. Training periods in the workplace are being extended, new forms of work-related learning are being developed and training regulations are becoming more flexible and work-oriented. Dehnbostel (forthcoming) argues that bringing work-related learning back to authentic work contexts should be regarded partly as a complement to and partly as a replacement for existing learning concepts. People have realised that the skills needed in the workplace can be acquired only to some extent in external vocational training. Nevertheless, learning in the workplace still has certain limitations, even in modern work processes. Economic, technical and structural constraints in particular restrict learning and learning-friendly approaches to work processes.

Dehnbostel (forthcoming) argues that the growing significance of informal learning is linked to the revival of learning in the workplace, particularly in relation to group and project work. On-the-job learning can fundamentally be divided into informal learning and intentional learning. Intentional learning is organised and works towards a prescribed goal, while informal learning achieves an educational goal, generally without consciously striving towards a specific result. The use of operating equipment, diagnostic systems and computer-controlled machinery is broadening the range of learning requirements and consequently extending external experiences and learning by doing, but the links to sense and practice nonetheless remain. They lead to knowledge from experience by means of informal learning processes.

Dehnbostel (forthcoming) argues that nonformal learning and learning by doing in the workplace depend largely on the type of experiences undertaken at work, e.g. upon which sensory, cognitive, emotional and social processes take place. The role each of these plays is heavily dependent on the work tasks and content, the structuring of operations and company organisation, social relationships and corporate culture. Also informal learning may lack key pedagogical elements, organisation or goals and runs the risk of remaining random and restricted to one specific situation. Integrating informal and intentional learning, as has been developed and tested in learning bays, for example, promises to be successful. The emphasis here lies specifically on the development of key qualifications and the interaction of vocational training and organisation development.

The increasing significance of nonformal learning is also due to the too narrow limits of organised and intentional learning processes. Only a certain amount of occupational competence can be gained through intentional learning processes. Dehnbostel (forthcoming) argues that the learning and development processes that form the actual basis of qualified workers' occupational knowledge are determined to a large extent by informal learning processes at work. Operational models for learning by doing assume that knowledge and insight is gained not when actions are repeated, but rather when unforeseen problems and uncertainties crop up during the working process and have to be solved.

Point 3: even in countries with strong systems of initial training there is a recognition that learning and working in the workplace are partly

complementary and partly competing – how the relationship can be handled most effectively varies between contexts.

Ideally those working towards becoming skilled should be operating in workplaces that offer ‘strong learning environments’, where it is possible for learners to apply their developing skills, knowledge and understanding in different contexts (Onstenk, 1994). There are some obvious difficulties for some small companies in providing the full range of learning opportunities required for the development of a broad occupational competence. In Germany, one consequence of the reformation of apprenticeship training in engineering and electrical occupations was a discontinuation of apprentice training among a number of smaller companies, who could not meet the higher requirements (Grünwald et al, 1989). This was despite these companies typically employing a high proportion of skilled workers and being committed to training (Lane, 1988). One response to this problem was to allow several different firms to enter into an agreement with a trainee to provide the training collectively. The rationale for this was that it gave access to a much wider range of experiences, including use of different types of equipment.

The existence of networks of interdependent small companies in some occupational and geographical areas might increase the possibilities of such co-operation (Bull et al, 1995). The increasing interdependence between suppliers and major manufacturers, which means employees of a smaller company may spend lengthy periods of time working in the larger one could also be utilised for training and development (Dankbaar, 1995). Also some innovative small or medium-sized enterprises can offer very rich learning environments, particularly if they are linked into ‘multi-firm networking processes’ (Rothwell, 1993). In such circumstances, work itself is concerned “with extending levels of organisational adaptability and flexibility and with developing new areas of knowledge and technological competence” (Rhodes and Wield, 1994, p168). The richness of the work/learning environment is such that knowledge and expertise rapidly develop through work, which is itself taking place in different contexts (and possibly companies). In such circumstances great emphasis is given to possession of “a broad mix of skills is required to achieve viable levels of flexibility in the development and delivery of products and services, and to sustain viable inter-firm networks” (ibid., p 169).

