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# A critical review of skills research: a backdrop to attempts to develop a skills-based approach to guidance practice

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## 1. Introduction

The gap between the rhetoric about the world of work and the reality of careers guidance seems to be widening. Careers practitioners are caught between the increasing pressure to prepare clients for the new world of work and the strong pull back towards the old. The ADAPT project on 'the use of labour market information to enhance careers guidance' attempts to provide careers guidance for adults in a way that combines labour market information with a skills-based approach to guidance practice. The extent to which the project team is successful in this will partly depend upon the quality of our analysis about what is happening to skills supply, demand and utilisation. Hence this critical review of skills research seeks to provide a backdrop against which to judge our efforts to develop a skills-based approach to guidance practice.

This review will examine five key areas:

- the nature of the evidence for rising skill demands in employment
- the implications of gradually rising skill levels for skill development in education, training and employment
- the importance of being able to transfer skills, knowledge and understanding between contexts
- critical role for guidance in facilitating flexibility and transferability
- the value of broad approaches to education, training, skills development and labour market policy.

The starting point for this review is therefore an examination of the assumptions underpinning projections of skill demands for employment in the future.

## 2. The nature of the evidence for rising skill demands in employment

### 2.1 Competitive strategies, the changing workplace and skill demands

**Optimistic View**
Many visions of the future of work make explicit or implicit assumptions that the changing nature of the labour market, work and workplace organisation mean that demand for skills is both changing and increasing. The nature of these assumed changes is not spelt out, but it seems reasonable to hazard the guess that they are broadly in line with the projections contained in the European Commission's green paper on workplace organisation (European Commission, 1997), and with the vision of 'the high performance

workplace' that has evolved within OECD thinking (OECD, 1996; OECD/Government of Canada, 1997).

Within this paradigm, higher skills are only a means to an end. If they are to improve economic performance they have to change the way we work and alter the way organisations are structured and choose to compete. Management gurus, academics, and policy advisors across the developed world have insisted that higher levels of skill within the workforce are a basic building block and essential prerequisite for the adoption of a new model which moves economic activity in the developed world out of the old Fordist and Taylorist paradigms into a new high skills, high performance mode of working. Instead of mass producing a narrow range of highly standardised goods and services, firms will wish to customise their products to meet the demands of individual consumers. Moreover, competition will increasingly be on the basis of quality rather than price, with higher value added goods and services representing the only way in which the developed world can cope with competition from lower wage economies in the developing world (see, for example, Piore and Sable, 1984; Kern and Schuman, 1984; Drucker, 1990).

This new model has a number of implications for skills and work organisation. Hierarchy and control are out. Instead, flatter, non-hierarchical, often networked forms of organisation are to become the norm. Workers will need to work more autonomously, to monitor their own output and behaviour, adapt to change, solve problems, take the initiative, and think creatively in order to arrive at solutions that enable to organise to perform more effectively and better meet customer expectations. As a consequence, workers will not only have to be more highly skilled, they will also have to have the intellectual resources to engage in lifelong learning and in mastering new skills and behaviours in order to meet the ever-changing needs of more dynamic product and labour markets. Relations between managers and their staff will be based on high levels of trust, communication and involvement will be relatively intensive, and team working will be the norm.

An example of an attempt to put this vision into practice in the UK context and of the implications for vocational education and training (VET) provision are the Prospect Centre's report on Growing An Innovative Workforce (Hayes, 1992). In a similar vein, Guile and Fonda (1998) study the work organisation, performance management and skill usage in a group of leading edge UK organisations. They conclude that the new strategic imperative for management is to "develop new modes of behaviour amongst employees that emphasise collaboration, self management and accepting responsibility for outcomes; create an organisational environment that enables employees to take initiative, to co-operate and to learn" (Guile and Fonda, 1998, p. 9).

UK official thinking on education, training and employment assumes that global economic pressures are impelling our economy and its constituent organisations in the direction of the types of product systems, product market and competitive strategies, and forms of work organisation and job design outlined above. The government's main role

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in speeding the transition towards the adoption of this new paradigm is to put in place reforms within the education and training system that will increase the supply of skills.

**Pessimistic View**
This optimistic vision is not, however, universally shared, and many of those who specialise in the study of product market and competitive strategies, and industrial relations and people management systems, tend to paint a less optimistic picture than either policy makers or some who specialise in vocational education and training. For example, (1995) suggests that the model of a high skills/high value added strategy allied to a supportive VET system, that can deliver a highly educated and trained national workforce (as in Germany), is simply one of a number of viable models available to European firms and nation states. There are other, perhaps equally attractive routes to competitive advantage from which firms can choose. This is an unwelcome message for policy makers, but one that reflects the reality that research into product market strategy reveals. Far from a single, simple, universalistic movement towards higher value added and higher quality goods and services throughout the developed world, different companies, sectors and even countries are following a range of divergent trajectories. These alternatives include seeking protected markets, growth through take-over, seeking monopoly power, and cost-cutting and new forms of Fordism.

Part of the cause of this misunderstanding of the trajectory of workplace change is a tendency on the part of academics, gurus and policy-makers to generalise from the particular, usually work organisation and management styles found in leading edge manufacturing plants and/or the IT sector (software houses, Silicon Valley). They assume that such management styles and structures will be applicable in very different settings and within the context of competitive and product market strategies that are still wedded to Fordism. Far from being the inevitable destiny of all organisations, the high skill, high participation, high performance workplace model may actually only be relevant within a limited sub-set of organisations, particularly when set within the wider context of the Anglo-Saxon variant of capitalism.

The introduction of new forms of work organisation following the implementation of computer-based technology does not necessarily follow a single path. For example, Gallie (1994) found that while such implementation was "linked to greater task discretion for men, this was not the case for women" (p 23). This reflects how work intensification and increased monitoring may reduce responsibility at work. On the other hand, partly as a consequence of more intensive use of technology and changing patterns of work organisation in the UK banking sector, employers' recruitment requirements have been stressing behavioural characteristics and the ability to be adaptable and flexible in response to changing work practices, rather than stressing specific banking skills (Courtney, 1997).

It can be argued that the research findings adduced above are incomplete and offer only a snapshot view of the dynamics of managerial adaptation and strategic decision making in the face of global economic pressures. They may therefore under-estimate the halting,

but none the less real progress towards the high performance model to which policy makers aspire. This point has some merit. The picture that emerges from the research is at best partial and it is extremely hard to disentangle the rhetoric with which managements clothe their competitive aspirations from the reality of what they actually choose to do. Everyone, or nearly everyone, now talks the language of quality (see Keep and Mayhew, 1998, for a more detailed discussion of this point). However, there are available a number of other proxy measures for employers' skill requirements and workplace organisation that can tell us something about the models of competitive advantage that are being utilised by British organisations, such as employers' demand for and use of core/key skills, and this will be discussed in detail below. For the moment, it will suffice to say that research in this area tends to confirm that the high performance workplace looks set to remain the experience of the minority of the UK workforce for the foreseeable future.

## 2.2     Core (key) skills

There may thus be a visible quantitative gap and an at least equally important, but hidden, qualitative gap between the UK workforce's stock of skills and that held by our competitors. This gap is thrown into stark relief by work by Green (A, 1998) which examines the concept of core or key skills within the English context. He points to the historic absence of a strong element of general education within English vocational education and training and argues that "alone amongst the major European nations in the 19th century, England developed a technical and vocational education that had no inherent connection with general education and schooling....it involved no general education and often little vocational theory" (1998, pp. 24-25). By contrast with, for example, France, English VET lacked any entitlement to a common foundation of general education and culture, or any strong notion that technical mastery could be viewed as an extension of applied science and therefore required abstract knowledge and an understanding of theory. The gap left by this absence of general educational element within English VET came, eventually, to be filled by the much narrower surrogate of core skills. Green analyses both the content and process of present day English vocational education and training for the young with what is on offer in Germany, France and Japan. He concludes that the English concentration on a restricted range of core or key skills (such as communication, IT and the use of numbers) provides a much narrower education to a lower standard than is generally found overseas. In particular:

> "the core skills paradigm represents an impoverished form of general education which is neither adequately delivering the minimum basic skills normally associated with an effective general education, such as verbal articulacy, logical skills and mathematical literacy, nor even attempting to impart a foundation of scientific and humanistic culture adequate to the demands of active citizenship in modern societies"
> (Green, A., 1998, p. 40).

Green adduces a number of disadvantages that flow from this situation, including the barrier it represent to unifying academic and vocational courses for the young within any single framework, and the likelihood that the core skills model of VET is less able to produce broadly skilled, polyvalent workers. In addition, it might be noted that such a narrow, thin conception of foundation level VET provides a singularly shallow foundation upon which to build a pattern of lifelong learning.

This singular model of VET has been able to survive in this country for a long time, and indeed has in recent years become enshrined - through policies on competence based vocational qualifications and the teaching of core/key skills - within the fabric of UK VET strategies. This may reflect not simply the persistence of our particular national cultural and political heritage, with its absence of any strong notion of political and cultural rights to citizenship, but also certain realities about the way in which many British employers design jobs and order the deployment of skills in their workplaces. It is to this issue that we now turn.

### 2.3    Employers' demand for key skills and what it reveals about patterns of work organisation

As outlined above, there is an absence of a strong tradition of general education within vocational preparation and instead the use of an inadequate proxy in the shape of key skills. This in itself places barriers in the way of the development of a highly skilled national workforce. However, even within this limited frame of reference, research probing British employers need for key skills suggests that they may only be looking for even narrower capabilities and at a low level. Their responses also, and more worryingly, appear to reflect a heavy reliance on methods of work organisation and job design which are deeply Taylorist and suggest the use of Fordist or Neo-Fordist production strategies. The results reported below come from a study (Dench, Perryman and Giles, 1998) commissioned by the DfEE to investigate employers' understanding of and need for key skills (communication, application of number, IT, working with others, improving own learning and performance, and problem solving). Employers were asked about their need for the different key/core skills such as communication skills, use of number, IT skills, team-working, and problem solving, and about the level of skill required for each of these on a four level scale.

What was revealed was a general demand for the core/key skills, though in the case of IT, despite all the current rhetoric about its centrality to modern business and the supposedly universal need for an IT-literate workforce, British employers reported IT as the key/core skill for which they had the least need. One quarter of employers felt that it was either 'not very important' or 'not at all important' for all employees (1998, p. 17).

However, demand for the core/key skills was strong only if the skills were specified at the lowest levels. Higher levels of skills across the core/key skills were not required for the bulk of the workforce in the organisations surveyed and interviewed. The need for higher level skills was generally restricted to professional, managerial and higher level technical

staff. This structure of demand reflected systems of work organisation and job design that had removed or heavily circumscribed employee discretion.

"The generally low level of autonomy allowed to employees especially in non-managerial roles and in less skilled jobs was a theme emerging from many of our in-depth interviews. Although employers are looking for people who can take responsibility and show independence, in many jobs there are limits to which these can be developed. In many organisations, efficient delivery is seen in terms of employees working in fairly prescribed ways"
(1998, p. 58).

The findings of this study are mirrored by other work. Robinson (1997) reports on a Basic Skills Agency survey which looked at the literacy and numeracy standards expected from employees in the six lowest occupational groups in the UK labour market (which in Spring 1997 accounted for 63 per cent of total UK employment). The levels of skills being demanded were extremely limited. Robinson concludes that, "although a significant proportion of the adult population have modest levels of literacy and numeracy, for a large number of jobs at the middle and lower end of the labour market, this is all that appears to be required by employers" (1997, p. 25).

As Dench, Perryman and Giles suggest, "there does seem to be some tension....with the rhetoric around the nature of job change and employers' actual needs" (1998, p. 61). Certainly their findings are in stark contrast with the world of leading edge work practices and job design depicted by Guile and Fonda. Once one moves away from the small sample of leading edge employers surveyed by Guile and Fonda, there seem to be few signs that "instead of managers who control the flow of work by managing people who are expected to carry out tasks, organisations increasingly need people who manage, or contribute to managing, a growing range of processes" (Guile and Fonda, 1998, p. 1). Indeed, far from desiring a workforce of self-reliant, self-monitoring, polyvalent, self-developers, Dench, Perryman and Giles conclude that "in reality most employers simply want people to get on with their job, and not to challenge things" (1998, p. 61). A traditional reliance on managers to undertake the thinking, planning, design and decision making elements of work, while the non-managerial workforce gets on with following procedures and taking orders, would appear to still be the norm. Instead of flat, team-working organisations utilising the knowledge and skills of the entire workforce as a source of competitive advantage, the general trend continues to be to rely upon the brainpower of a relatively small elite. This elite devise systems, procedures and ways of working that routinise work and minimise opportunities for thought and discretion, and thereby consign the rest of the non-managerial workforce to the role of willing hands or drones in a non-participatory hierarchy.

## 2.4    Skills supply and skills mismatches

One important issue about the identification of skills shortages by employers relates to whether there are absolute skills shortages or whether these relate more to the

(un)willingness of workers with the requisite skills to work for particular employers (in particular locations), given the particular work, working conditions and pay on offer. For example, Haughton (1993) argues that apparent skills shortages may relate more to skills mismatches: "that is, that there may be sufficient numbers of workers with 'shortage' skills being produced, but they move into jobs which do not use those skills. The reasons for this may lie beyond the spheres of education and training. There is evidence that some [people] are not prepared to accept the terms and conditions under which they would have to work when using their training and skills" (Edwards et al, 1998, p. 49). Thus there are large numbers of qualified teachers and nurses not working in those areas; financial institutions in the City of London often recruit engineering and other technological graduates; and low pay sectors like clothing manufacturing often find qualified staff switching over to become buyers for large retailers (Brown, 1994). There are also examples of mature graduates with 'shortage skills', who are nevertheless unable to get employment utilising those skills (Hogarth, 1997).

**Labour market segmentation**
On the other hand, elsewhere there may be too few possibilities for occupational mobility as where low skilled, low paid workers with few prospects of progression feel trapped in their current work (Forrester, James et al, 1995). Gallie (1994) also highlighted the growing polarisation in skill experiences between lower manual workers and other employees. Green and Montgomery (1998) investigated young workers' experience of their job as an important stage in the transition from school to work, and found that more than one in six young people acquired only firm-specific, rather than transferable skills, in their first substantial job (usually lasting just over two years). [The findings were drawn from a survey of 21 year-olds in early 1992, using a randomly selected sample of participants drawn from the 1970 Birth Cohort Survey.]

These young workers had left education with few qualifications and were then failing to acquire in their first jobs the skills necessary for mobility in the labour market. Elias and McKnight (1998) take stock of more recent charges in the youth labour market, and they highlight how "the main 'entry occupations' for young people without higher education qualifications appear to have been scaled down dramatically. A consequence of this is that the work-related training typically provided by employers in such jobs will also have disappeared, possibly leaving those who do not gain access to higher education more vulnerable than at any time in the last decade" (p. 22). Young people leaving education with few qualifications are now most likely to be recruited in areas of low wage employment, with little substantive work-related training. The polarisation in the labour market for young people between work with and without access to training and prospects of progression is intensifying.