Point 4: small companies, particularly if involved in broader networks, can offer challenging environments for learning while working.

2. France and the Netherlands: assessment of non-formal learning

The interest in non-formal learning in Germany mentioned above is mirrored in other European countries. Assessment has traditionally been understood as a way of judging and/or measuring the learning and performance of individuals within formal education and training settings (Little and Wolf 1996). This traditional role is currently undergoing substantial change, as a number of European countries are paying increasing attention to the development of assessment methodologies trying to measure and judge the informal or non-formal learning taking place at work, in leisure time activities and at home (Bjørnåvold 2000). Bjørnåvold and Brown (forthcoming) analyse recent developments in this area in the Netherlands and France, and it may be useful to reproduce here examples drawn from these two countries. The Dutch system

offers an interesting example of how to link non-formal learning to formal qualifications, while the introduction of the 'bilan de competence' in France can be seen as an example that falls outside the dominant approaches of linking strongly assessments of non-formal learning to formal education structures. In this case assessment methodologies are defined within a labour market or enterprise setting.

In these cases the process may not be oriented towards formal qualifications, but rather seek identification of competences relevant to individual careers (within or between enterprises) or in the context of human resource management. Less constrained by what is defined as relevant by the formal education and training system, these approaches may potentially be better positioned to identify those competences that are not developed within formal education and training and thus transcend formal qualifications. In some instances a balance between education and training and the labour market is sought through the introduction of qualification standards developed in co-operation between educational authorities and representatives of employers and employees. While systems linked to formal education have been dominant so far, the number of approaches linked to the labour market or enterprises seems to be growing.

The Dutch development of systems for assessment of non-formal learning depends upon a methodology involves a candidate wishing to have his or her non-formal learning recognised having to go through two stages. In the first stage, all available documentation is gathered in a portfolio (formal certificates, statements from employers, examples of work carried out and so on). This documentation is then compared with the requirements listed in the national qualification structure and a decision on partial qualification may be reached. Normally this stage will be followed by a practically oriented assessment aiming at formal certification. The methodology is centred on assessment of the planning, execution and evaluation of a practical task. In the first stage, planning, the aim is to assess the candidate's methodological competencies and his or her ability to plan the task ahead. Criterion referenced interviews are used together with observation of work preparation. The second stage focuses on the execution of the task, trying to assess execution as well as reflective skills through a combination of observation (of process and result) and a criterion-oriented interview. In the third stage, evaluation, the candidate is asked to reflect on the task performed, to identify alternative ways of doing it, and to indicate how the chosen approach could be transferred to other working situations.

The emphasis on evaluation and reflection is an interesting aspect of the Dutch approach, and that part of the assessment utilises four strands of questioning. First, and related to the preparations, why did the candidate act in a certain way and were other options available? Second, and related to the process itself, why did the candidate act as she or he did and could other options be envisaged? Third, and related to the product (or service), how can the candidate tell that it complies with requirements? Fourth, and related to the completion of the task, why did the candidate act the way she or he did and are other options possible? This illustrates the strong dialogical character of the approach - success relying not only on formal procedures and descriptions but also on the abilities and experiences of the assessors.

Point 5: reflective dialogue and evaluation can be used to broaden and deepen learning in the workplace (and in part compensate for the possible narrowness of experience in the work tasks performed by an individual).

In France, the 1985 law on the 'bilan de competence' introduced a system for the validation of occupational competences acquired outside formal education. The initiative for this may come from an enterprise or a worker. This right was strengthened through the Law of December 1991 entitling employees to educational leave (of 24 hours or 3 working days) for the Bilan process. This was intended to permit the employee to review his or her occupational and personal competencies, as well as their motivation and aptitudes, in order to facilitate his or her occupational as well as their educational development. Most national systems of non-formal assessment are intrinsically linked into formal education and training, but the bilan de competence is focused on the labour market and the enterprise.

Officially, the Bilan has a clear formative role. The idea is to give feed back to the employer or employee on questions of competence in order to support further learning or career development. More than 700 organisations and institutions have been accredited as 'centres de bilan', competing over requests for assessments. The profile and professional basis of these organisations varies greatly, as does their methodological approach. The following examples show how two different centres have approached the process.