**2.5     More gradual upskilling**

From the above it is clear that we need to be very careful about what assumptions we make about future skill demands. In particular, it would be helpful to ground predictions upon recent evidence about changing skill needs. Probably the most concise and clearest

overview of the changing state of skill needs in the UK is provided in Green et al (1997). They draw on data generated by the recent 'skills survey' and compare this with data generated by earlier surveys to provide a time series on skill demand and usage. At present, this is the only source of such trend data. Among their major conclusions are that:

- the level of qualifications required for recruitment to a job has risen since 1986;
- skills increases have been more marked for females than males (this is consistent with the long-term narrowing of the male/female wage gap);
- the proportion of those deemed 'over-educated' for their current employment has not changed dramatically; that there has been a relatively sharp decrease in the number of jobs that only require short periods of training;
- the usage of computers in the workplace has increased;
- the groups that are losing out in skills acquisition include those in part-time jobs, the self employed, those aged over 50, and those in low status occupations.

It should also be borne in mind that there might be a difference between the skills employers might like employees to have and those that actually receive a premium in the labour market. Francis Green (1998) investigated, by means of a methodology based on job analysis, the relationship between the use of generic skills at work and pay levels. The analysis based on 1997 Skills Survey data showed that computer skills and advanced communication skills were particularly highly valued in the current British labour market. So while there is limited demand for significant upskilling in many jobs, Green et al (forthcoming) do provide evidence of a more gradual upskilling of those in employment between 1992 and 1997. They highlight an increased usage of problem-solving skills, communication and social skills, and computing skills, although a substantial minority of those in work have not benefited from skill rises (Green, F., 1998; Green, Ashton et al, forthcoming). In summary then, a small proportion of jobs have become very much more demanding, many jobs have shown a gradual increase in skills required, while a substantial minority of people in (and out) of the labour market have had minimal skill rises.

## 2.6    Inadequate basic skills: adult literacy and numeracy

The attention so far given to showing that for the foreseeable future employers will continue to demand a range of fairly low level skills may be thought depressing. However, on the other hand it does mean that those with the fewest skills could still find it useful in employment terms as well as in other ways to improve their basic skills. This is particularly important given that low levels of adult literacy and numeracy are associated with marginalisation within the labour market, more unstable relationships, low income, poorer health and more limited inclusion in public and political life than those with without basic skills difficulties (Bynner and Parsons, 1997, pp. 77-84). As Bynner and Parsons comment, "the striking feature.....is that the data points so consistently to an accumulation of disadvantage among people with poor basic skills" (1997, p. 83). In terms of the factors that influence the development or otherwise of basic skills, the research indicates that many of the problems appear to start early in life (pre-

school) and then to resonate with other factors to create vicious cycles of under-achievement (Parsons and Bynner, 1998). The researchers suggest a range of policy interventions that could help address these problems and create virtuous cycles of skill acquisition.

## 2.7    Employability

The policy interventions at present have at their core the goal to increase the employability of the socially excluded and those perceived to be at risk of social exclusion. What exactly though is 'employability'?. A literature review of 'employability' has recently been completed by Hillage and Pollard (1998), and they highlight a couple of issues that are relevant to this review. First, "the concept of 'employability' is central to the current strategic direction of the Department for Education and Employment (DfEE). However, the term is used in a variety of contexts with a range of meanings" (p. ix). Hillage and Pollard were therefore commissioned to review relevant literature with a view to developing a definition and framework to 'operationalise' the concept of employability. In simple terms, employability was seen as "about being capable of getting and keeping fulfilling work" (p. x), with a more comprehensive definition being:

> "employability is the capability to move self-sufficiently within the labour market to realise potential through sustainable employment. For the individual, employability depends on the knowledge, skills and attitudes they possess, the way they use those assets and present them to employers and the context (e.g. personal circumstances and labour market environment) within which they work" (Hillage and Pollard, 1998, p. xi).

Second, while Hillage and Pollard (1998) see employability as a dynamic concept depending on the inter-relationship between an individual and the labour market, government policy has been framed around individuals and their entry into employment. An example of this type of policy is the pre-vocational pilots intended to help people with multiple disadvantages in the labour market, such as experience of long-term unemployment, health problems and/or poor basic skills. The pilots were designed to help such people access training and support, and then move through mainstream training towards employment, even if in practice the benefits are more likely to relate to increased self-confidence than direct job entry (Atkinson and Kersley, 1998). These types of programmes target individuals, while less attention has been focused upon employers and the demand for labour (labour market contextual factors) or mobility within the labour market. Similarly, government policy emphasises responsibility for individuals to develop their 'employability assets', but under-emphasises support for effective deployment of these assets "particularly for adults (e.g. lack of provision of a careers education and guidance service for adults)" (Hillage and Pollard, 1998, p. xiv).

# 3. The implications of gradually rising skill levels for skill development in education, training and employment

## 3.1 Learning to learn

The pace of change in many aspects of work and the work environment will put a premium upon the ability to learn. Learning to learn is seen as fundamental if workers are to be able to adjust to changes in organisational structures, technological innovation and work processes. One key attribute, associated with initial skills development, which will need to be developed is the ability 'to pick up the threads' in future when skills need updating (Brown et al, 1991). That is, young people need to be confident about their ability to learn in future.

There is almost universal recognition then of the value of learners learning how to learn, and this can give a basis for continuing learning in the workplace. As a consequence getting learners to learn how to learn is often given as an aim in programmes of initial vocational education and training. However, this does not ensure the issue will be addressed in practice (Evans et al, 1987). This is because of the historic problem associated with many education and training programmes of the tendency to focus upon those tasks that are easier to teach and/or assess (Sockett, 1980). Conversely, the development of more general skills, including learning to learn, which underpin much activity in education, training and employment, can be seen as the responsibility of everyone, and hence in practice of no-one in particular.

'Learning to learn' can be linked to the inculcation of habits such as systematic observation, analysis and a questioning attitude (Annett and Sparrow, 1985). This is important especially if learners are to take advantage of opportunities for learning outside formal education and training settings. This links to the need not only to embed the development of learning strategies within an occupational context (Soden, 1993), but that the application of learning strategies should also be contextualised. People need to learn how to apply effective learning strategies in a variety of contexts, particularly if they are likely at some stage to be in contexts where there are considerable demands to learn while working. This line of argument is reinforced by the study of Collins et al (1989) of cognitive apprenticeship that emphasised that learners need to develop "knowledge about how to learn, including general strategies for exploring a new domain and local ones for reconfiguring knowledge" (Hennessy, 1993, p. 20).

The above argument has been focused upon the value of paying attention to helping individuals learn how to learn within initial VET. However, many adults may lack confidence in their ability to learn, and the need to address this was one of the reasons behind the growth of employee development schemes (EDS) in some companies. These schemes typically involve employers making provision, and offering financial support, for employees to undertake learning (usually in their own time). Parsons et al (1998), in a survey of 64 firms running EDS and 110 employees, found that main benefits reported by

users were indeed a greater confidence in their ability to learn (cited by 64%) and a greater willingness to learn (cited by 41%).

## 3.2    Reflection

There is a need to create and sustain a culture within organisations which values learning and development, and reflection can be an important process to help achieve this (Brown and Evans, 1994).  Any individuals with an ability to transfer what they have learned between contexts will need to be reflective both of their own practice and their own learning.  Attempts should be made within work-based learning to ensure learners will be able to reflect upon their working practices: ideally so they can set up spirals where what is learned from reflection on practice can inform action, thereby leading to further learning and so on (Winter, 1991).  While the need for any learning programme to seek to develop a reflexiveness among learners should be readily apparent, an emphasis on reflection can also act to draw attention away from concerns with the acquisition of a fixed body of knowledge or a set of immutable competencies: practice itself should always be seen as developing.

Hence it will be necessary for individuals to be able to continue to build and refine their own base of knowledge and understanding through reflection on practice, building a spiral of action and appreciation, leading to reflection-in-action (Schön, 1983).  Critical reflection on experience then is seen as a motor for learning at work (Kolb, 1984, Schön, 1987).  The staged model of skill acquisition of Dreyfus and Dreyfus (1980) identifies the key to successful progression through to the expert stage as the processes of review and critical reflection.  Critical reflection then is widely recognised as pivotal (Hammond and Collins, 1991; Tomlinson and Kilner, 1991) to the development of expertise.

## 3.3    Development of thinking skills

Just as policy-makers have been acknowledging the importance of developing in learners learning to learn skills, so increasing interest has been expressed about thinking and problem solving skills development.  Blagg et al (1993) conclude from a fairly comprehensive review of the evidence that enhancing thinking skills can have positive transfer effects.  One highly influential text (Collins et al, 1989) has put forward the notion of a cognitive apprenticeship, where explicit attention is given to the development of cognitive skills.  Emphasis is given to modelling approaches to thinking when tackling problems within a domain, through demonstrations, coupled with coaching, offering hints and regular feedback when learners tackle problems themselves.

Collins et al (1989) also highlight the importance of learners making their thinking processes explicit, including through the use of articulation, whereby learners articulate the knowledge, reasoning or problem solving processes they are using.  The sharing of ideas about thinking processes can be a valuable means of learning for learner and coach (Brown et al, 1994).  However, such sharing can also be valuable in group settings, where

learners can access (develop, organise and become aware of) their own and others' knowledge and approaches to problems (Prawat, 1989).

Soden (1993) argues that there is particular value in teaching and making explicit the thinking that occurs in solving problems in occupational contexts, as "good problem solvers have internal representations of fundamental principles relevant to their occupational area and these representations are connected to each other and to broader relevant knowledge in ways which facilitate application to problems" (Soden, 1993, p. 12). It is therefore essential for those supporting learners to create a framework that can help learners organise their learning in the domain in which they are working. Learners need to develop schemas to organise what they are learning, particularly if training is exploration-based, not least in order to be able to transfer what they have learned (Hesketh et al, 1989). Teaching should then "have a dual focus - the development of the thinking skills as well as the achievement of the targeted competence" (Soden, 1993, p. 3).

Learners, therefore, need not just to learn efficient mental processes, but also need to learn when and how to use them in practice. There is, therefore, an emerging consensus on the value of teaching thinking skills to aid problem solving performance in particular contexts. This teaching though should be embedded: that is, directly linked to solving problems that occur in a particular occupational context. Learners should also be encouraged to articulate their thinking processes and be given opportunities to practise using and reflecting upon the relational networks they are developing.

## 3.4    Teamwork

Changing skill mixes and the development of multi-skilled or interdisciplinary teams may require skilled workers to work more intensively with others (BT, 1993). Hence being able to operate as a member of a team is becoming increasingly important at work, and the support of others at work can frequently be decisive in the learning of individuals. Infelise (1994) highlights how large companies in France, Germany, Britain and Italy make use of group-based project work, action learning and learning while working in organised work-based learning programmes. There are increasing examples of where, because learners were working in teams at the workplace, these teams became a focus of support for learning (Infelise, 1994). Poell (1998) draws attention to how group work-related learning projects can be organised around a "work-related theme or problem, with a specific intention to learn and to improve work at the same time" (p. 19). Knasel and Meed (1994) suggest the value of supportive teams in their support and encouragement of learners relates to the ways:

- "they provide opportunities for people to share their skills and experience;
- they provide a forum for exchanging information and generating ideas;
- within a supportive team people can more readily give each other advice, guidance and feedback in an unthreatening manner;

- above all a team - with its defined membership, shared sense of purpose, consciousness of being a group and interdependence - can offer the kind of enjoyable, rewarding environment in which learning is more likely to happen" (p. 45).

### 3.5    Integration of knowledge development with work-related activities

The previous focus upon the need to develop process skills should in no way be interpreted as downplaying the importance of also developing a substantive body of work-related knowledge.  Rather what is now required are more imaginative ways of **integrating** knowledge acquisition, problem-solving and key skills development in work-related activities, which are relevant to the workplace and meaningful for the learner.  Hayes (1992) argues strongly that extended 'company' simulations can deliver such integration and that such simulations have the potential for helping learners engage in a broader 'systems thinking'.  In this respect, there would appear to be some strong alignments with the development of problem-based learning (Boud and Feletti, 1991; Oates, 1998): it is learner-centred with the integration of subjects and skills into thematic blocks, coupled with use of learning oriented work in small groups and self-directed learning.  Such methods would also be compatible with assessment processes that tested knowledge generated from an analysis of practice (Atkins et al, 1993).

This approach would accord with the other aims espoused in the immediately preceding sub-sections of this review: the need for learners to develop thinking skills, critical reflection, the ability to transfer and so on could be regarded as a basis for high level performance in the future as well as at present.  Such an approach, however, needs to be aligned with practical and active work-based learning, concerned with current and future performance in an holistic approach to the development of capability and expertise.  This in turn will require a more integrated and imaginative concern for learning and assessment, drawing on, for example, group project work and problem-based learning and assessment.  For as Harkin (1997) makes clear "skills such as effective communication or problem solving can only be developed in a lengthy process of practice, in demanding and realistic situations" (p. 99).

Eraut et al (1998) 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, 1998, p. 48, emphasis in the original).

Skills in facilitating the processes of learning within work organisations are becoming more significant. Both Brown et al (1994) and Ashton (1998) give examples of organisational cultures which support such processes, while in other cases organisational change was frustrated by the lack of knowledge of managers and supervisors about how to support the learning process. Ashton (1998) gives evidence of one company trying to move towards becoming a 'learning organisation' and finding this was a problematic process: "employees faced many barriers in their efforts to learn, not because the company deliberately erected them, indeed the company was unaware of them, but because the process of learning is contentious, with the parties involved having different agendas and in many instances not being aware of how to facilitate the process" (p. 67).

## 3.6 Work-based learning

While some small companies are reluctant to get involved in training and development (Keep and Mayhew, 1996), other relatively small or medium-sized enterprises are highly innovative, and particularly if linked into 'multi-firm networking processes' (Rothwell, 1994), they can offer very rich learning environments. In such circumstances, work itself (and the survival of the company) is concerned "with extending levels of organisational adaptability and flexibility and with developing new areas of knowledge and technological competence" (Rhodes and Wield, 1994, p. 168). 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).

The problem is that as Keep and Mayhew (1996) argue in many areas of the UK employers have a low demand for skills, and as a result opportunities for the development of transferability may also be limited. So attention needs to be focused not only upon the possibilities for learning associated with particular activities or jobs, but also upon the extent to which the organisation itself demonstrates a commitment to learning through its culture (Brown and Evans, 1994; Pettigrew et al, 1990).

## 3.7 Employers' demand for graduates level skills

The development of a 'mass' HE system has had three significant consequences. First, graduates are increasingly likely to start in a wide range of jobs, and are often prepared to move between jobs to build up experience in the first few years after graduation (Purcell et al, 1998). By this means, they move progressively towards a job that is broadly commensurate with their qualifications. Second, it does mean that employers can recruit academically well-qualified people to fill positions in a way that adds value for the employer. For example, Mason (1996) found that graduates recruited to relatively junior positions in banks were more likely to see beyond confines of the immediate task and take opportunities, for instance, for cross-selling of products to customers. Third, Wilson

(1995) argues that there is some evidence that when more highly qualified people are recruited the nature of the job to which they are recruited itself changes.