The first centre, a public training organisation, divided the process into three phases. First, a preliminary interview where the motivation and needs of the employee were clarified and where the procedures of the Bilan, and its voluntary character, were emphasised. Second, an investigative phase where motivation, personal and occupational interests as well as personal and occupational competencies are analysed and mapped out, using standardised tests to decide on matters like temperament and preferences. The intention was to reconstruct the background of the individual, in order to see whether there was a competence 'core' on which to build. Finally, in the third phase, the results of the analyses are presented to the candidate and used as a basis for dialogue on future training and career plans, in a way comparable to occupational guidance. After having concluded this process, the candidate receives a synthesis document supposed to identify clearly his or her personal and occupational competencies, thus helping to clarify the necessary steps to be taken to realise future plans. According to formal regulations, this document should normally contain information on: the context of the Bilan (who initiated it, how was it realised?); the competences and abilities of the assessed person in light of their occupational aims; the prospects for realising these occupational aims; aims concerning education and training; and actions needed to realise these aims. This document then becomes the property of the candidate, and can not be used by others without the consent of the person in question.

The second centre, a private enterprise, divided the process into six phases (five if the customer is an individual). The first (enterprise) stage consists of an interview with representatives of the management in order to present the process of the Bilan and clarify the objectives of the enterprise. During this interview the centre tries to get an overview of potential career development plans and training pathways in the enterprise. In the second phase the actual mapping of individual competences starts.

This process operates according to criteria, such as description of own working situation, network, problems and tensions at the workplace and so on. The idea is to capture the main characteristics of the person and his or her situation at work. At the end of this interview, the candidate is given the task to work out an overview of his or her own competences, formal or non-formal. The fourth phase uses this 'homework' as a point of departure and tries to establish whether existing competences are fully utilised. The idea is to define more precisely the potential of the person and clarify where improvements could be envisaged. At the end of this phase the candidate is given the possibility to take part in a standardised test covering the most important elements of his or her competences. In the fourth and the fifth phase, the analytical part is used as a basis for guidance. The candidate is given 'homework' between these phases and the objective is to increase consciousness of his or her potential and future possibilities. The sixth phase, the actual handing over of the written Bilan, finalises the process. Normally this document will contain three or four alternative but inter-linked proposals for further development.

How successful the various approaches to the bilan de competence have been is difficult to judge. There is no institutionalised control of the results of the Bilan process. Some criticisms of the approach have been made. First, there are doubts that the formative role of the Bilan is not strong enough, as the synthesis document is rarely able to point to occupational projects or prospects; and normally rather general recommendations for further training are given. Second, in spite of the efforts to analyse the competence of each candidate, formal and non-formal, many synthesis documents stick to formal elements, that can be documented through certificates and diplomas. Finally, in some cases, a blind faith in standardised and automated tests seems to exist, preventing tailored analyses appropriate for the circumstances of the individual.

These weaknesses do not alter the fact that the bilan de competence is one of the few competence measurement systems operating on a large scale. It is also one of the few systems operating on a formative basis - the main idea being to clarify the potential of individuals. This, it is hoped, will then aid their further learning and strengthen their career possibilities. That the bilan de competence does not aim to give formal recognition of competences according to a qualification standard makes it distinctly different from the other systems so far considered. The main reference points are individuals and enterprises. Other external references are not referred to, at least not formally, although there might very well be informal standards reflecting the professional background and methodological choices of the centres de bilan. Hence the summative role of the Bilan is intentionally weak, if we use summative in the sense of 'summative for the accountability to the public' (Black 1998), whereas this is a central feature of traditional assessment and testing in France.

Point 6: it is possible to offer institutional support to a system that looks to develop employees in ways considered to be meaningful by the individuals concerned (rather than necessarily fitting the requirements of formal education and training).

The increased emphasis given to non-formal learning does draw attention to the rich variety of learning areas and forms available outside formal education and training. Learning outside formal education and training institutions is increasingly presented

as a prerequisite for a learning strategy aiming at a broader knowledge and competence base, transcending specific organisations, technologies, contexts and problems. This does though present particular challenges for assessment.