Steedman (1998) argues that employers are willing to pay graduates more because "a highly-educated employee might be expected to learn faster than one with only limited further study experience.  In the short and medium term, the higher graduate premium would be more than offset by a saving in learning costs.  So I would argue that employers may be interpreting qualifications as signals about learning ability rather than simply about knowledge acquired" (p. 27).  This follows the Soskice (1993) line that, in a UK context, it makes more sense for employers to recruit graduates, with generally more highly developed communication skills, willingness to learn and other 'key qualifications', but without any appropriate specifically vocational training, than to attempt to develop or secure individuals who had been through initial vocational training. [This was prior to the development of the State-financed Modern Apprenticeship system]. 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.

These arguments may go some way in explaining the patterns of usage of graduate skills by employers, whereby Felstead et al (forthcoming, 1999) found that three out of ten graduates were in jobs for which a degree was not an entry requirement.  However, following Purcell et al (1998) and Wilson (1995), many of these apparently over-qualified graduates were likely to end up in jobs broadly commensurate with their abilities, through changing jobs or through the jobs themselves changing.  The market for graduates, including those from vocational areas, has been at least partly transformed by significant changes to graduate supply.

Graduates were, in some areas, also increasingly being employed in small and medium-sized companies, companies that traditionally had been most sceptical about the value of employing graduates.  The reasons for this were revealing in that some companies felt that the recruitment of graduates meant that they often had to do little formal training, as the graduate recruits were expected to learn through the exercise of significant work responsibilities: "graduates are thrown in at the deep end from the outset; with much of the training coming through learning by doing" (Rajan et al, 1997, p. 24).

For example, it is interesting to note the considerable expectations small growing companies in central London had of new employees being able to learn while working from the outset.  Rajan et al (1997) point out, 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).  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 graduates were employed precisely because they were reckoned to have the intellectual and behavioural traits most able to cope with learning by doing; coaching by line managers; and learning from interacting with suppliers and customers; and from carrying out significant work responsibilities. Similarly, Brown and Attwell (1998), in a discussion of the interactions between changing patterns of training and changing business processes, make the point that there seems as though there are two essential developmental tasks young entrants have to be able to do if they are to function effectively in dynamic companies operating in knowledge-intensive environments. First, they need to be able to transfer what they have learned in other contexts to their new working environment. Second they need to engage in knowledge development in and on behalf of their companies, which is again dependent upon their abilities to transfer and develop knowledge as they move between contexts.

## 4. The importance of being able to transfer skills, knowledge and understanding between contexts

### 4.1 The limited significance of the development of learning organisations and portfolio careers

In the rhetoric of the high skills societies, analysed in Section 2.1, emphasis upon the need to develop learning organisations is often coupled with radical changes to ideas as to how individual careers should be represented. For example, Bridges (1995), Handy (1989) and Jackson et al. (1996) all make the case that seismic shifts have occurred in the new 'careers' landscape and individuals will have 'portfolio' careers, where they need to participate in appropriate networks and develop their own career management skills. I am deeply sceptical about how significant such trends are: not because of any doubt that 'classic' organisational career opportunities in large organisations have been substantially scaled back nor that the implications for the individuals affected were often traumatic. Rather it is just that there is a need to challenge the implicit assumption that career choice, development and management was in the past a technically rational process, which has now been destabilised by radical changes to the labour market and patterns of work organisation. Such rational career development only ever applied to the minority of the population with stable 'careers'.

Similarly, in knowledge-intensive industries workers are perceived to need to be able to adapt to new skills and processes and to update their knowledge on a regular basis. Skilled work in such contexts increasingly requires the ability to deal with unpredictable occurrences. New forms of work organisation too place a priority on communication skills and on the ability to work in teams. The new information and communication technology industries in particular are demanding higher levels of skills and qualifications. Furthermore the demand for the continuous updating of skills and knowledge for lifelong learning itself imposes new qualification requirements relating to the necessity of 'learning how to learn'. However, the number of companies to whom

this applies and who are making moves to become 'learning organisations' remains comparatively small in the UK.

In practice, for the foreseeable future 'portfolio careers' and 'learning organisations' will both remain on the margins of the lived experience of most people in the labour market. Indeed the immediate and medium-term outlook is for an increasing bifurcation in the skills required (and rewards offered) in the labour market : see, for example, Lindley and Wilson (1998) for a medium-term labour market assessment for the U.K. This means that we need to be aware both of the 'gap' between the rhetoric and reality of 'learning organisations', and further recognise that undue emphasis upon developments within learning organisations could misdirect attention away from a slower, less glamorous but possibly more profound change caused by the increasing bifurcation of opportunities and rewards in the labour market.

On the other hand, for many people in the labour market, whether in or out of work at the moment, it makes good sense for them to acknowledge the importance of being able to transfer skills, knowledge and understanding between contexts (and employment settings). The difference between the rhetoricians and me is therefore quite subtle. We both argue for the need for individuals to pay attention to and develop the ability to apply their knowledge and experience across contexts, it is just that I do not need a vision of a radically altered careers landscape in order to make the case. It just represents a useful tactic for individuals to apply to their (working) lives, whatever the state of the labour market.

## 4.2   Designing effective learning programmes for the development of transferability

**The prime focus of the inter-relationship between education, training and employment needs to be upon learning**
The importance of being able to transfer skills, knowledge and understanding between contexts should therefore be at the heart of learning programmes in VET. Brown and Attwell (1998) argue that the key message for those charged with designing effective learning programmes for the development of transferability is that the prime focus of the inter-relationship between education, training and employment needs to be upon learning. It will be important to ensure learners are given opportunities to improve learning to learn skills and that a sufficient range and quality of learning opportunities are available for individuals to develop their key skills. In particular, if the intention of a learning programme is to help learners develop the ability to transfer skills, knowledge and understanding, then learning contexts are required which draw attention to the significance of skill transfer. Processes of review and critical reflection are pivotal for this.

Organised reflection on what has been learned and what needs to be learned in future can act as a bridge between working and learning, and as a bridge between the skills that are currently required and those that may be needed in future. Organised reflection can also be used to review what has been learned in the past, and processes involving the

accreditation of prior (experiential) learning can be useful in this respect (Davies, 1999). Such reflective processes can also link into the development of more elaborated thinking processes that underpin the ability to transfer knowledge, skills and understanding. More generally, learners should be encouraged to make their thinking approaches explicit, through discussion with tutors, coaches or peers, of their approach to problems in their occupational area and of the networks or schemas they are developing to understand concepts and relationships in their area as a whole. By the same token it could be useful for tutors to teach thinking skills and strategies as an aid to problem solving in occupational contexts.

The development of learner independence too is an important goal as learners need to take increasing responsibility for their own continuing learning possibly across a range of occupational settings. Similarly being able to learn and work in teams has become more significant in a variety of contexts and learning programmes should provide opportunities to develop these skills. It might be thought that the attention upon the process skills underpinning the ability to be effective in different contexts might result in the development of a substantive occupational knowledge base being downplayed. However, this is not the case. Rather the development of process skills ideally should be embedded in appropriate occupational contexts. Further, the development of a substantive knowledge base is important because it is central to the development of domain-specific expertise and because it forms a platform for continuing learning in the future. Indeed it should be remembered that the ability to master a substantive knowledge base is itself a process skill, which can be valuable in a variety of learning and working contexts.

The design of effective learning programmes to develop transferability needs to be able to draw upon a variety of learning contexts, and designers 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. There may be limits to this though as not all companies and patterns of work organisation enable opportunities for substantive learning and this is an important issue to be borne in mind.

**Importance of changing contexts in developing transferability**
If transfer is regarded as a learning process, then the developmental nature of the process comes to the fore in questions like: how much more learning is required for individuals (or groups) to cope with significant changes in context and can facilitation support the learning process? Changing contexts and arrangements of learning between education, training and employment, especially when the work-based learning is formally accredited, can be a powerful means to develop transferable key skills, the ability to transfer skills,

knowledge and understanding, and a sense of significant skill ownership. Within VET programmes therefore there has been increasing attention paid towards developing orientations towards flexibility, change and the future, rather than simply training for existing jobs. This has led to the development of the concept of lifelong learning and placed increasing focus on the relationship between school to work transition and continuing training as underpinning the development of skilled work for flexibility, innovation and the creation of enterprises and jobs (Brown and Attwell, 1998).

**Promotion of transferability**
Because of the wide range of employment that people enter after completing particular VET programmes, and because some jobs are becoming more complex through task integration, there is a premium upon the ability to transfer knowledge and skills to different situations (not least so as to reduce the learning time). Research highlights the importance of learners developing mental maps (Soden, 1993), so as to be able to organise what they have learned, with the increased possibility that they could then apply this elsewhere.

Transfer though tends to be highly specific and it needs to be **guided**: it rarely occurs spontaneously. Perkins and Salomon (1989), in their review of research on transfer, argue transfer is possible, depending upon how knowledge and skills have been learned and how the individual deals with that knowledge in different contexts. They consider two conditions are generally required for transfer to take place: context-specific knowledge and general skills have to be brought together and the approach to learning needs actively to seek ways to encourage transfer. In this respect it is important that people are given opportunities to transfer skills, knowledge and experience and are also given opportunities to practise making successful transfers (Blagg et al, 1992). Exposure to a **range** of contexts then can be valuable both for the way it can enhance and lead to a more complete ownership of a skill and because it allows learners to make connections (and think about transfer) between contexts.

Pea (1987) argues that it is necessary to promote a transfer culture, and this would include organising an affective climate directed at transfer. Hence attempts should be made to make transfer strongly linked to learner motivation and commitment. The whole thrust of this approach is that learners, in particular, but also trainers and tutors, are encouraged to analyse contexts for the possibility of skill transfer. Those supporting learners, particularly in the workplace, have to want to support skill transfer and this condition was often not met in the past.

Hayes (1992) highlights the potential for simulations or extended project work to integrate a number of strands of learning and to seek to promote the ability to transfer from that base. The requirement that learners integrate a broad range of experiences, besides having the capacity to develop the ability to transfer, can itself also help in the development of learners' critical thinking and conceptual skills. This does though depend upon learners being given opportunities for reflection so as to broaden the generality of skills and knowledge learned (Hammond and Collins, 1991).

**Ideas upon how to promote transferability**

A recent document on the need to promote transferability in learning programmes comes from Tim Oates of the Qualifications and Curriculum Authority (QCA). In a "Key Skills Strategy Paper" Oates (1998) argues that the current specifications of key skills in GNVQ and other programmes have certain benefits. However, they do not engage with the issue of how to design learning programmes such that individuals are able to transfer what they have learned to new contexts. Oates highlights the value of the development in learners of adaptability "the transformation of existing skills and knowledge in order to perform effectively in unfamiliar tasks" (Oates, 1998, p. 1). Note that what Oates terms adaptability could be broadly regarded as what is termed transferability in the context of European debates about these issues (Nijhof and Streumer, 1994). The key elements of the Oates argument are as follows:

- "the promotion of 'true transfer' may best be secured by implementing a record of achievement for continuous recording of the way in which a key skill has been deployed and redeployed across an increasing range of contexts.....adaptability - throughout lifelong learning - is best promoted not by a drive towards attaining units, but by continuous review of application of skills in varying contexts. Recording of achievement processes, supported by structured review and tutoring support may be the best vehicle to promote this in all phases. The achievement of vocational and academic qualifications would be an outcome of these processes directed at adaptability, rather than adaptability itself being the focus of 'hard' certification" (Oates, 1998, p. 3).

- "skill transfer can break down unpredictably from person to person.....it seems to be down to the strategies which people use in coping with unfamiliar problems - the skills of transfer, and not just the possession of transferable skills.....we must recognise that summary assessment and certification of key skills or transferable skills is necessary, but insufficient. This needs to be supplemented by processes which encourage learners to analyse the way in which they are acquiring key skills, in analysing the links between activities they have undertaken in the past and the demands of new activities, and target-setting using frameworks of key/transferable skills. However, it is probable that normal assessment and certification processes are unlikely to sensitively discriminate the 'surface' learning from the 'deep' learning effects. In consequence the argument that urgent attention be paid to the shape of learning programmes is a message UK education and training could do well to heed" (Oates, 1998, pp 6-7, emphasis in the original).

- the strongest evidence on the value of this approach comes from a project on Cognitive Acceleration in Science Education (CASE) by Adey and Yates (1990). Students taking part in this initiative achieved higher grades not only in science subjects but also in subjects in which there had been no intervention. The curricular approach focused upon the following:

- **cognitive conflict** - students had to 'struggle' with intellectually challenging problems. This approach required greater coherence in structuring learning situations, and the challenge had to be such that it could support learner development, without demoralising the learner through constant failure;
- **reflection** - learners were explicitly encouraged to think about and reflect upon their own thinking processes;
- bridging - learners were encouraged to adopt a conscious approach to transfer, in that they were encouraged to apply existing strategies to new tasks or situations;
- **reasoning patterns** - these were not taught directly, but teachers who were aware of these were "better equipped to help pupils develop the reasoning patterns for themselves" (Adey and Yates, 1990, p. 2).

- Oates also highlights how problem-solving approaches in maths have yielded enhanced performance in the application of skills through stimulation of enquiry in unfamiliar settings (Boaler, 1996). Medical training is also quoted as an area that has been effective in securing skill transfer. Although Oates (1998) refers to evidence of skill transfer in medical training from the USA and New Zealand (Newble and Clarke, 1986), problem-solving approaches are now almost universal in the early stages of medical training in the UK. These have had marked effects on motivation and resulted in significant reductions in drop-out compared to the more traditional academic approaches previously used. These approaches also utilise a careful sequencing of theory and practice, focus upon learning styles and deliberate use of a wide range of learning styles (Newble and Clarke, 1986).

- Oates goes on to argue that although "the precise details of the models vary.....they share a common theory-driven pedagogy, focusing on principles of fostering autonomous redeployment of skills, through learning programmes where difference in context is managed carefully as a key aspect of the learning programme.....the crucial component therefore seems to be the following: pedagogy and programme management driven by a coherent model of skill transfer, not the simple implementation of a list of key skills" (Oates, 1998, p. 24).

If one intention of a learning programme is to help learners develop the ability to transfer skills, knowledge and understanding, then learning contexts are required which draw attention to the significance of skill transfer. For example, this could involve actively helping people to look for opportunities to transfer skills, knowledge and experience and giving them opportunities to practise making successful transfers (Blagg et al, 1992). There is a need to create and sustain a culture within organisations which values learning and development, and reflection can be an important process to help achieve this (Brown and Evans, 1994).

Any individuals with an ability to transfer what they have learned between contexts will need to be reflective both of their own practice and their own learning. The value of encouraging learners to reflect upon their own learning to try to get beyond surface level

knowledge has long been recognised.  In particular, attempts should be made to support reflection upon practice: that is, set up a spiral where what is **learned** from reflection on practice can inform action, thereby leading to further learning and so on (Winter, 1991).

An emphasis on reflection can also act to draw attention away from concerns with the acquisition of a fixed body of knowledge or a set of immutable competences: practice itself should always be **developing**.  Hence it will be necessary for individuals to be able to continue to build and refine their own base of knowledge and understanding through reflection on practice, building a spiral of action and appreciation, leading to reflection-in-action (Schön, 1983).  Critical reflection on experience then is seen as a motor for learning at work (Kolb, 1984).