3. Denmark: continuing vocational training supporting learning in context

Oates et al (forthcoming) point out that, in Denmark, within the ‘integrated delivery of CVT (continuous vocational training)’ the national continuing vocational training (AMU) system since the late 1980s the concept of ‘soft qualification’ has gained currency. The intention of researchers and developers was to turn away from technical qualifications with tightly defined criteria. Over time some common understandings of the role of these ‘soft qualifications’ became established (Clematide & Agø Hansen, 1996):

- ‘qualifying’ in personal skills is highly dependent on context
- qualifying in personal skills is an intrinsic, but under-recognised part of qualifying in technical skills
- assessing to fixed standards is highly problematic
- historical circumstances affect which of the personal skills are considered important at a given point in time.

Oates et al (forthcoming) highlight that, as a consequence of these developments, the objective of curriculum development within the AMU system is now to analyse and meet the training needs of learners through continuous negotiation and dialogue with the learners (Arbejdsmarkedssryrelsen, 1998). In Denmark concern about the linkages between learners’ needs, the context they are in and the application of the learning has come to dominate. Within the AMU system, training institutions have to function as consultants to learners and to enterprises, fixing not on only on the quality of the courses and learning which are supplied, but also on the preparation and follow-up from the training/learning. Within this, the application of learning to new work contexts is crucial – the concept of *adaptability* is at the heart of policy and theory relating to continuing vocational training.

Point 7: there may be considerable value in learners and trainers explicitly discussing how learning can be transferred between contexts. The emphasis is upon adaptability: for example, through looking for contexts in which key skills are applied, not just trying to develop key skills and hoping they will transfer.

4. The Netherlands: Core problems - using core activities, problems and dilemmas of an occupation as a basis for learning in the workplace

In the last few years in the Netherlands increasing attention has been paid to the idea of using core problems as a basis for learning in the workplace and this process has recently been mapped by Onstenk and Brown (forthcoming). Core problems are defined (Onstenk, 1997a,b) as the problems and dilemmas that are central to the practice of an occupation. The analysis of the complex whole of problems can for specific occupations be condensed into central, specific, characteristic combinations

of production problems, organisational forms and social-cultural problems. These sets could be described as core problems that are of central importance for occupational performance. Core problems occur regularly as part of occupational practice, and they are characteristic for the occupation. Skilled workers are expected to find efficient and effective approaches and solutions to such problems.

Core problems comprise the essential characteristics of the professional task, in which decisions and choices must be made, and in which deliberate application of knowledge and skills, and the extent to which the appropriate set of action alternatives and the speed with which they are selected, determine the degree of expertise of an individual. Core problems refer to recurring and central occupational situations in which complex problems are solved and in which the specific characteristics of the situation and the social context are of central importance. This implies uncertainty and the need to balance different, sometimes contradictory considerations and interests against each other. A distinction must be made between the level of complexity and the situational dimension of core problems. Complexity refers to complexity of required activities, handling different kinds of information at the same time, recognising different dimensions of a problem, possible contradictions, differences in importance, the need for deliberate reasoning and choices as part of the job or task itself.

Core problems according to ACOA (1999) are:

- the central tasks and problems met on a regular basis by a practitioner, which are characteristic for the occupation,*
- and which have to be handled in one or more specific organisational and social communicative contexts and*
- in which it is expected that the practitioner will find a solution or an effective approach.*

When dealing with a core problem a practitioner has to deal with choices or dilemmas, which make a core problem complex. A core activity can be characterised by specific dilemmas and choices to be made in the work process. A recurrent tension field in core activities and core problems is the one between effectiveness, costs and quality. The resulting choices can vary with the situation. Another tension can exist between newer and older ways of doing things. It can be expected of a practitioner that he or she is able to make situationally adequate and responsible choices, and is able to contribute to a further development of the profession by resolving these tensions and further expanding the work activity (Engeström, 1994). This dimension of core problems relates to the developmental aspect of competence development.

Core problems could offer vocational education and training an integrated approach. The concept of core problems connects the determination of the central issues of the profession with the importance of making decisions and choices in relation to both occupational expertise and to educational practices and learning processes. Competence can develop through solving problems, meeting challenges, taking decisions, considering different action possibilities, and weighing up alternatives (Dreyfus and Dreyfus, 1986). Situated learning theory (Brown *et al*, 1989; Lave and Wenger, 1991), and with some reservations also activity theory (Engeström, 1994), suggest that learning in and through

the work process itself can be a very effective way to acquire this kind of work-related knowledge and key qualifications.

‘Exposure’ to core problems can contribute on two levels to the acquisition and development of broad occupational competence. On a first level, the learner acquires competence and expertise regarding central elements of the occupation. However, on a second level, the learner at the same time develops more general learning, problem solving and meta-cognitive competences in solving specific and concrete core problems, by learning to handle complexities, contradictions and uncertainties. Thus learning through core problems contributes to the development of transfer skills. Core problems can be distinguished in breadth, depth and complexity. They do not look the same for a beginner or an expert (Dreyfus and Dreyfus, 1986; Benner, 1984). Different levels of the learning process imply different levels of complexity for core problems as a didactic strategy.

A didactic approach, which focuses upon ‘core problems’, would highlight that it is a reflexive collaborative learning environment, making use of problem-based learning, such that:

- it provides authentic contexts for learning with a focus upon real (complex) problems
- it is collaborative and dynamic, enabling learners to develop shared understandings and a sense of belonging to a dynamic community of practice, which they are helping to change and shape
- it is participative and fosters active engagement as the learners determine for themselves the issues that need to be addressed when facing core problems. They can draw upon the knowledge and skills of others in facing these issues and also create their own learning agenda to fill any gaps in their knowledge and understanding
- it supports learning which is highly relevant, because the learning is focused upon issues which are perceived as pressing by practitioners
- it gives (possibly isolated) individuals the opportunity to think through problems as part of a team
- it supports the development of creative and flexible approaches to problems
- it supports the development of contextualised critical learning
- it supports reflection upon and review of the learning process as well as of the outcomes.

Reflection upon core problems can give insight into current practice and provide learners with ideas as to how they might tackle similar problems in future. Such reflection is critical in two respects. First, it is necessary if learners are to look beyond current practice and to help shape how such problems are tackled in future. Second, it can act as a stimulus to creativity and innovation, not least because the learners have learned the value of applying a reflective approach to the development of their own practice and expertise. Such an approach not only increases the likelihood of significant learning, it also provides a framework for subsequent continuing professional development in which it is likely that processes of new knowledge creation may be facilitated. In this sense it helps those that are learning within vocational education to feel they are moving towards assuming a full position within particular ‘communities of practice’ (Lave 1991; Lave and Wenger, 1991). Learners

are then perhaps more likely to exhibit a subsequent continuing commitment to explore, reflect upon and improve their professional practice (Schön, 1983; 1987).

A focus upon the core problems of practitioners (Onstenk, 1997a,b) is also an interesting way to raise the intellectual demands required within vocational education. It stimulates use of problem-based learning, acknowledging the contribution theoretical concepts make to assist individuals to understand what they are doing and why work practices are subject to change (Engeström, 1994). Core problems in vocational education can be used as a facilitator of both practical and theoretical learning (Onstenk, 1997a; Brown, 1999). ‘Theoretical learning’ is also developed through applying the concepts for analysing the problems that arise for professionals at work and through making explicit the assumptions underlying existing practice (Guile and Young, 1996). This conceptual knowledge can then be used to underpin reflection upon practice at a deeper level than just ‘theorising’ practice. Such conceptual knowledge can have both explanatory power and be applied to (changes in) practice. It therefore complements the development of practical learning, based upon reflection on practice.