**A focus upon 'core problems'**
Another complementary set of ideas upon how to promote transferability in VET with a strong work-based component could be through a focus upon 'core problems', those problems and dilemmas that are central to the practice of an occupation (Onstenk et al, 1990).  Such an approach should be pedagogically driven, with proposed activities considered within an overarching conceptual and theoretical framework.  The approach should address not only the development of the requisite skills and technical knowledge base, but also be underpinned by a commitment to continuing learning and professional development as a reflexive process, acknowledging the importance of critical reflection as a basis for learning.  Such an approach to learning would also be collaborative with a particular emphasis upon the use of problem-based learning.

The focus upon the 'core problems' of groups of practitioners relate to the problems that are central to the performance of roles of particular groups of practitioners.  They are characterised by uncertainty, complexity, conflicting considerations and require the exercise of judgement.  These problems may have organisational, occupational and technical dimensions, and their solution may require knowledge, insight, skills and attitudes related to these dimensions, as well as inter-disciplinary knowledge, the application of high-level cognitive skills and the inter-related use of communication and other core skills.  Such an approach does link to the increasing use of problem-based learning within a number of VET fields, including medical, legal and engineering education.  In this perspective too key (core) skills development fits naturally within a curricular approach that utilises core problems as a key learning strategy.

A more fully developed rationale for this type of approach (Brown, 1998), 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 themselves
- 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 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 VET to feel they are moving towards assuming a full position within particular 'communities of practice' (Lave, 1991), and a subsequent continuing commitment to explore, reflect upon and improve their professional practice (Schön, 1983; 1987).

The explicit linking of processes of learning and reflection within VET 'core problems' at work does not, however, mean that this type of work-related learning is the sole curriculum driver: not least because the essence of competent professional practice is that the practitioner is able to respond intelligently in situations which are sufficiently novel that the response has to be generated in situ (Elliott, 1990). The collaborative dimension too needs stressing (Lave and Wenger, 1991), as the concept of work-based learning sometimes relies heavily on individualistic processes of reflection (Winter and Maisch, 1996). Further, Eraut (1994) highlights how a focus upon workplace practice cannot necessarily be equated with a capacity to understand the ideas and concepts that inform such actions.

Work-related learners should seek to ensure that significant intellectual development takes place. One way of raising the intellectual demands is to make use of problem-based learning where the focus is upon core problems of groups of practitioners (Onstenk, 1997), acknowledging the contribution theoretical concepts can make to assist individuals to understand what they are doing and why work practices are subject to change (Engeström, 1995). Another advantage of a focus upon 'core problems' is that it highlights the way professionals working in one sphere increasingly have to deal with issues that are not necessarily within a single disciplinary compass, and that they have to be able to work with colleagues and in groups with different kinds of expertise (Engeström, 1995). Young and Guile (1997) argue that increasingly professionals need to

possess a connective, rather than an insular, form of specialisation, which stresses the ability to look beyond traditional professional boundaries.

The focus upon core problems can help draw attention to another aspect of developing expertise that lies in the ability of the professional to handle the complexity and inter-relatedness of issues. This has at least three dimensions. One is the form of the representation of knowledge structures into mental models (Soden, 1993) or networks (Simons, 1990), which are capable of handling increasing complexity and inter-relatedness of issues. The second dimension relates to the way an individual is able to hold and inter-relate ideas from different spheres (practice, research and theory) to get a fuller, deeper contextualised understanding of professional issues, which affect policy and practice. The third dimension then revolves around the capability to apply that contextualised understanding to particular situations and, if appropriate, to translate that understanding into action.

Core problems can be used as a facilitator of both practical and theoretical learning. That is, rather than becoming locked into current modes of practice, 'theoretical learning' is also developed through applying the concepts for analysing the problems that arise for professionals at work and for 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. Crucially, however, the development and application of theoretical learning also facilitates a forward-looking perspective: enabling thinking about how practice **might** be developed in future. Indeed, a base is laid whereby the subsequent application of the processes of research, review and reflection in new contexts can lead to the creation of new forms of knowledge (Engeström, 1995). The use of core problems within VET can therefore act as a springboard for the:

- exploration of and reflection upon occupational 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.

From both these examples it is clear that one key message for those charged with designing effective learning programmes for the development of flexibility, transferability and mobility is that the prime focus of the inter-relationship between education, training and employment needs to be upon learning. Particular attention should be given to ways of outlining learning outcomes and processes in broad terms, and looking for opportunities to help learners apply what they have learned in different contexts. A focus upon learning immediately draws attention to the need to ensure learners possess or develop effective learning strategies. In particular, if the intention of a learning programme is to help learners develop the ability to transfer skills, knowledge and understanding, then learning contexts are required which draw attention to the significance of skill transfer. Processes of review and critical reflection are pivotal for this. Organised reflection on what has been learned and what needs to be learned in future can act as a bridge between working and learning, and as a bridge between the skills that are currently required and those that may be needed in future.

## 5. Critical role for guidance in facilitating flexibility and transferability

If individuals are to be flexible in how they view labour market opportunities and be prepared to transfer their skills, knowledge and experience between contexts, then they need access to guidance that will support them in these tasks.

**Role of guidance in education and training markets**
"The idealised learner within market models of the learning society operates as an autonomous customer, constructing a personalised pathway through modular curricula, leading to a tailored qualification, and owing no allegiance to any one institutional provider" (Edwards et al, 1998). This was the rationale behind the policy of the previous Conservative government, when individuals were urged to invest in lifelong learning in order to 'develop their personal competitiveness' (DfEE, 1995). In such circumstances, the quality and impartiality of educational and careers guidance becomes critical, and this was emphasised in successive national enquiries (Dearing, 1996; Kennedy, 1997). Where intense competition for students squeezes collaborative action, then the impartiality of institutional guidance is at risk (Connelly, 1996; Payne 1996). In practice, evidence is mounting that in-house advice from providers was thoroughly compromised by their own concerns for recruitment and retention (Ball et al, forthcoming 1999; Schagen et al, 1996).

Advice from guidance practitioners in the recently privatised careers companies is seen as more impartial, but even here the scope for individually tailored advice was severely compromised by requirements for practitioners to produce individual action plans. These action plans, for statutory clients (aged 18 or under), had to give a clear sense of direction, even if the narrowing of occupational choice was wholly inappropriate for the individual at that time. Such forms of action planning are predicated upon a technical-

rational model of occupational choice, which Hodkinson et al (1996) have shown bears little relation to what happens in practice.

**Pragmatic rationality in models of occupational choice**
Hodkinson et al (1996) show that occupational choice should be considered more as a process, with individuals making pragmatic decisions at key points, in the light of particular sets of circumstances operating at the time.  Similarly, Ball and Vincent (1998) draw attention to the way young people may differentiate between formal, official information ('cold knowledge'), which is often lacking in credibility, and 'hot knowledge', which is highly valued.  'Hot knowledge' is "usually evaluative and unequivocal.  Such 'hot knowledge' is often absolutely decisive in making a choice or rejecting an institution entirely.  Such knowledge is also particularly valued because the evaluations, advice, comment are often tailored to the personal characteristics of the individual" (Ball et al, forthcoming 1999, draft p. 30).  The specification of official information as 'cold knowledge' would also tune in with the findings of Russell and Wardman (1998) that most 16 year-olds pay relatively little attention to careers information materials when making decisions about their future at the end of compulsory schooling.