The use of core problems within vocational education can therefore act as a springboard for the:

- exploration of and reflection upon professional practice
- development of skills, knowledge and understanding (of critical reflection) necessary to evaluate and review professional practice
- need to understand processes of change (as practice increasingly takes place in complex and dynamic contexts)
- ability to create new knowledge
- development of theoretical knowledge to underpin and complement reflection upon practice
- study of the interplay between theory and practice
- need to be able to transfer skills, knowledge and understanding from one context to another
- ability to handle complexity and inter-connectedness of issues (including through the formulation of mental models, schemas or networks)
- development of contextualised understandings
- translation of understanding into action, as appropriate
- further development of communication skills.

Point 8: the primary advantage of the use of core problems from this perspective would be in its support for an integrated approach to curriculum development. That is, it is an imaginative way of linking knowledge acquisition, problem solving and key qualifications development in work-related activities, which are relevant to the workplace and meaningful for the learner. Other related benefits include support for the development of broader systems thinking; the way it supports reflection and learning from practical experience, but links also to the need to engage with theoretical learning; and the emphasis it gives to the importance of being able to transfer skills, knowledge and understanding between contexts.

An additional advantage of such an integrated approach comes from the ‘size and nature’ of the learning task associated with a focus upon core problems. It is a mid-range task: avoiding the dangers of fragmented learning associated with too close a correspondence with over-detailed learning objectives or elements of competence. It aligns with the positive values associated with an approach that: is learner centred; supports self-steered and collaborative learning; helps with socialisation into a community of practice; and highlights the value of facilitating the autonomous redeployment of skills.

From a perspective of what can be learned from the Dutch experience then, the details of the implementation of the Dutch core problems approach, especially in relation to the development of qualification profiles, are not actually that important. However, they show one way of how the aimed for objectives could be reached. Rather it is the fact that this offers a coherent, integrated and theory-driven (pedagogically sound) approach to curriculum development that should be recognised as significant. The problems associated with qualification needs (and core skills) driving curriculum development, as in the UK, show that a different model (and metaphor) may be more appropriate. Rather than a model incorporating ‘key qualifications’ as a driver of VET renewal, it would be more useful to see a core problems approach, that incorporates key qualifications development, as a means to build a bridge between qualification needs analysis and curriculum development.

5. UK: self-directed learning at work and the importance for individual learning of the support of colleagues

The whole idea of self-directed learning at work is bound up with a number of paradoxes. Learning itself is both an intensely personal activity and a quintessentially social process. Self-directed learning depends upon individual commitment and the support and encouragement of others. Management sometimes aims to promote self-directed learning at work, while at the same time seeking to control and channel that learning. If learners are given genuine choices, they may opt to be passive learners rather than self-directed learners. It is therefore not easy to decide exactly where the costs and benefits of self-directed learning at work lay.

The benefits for management include not having to pay for possibly more expensive training and having workers with a commitment to their own learning and skill development. The costs for management are that they may feel they lose an element of control and that the workers may take longer to reach appropriate levels of skill and productivity. The balance of costs and benefits for workers depend partly upon the nature of their work, their experience and opportunities for subsequent career progression, and the extent of their commitment to this form of learning. How workers feel about self-directed learning at work are also subject to social influences. Costs and benefits of this form of learning are partly dependent upon the way particular types of social influence impact upon, and in turn are to some extent shaped by, the commitment individuals display to self-directed learning at work.

The relative under-development of the UK intermediate skills base has led Soskice (1993) to argue that, in a UK context, it makes sense for employers to recruit graduates. This is because they have generally more highly developed communication skills, a willingness to learn, and other ‘key qualifications’, but without any

appropriate specifically vocational training, and therefore this strategy makes more sense than to attempt to develop or secure individuals who had been through initial vocational training. The argument is that graduates can then be given specific training and/or develop their skills through on-the-job training or programmes of learning while working. This would fit with the long-standing belief in the value of development of skills through the exercise of responsibility, rather than through an organised preparation for responsibility, and is probably typical of the wider UK labour market. This could be a case of making a virtue of an unwillingness to train. Recent evidence suggests that some employers are reaching a more or less formal understanding with new recruits that the individual not only has to learn on the job, but also that how and what is learned will be largely up to the individual. This approach is, however, not just being adopted by small companies with limited resources (Vickerstaff, 1992), it is being used as an act of policy, clothed in ideas of empowerment and self-directed learning.

A study by Rajan et al (1997) highlights, in a survey of 950 small and medium-sized companies in central London, that growing companies were likely to be moving towards a performance-driven business culture, with an emphasis upon empowerment, teamwork, lifelong learning and individuals managing their own careers. Graduates were “reckoned to have intellectual and behavioural traits more in tune with the main elements of the new culture” (Rajan et al, 1997, p.13), and as a consequence “the growing companies in our sample have been recruiting a significant number of graduates in recent years ... in nearly three out of every five companies in our sample, more than 20 per cent of the workforce have graduate qualifications” (Rajan et al, 1997, p.13). The training methods most frequently used with new graduate recruits were learning by doing; coaching by line managers; interacting with suppliers and customers; and through the exercise of significant work responsibilities.

These dominant methods make use of mentoring and experiential learning, but in the main “graduates are thrown in at the deep end from the outset; with much of the training coming through learning by doingExcept in professions like accountancy, chartered surveying and law, the learning that occurs is neither accredited nor examined. Even with external courses, the tendency is to send graduates on ad hoc courses that are short and modular. They address the practical needs of the job rather than the qualifications aspirations of the individual. Learning through external courses is actively encouraged, so long as most of it is in the individual’s own time” (Rajan et al, 1997, p.24).

The central London labour market may be a special case in some respects, but it would appear that at the heart of the employment relationship is a very different conception of the rights and duties of employers and employees, not least in the area of learning and training. Employers are targeting the employment of inexperienced young people (for example, graduates without appropriate specialist knowledge), and relying upon their willingness and commitment to learning (and to working long hours, if necessary) to become effective in their jobs in a relatively short space of time. After a couple of years the employee has built up work-related experience so that he or she is able to apply for jobs with other firms, where previously they would have been considered the applicant insufficiently qualified.

It is almost as if there is a short-term bargain that the employer will give new entrants the opportunity to establish themselves in the particular occupational and/or work environment, but the extent to which you are successful will depend less upon how well trained you are for exercising your role and more upon well you can learn through working. In such circumstances the ability to engage in effective self-directed learning can make a difference between success and failure in the job. Now such a work environment could be perceived as permissive, challenging or exploitative, depending partly upon the extent to which self-directed learning is supported at critical points.

Companies then have to pay attention to the need to develop learner independence within programmes of work-based learning, including learning while working. One role for trainers is to ensure there are opportunities for reflection within such programmes so that individuals become more effective at acquiring methods of self-learning and techniques for individual development (Infelise, 1994).

Point 9: self-directed learning at work can have major benefits for employers, but employees may often require support for this form of learning to be effective

Recognition of personal worth by an influential sponsor or mentor and recognition by your community of peers can be powerful drivers to individual programmes of self-directed learning. Eraut et al (1998a) in their study on learning at work found many examples of organised but relatively informal learning support through reference to unofficial sponsors, mentors or 'designated experts', where the support was a function of a personal network of relationships. In such circumstances know who is a kind of knowledge which is becoming increasingly important (Lundvall and Johnson, 1994). This know who refers to a mix of different kinds of skills, in particular the social skills, allowing the access and use of knowledge possessed by someone else, often through a combination of professional and personal networks (Eraut et al, 1998b).

This type of personal encouragement for more expansive forms of self-directed learning at work could be undermined by pressures due to a perceived shortage of time and work intensification in some organisations. If informal support for learning is undermined by work intensification it may mean that organisations should pay greater attention to the need for self-directed learning to be formally supported (Eraut et al, 1998b). For example, where the amount of work to be done and the speed with which people are expected to work reinforce the routinisation and short-term nature of thinking in even complex work, this inevitably squeezes time for medium to long-term thinking and review of practice. Hence people need support to help them engage in patterns of thought conducive to learning, simply because of the amount of their time bound up with routinised behaviours. That is, they need to be given time and space to engage in critical thought, self-reflection and personal development. This should include opportunities for both collaborative and self-directed learning.

One of the key issues concerning 'facilitating self-directed learning' lies in how to implement it in practice. Within companies, if they move towards becoming learning organisations and facilitate self-directed learning, they are faced with a challenge of balancing management and freedom in learning: "how can we relax control over the learning process while at the same time channelling the benefits from it? (Jones and Hendry, 1994, p. 160)" (quoted in Darmon et al, 1998, p. 29). Fully self-directed

learning at work requires individuals not only to learn from work, but also to use their own initiative to find out what they need to know. Eraut et al (1998b) point out that “managers’ hopes that employees will be self-directed learners may not be realised if their attitude is perceived as permissive rather than positively supportive” (p. 39).

There are dangers then that the possible need for support is overlooked. Coffield (1998) quotes a finding from Ashton (1998) that in certain firms learning was thought to be “unproblematic, a natural process which occurs of its own accord and therefore did not require any special support or consideration” (p. 1). This did, however, sometimes mean that new entrants, especially graduates, received little support: there was a belief that they “learn by being ‘thrown in at the deep end’” (Ashton, 1998, p. 67).

Practical examples of a substantive commitment to learning throughout companies though remain hard to find. Eraut et al (1998b) investigated the extent of organised learning support in the development of knowledge and skills in employment of 120 people operating at professional, management, team leader or technician level in 12 organisations. The organised learning support included use of mentoring and coaching; rotations, visits and shadowing; as well as reference to ‘designated experts’, although very few of the positive examples of learning “resulted from organisation-wide strategies or initiatives. Most were relatively informal and initiated by middle managers, colleagues or the learners themselves” (Eraut et al, 1998b, p. 41). On the other hand, “negative examples where the absence of these kinds of organised support for learning on-the-job left people struggling were too numerous to count” (p. 41).

Those in need of support for learning at work, however, often turn to colleagues. Eraut et al (1998b) highlight the extent to which feedback from colleagues, and consultation and collaboration within working groups can form the basis for substantive learning, including through mutual consultation and support. Additionally, membership of task groups or committees could help people develop new skills, fresh perspectives or deepen their organisational or contextual understanding. Similarly some people at work pointed to the extent to which they could learn from others outside their department, from professional networks or from suppliers and customers. One “major reason for the prevalence of learning from other people was that this [tacit] knowledge was held by individuals rather than embedded in social activities. While some knowledge was firmly embedded in organisational activities, other knowledge *was* located with a small number of individuals” (Eraut et al, 1998b, p. 48, emphasis in the original).

Point 10: learning from others is also an important source of learning at work, but again it may be that employees often require support for this form of learning to be effective

Those interested in supporting the development of workers therefore need to be able to draw upon a variety of learning contexts, and need to be aware of the strengths and weaknesses associated with particular combinations of education, training and employment contexts. The quality of learning environments in companies can be particularly variable, and organisational cultures can either inhibit or promote effective learning. Similarly, patterns of work may be such that expertise can develop through a productive combination of working and learning. In order to make the best use of less favourable learning environments at work, it may be useful to use work-based projects,

learning contracts and action planning in order to enhance and enrich work-based learning and to make it applicable to contexts beyond the immediate work environment.

One clear trend within workplace learning is the attempt to draw working and learning closer together. In particular, there is an increasing awareness that learning and motivation are influenced if activities are embedded in contexts that make sense and are important for the learner (Raizen, 1994). Although there may also be times it is important for the learners that some distance is put between learning and work, so as to generate breadth of perspective. Indeed Eraut (1994) raises the question of whether successful workplace practice can necessarily be equated with a capacity to understand the ideas and concepts that inform such actions or to transfer them successfully to other contexts. For example, experienced practitioners may be seeking broader perspectives, theoretical understanding and so on. Engeström (1994) also points to the contribution theoretical concepts can make to assist individuals to understand what they are doing and why work practices are subject to change. So while meaning for the learner may often be increased by getting closer to working processes, in other cases greater distance between learning and working may be appropriate.

Point 11: much of the foregoing has argued for the value of learning while working, but it is also vital to acknowledge that there are other circumstances where it is important for the purposes of learning to put some distance between learning and working.

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