The number of young people who are 'active choosers' (Macrae et al, 1996) may be outweighed by those who through lack of knowledge, confidence and pressure of time respond to particular opportunities in a pragmatically rational way rather than making more considered choices (Hodkinson et al, 1996).  Young people also hold very different views about the labour market, skill development and careers: "knowledge, perceptions, beliefs and attitudes towards skill formation are socially structured and not shared equally.  Associated with this orientation is the notion that a series of 'cognitive filters' operate within the skills formation arena that strongly influence individuals' decision-making.  Furthermore it is generally recognised that such 'cognitive filters' are asymmetric: the least privileged in terms of social background have the least knowledge about how the system itself operates" (Penn, 1998, p. 4, emphasis in the original).  Penn et al (1993) similarly have shown that first generation international migrants have a significantly more restricted understanding of contemporary occupational and training structures.  This means that attention has to be given to broad careers education, and without that notions such as flexibility and mobility will have little meaning, if both external constraints and internal cognitive filters are acting to limit individuals' thinking about skills formation, occupational choice and career development.

**Adult guidance**
The extent and nature of careers guidance is often circumscribed for young people, for whom careers services have a statutory duty to provide guidance.  The position for older people in relation to access to guidance is much weaker, with the national (Fryer) report on lifelong learning underscoring the point about the "inadequate or insufficiently available impartial guidance and counselling for would-be learners" (Fryer, 1997, p. 21).  There are also problems associated with 'guidance' itself being promoted in an uncritical way.  For example, Edwards et al (1998) point out "guidance is presented in the literature

as pivotal to the operation of a learning society, but tends to be seen as a uniform set of practices, undifferentiated between contexts and audiences" (p.84).

## Guidance within learning programmes
Within learning programmes too, if learners are following individualised learning pathways, then this requires access to and greater flexibility from guidance services (HEE, 1997).  Howieson and Croxford (1997) point to the positive influence of careers education and guidance for some young people on a number of outcomes, relating to progression, training, qualifications and prospects, while Croxford et al (1996) highlight how enhanced guidance provision could influence patterns of participation in post-16 education.  Similarly, if an individual has a variety of ways to accumulate credit, including through assembly of a portfolio of evidence, then guidance becomes more central to that process (Cooper, 1996).  However, "the models of guidance in practice mostly continue to seek to match individuals to available opportunities" (Edwards et al, 1998, p. 36).

Harris and Unwin (1998) have shown that even the information-giving aspect of guidance presents challenges for guidance practitioners: "the careers adviser is in the position of having to try and assess where the student is at in terms of their awareness, understanding of and interest in various post-16 routes, before they can begin to enter in to any kind of dialogue between the student and themselves, as opposed to simply being a source of information" (p. 34).  Harris and Unwin (1998) also found that for both parents and students "whilst there is an understanding of the 'big picture', that is the importance of training and qualifications, the more detailed picture of the various routes open is less clear" (p. 35).  Wardman and Stevens (1998), in a study of young people who had switched courses within nine months of starting their first post-16 education or training course, found that many 'switchers' either felt unprepared for their transition at 16 or had not seriously considered doing anything else.  These people had all had some careers education and guidance (CEG), but Wardman and Stevens argue that it would have been helpful if CEG had played a much more prominent role in young people's decision making in order to help them make smoother transitions at 16.

## Guidance and learning at work
Where companies have made use of wide-ranging employee development schemes, then guidance and support can play a critical role in facilitating participation, development and progression (Harrison, 1997; Payne, 1996; Carroll, 1996).  Indeed, Harrison (1997) goes on to make the point that, without appropriate information and guidance, individual choices may be problematic: "for whilst they are given responsibility for anticipating their own development needs, they are given no real information about changes in the organisational structure or future trading patterns of their employer" (Edwards et al, 1998, p. 54).  Other proposed developments such as the National Grid for Learning and the University for Industry offer innovative ways to access learning products and services (DfEE, 1998), but are dependent upon learners becoming familiar with what is available, and the strengths and weaknesses of different types of provision.  Access to guidance could then become a critical factor in how well the system operates in practice.

**Research into the guidance process**

These pleas for more guidance, however, should not be taken as blanket evidence that any increase in the guidance available is automatically 'a good thing'. The guidance process has to engage the clients. It is noticeable that, when young people are asked about their satisfaction with careers guidance interviews some focus less upon the particular advice given and stress their judgement is influenced by whether they felt the guidance practitioner was interested in them and they 'felt understood' (Wilden and La Gro, 1998).

Similarly, Bloomer and Hodkinson (1998) point out how the current, policy-driven FE obsession with retention and completion is portrayed as in the interests of all, yet may not always be in the interests of learners. They give an example of a student praising a tutor for helping him "decide to leave, despite the fact that this advice must have worsened college statistics and possibly reduced its income" (p. 66). It is a common-place to reiterate that guidance should be client-centred, but analysis of interviews in practice have shown the very low level of common ground between practitioners and clients in identifying 'helpful interventions' (Wilden and La Gro, 1998). This should give pause for thought: perhaps rather than blanket calls for more guidance, what would be really useful is more research on what constitutes 'effective guidance', and how this relates to the concerns of practitioners and clients, and how they perceive the development of the guidance process.

## 6.    The value of broad approaches to education, training, skill development and labour market policy

### 6.1    Need for a broader labour market perspective to address issues of social exclusion

So far, however, there is a danger that this review will fall into a functionalist trap of viewing skills supply simply in terms of what is required for the (future) labour market. However, as Bengtsson (1993) points out issues of supply and demand in the labour market do pose a set of more general policy issues. In particular, there is a need to move away from a simple 'matching' or functionalist perspective on the relationship between skills, VET and labour market. For example, a broader labour market perspective might consider a range of issues around the privileging of certain groups in the way much VET is currently organised:

- according to gender, particularly in relation to differential access to employment, with women having more limited opportunities for progression and access to further education and training (see, for example, Clarke (1991) on England; Istance and Rees (1994) on Wales);

- according to employment status, with peripheral workers often getting little access to further education and training (Green, Ashton et al, forthcoming); and given the over-representation of women, black people and migrant workers in the peripheral

workforce (Forrester et al., 1995b) differential access to VET, including opportunities for informal learning, can act as a reinforcement of social inequality (Onna, 1992).

One conclusion from the above is that there may be a host of reasons why society may wish to develop people's skills other than simply to meet employers' skill demands. Indeed even from this within this limited paradigm there is still a need for a broader labour market perspective in order to address issues of democracy, equality, social justice and social exclusion. For example, much greater attention could be given to mainstreaming equality in education, training and labour market policies.

## 6.2 Mainstreaming equality in education, training and labour market policies

Rees in her book 'Mainstreaming equality in the European Union' (Rees, 1998) documents and critiques the development of equal opportunities policies in the European Community/European Union from 1957-1997. Teresa Rees was well placed to write this book as, in addition to researching in this field, she worked as an expert advisor to the European Commission on equal opportunities and training policy for six years. 'Mainstreaming equality in the European Union' is a comprehensive account and critique of European equal opportunities policies. Rees points out that, despite the European Community making a commitment to equal treatment for men and women in 1957, today in the enlarged European Union (EU) of 15 states, "gender remains the single most important factor in education, training, job and pay distribution" (pi). The book traces and critiques the record of the EU on equal opportunities through three stages: equal treatment, positive action and mainstreaming equality. That European policies and programmes should be moving in this direction is laudable. However, Rees argues that such progress is undermined by the fact that the three recent EU White Papers on competitiveness, social exclusion, and the learning society, while recognising the importance of equal opportunities, are weakened because the gendered nature of these fields is not incorporated into the analysis upon which the policies are based.

Given that gender segregation remains one of the most entrenched characteristics of the European labour force, then an analysis of the role of education and training policies and practice plays in the reproduction of gender segregation in the labour market is timely. Since the Maastricht Treaty on European Union in 1992, the European Commission (EC) has had the competence to develop education and training policies at a European level which 'complement' the actions of individual member states. One result has been the development of action programmes at a European level, such as LEONARDO (for training) and SOCRATES (for education), which aim to influence practice. Another consequence is felt at the level of national policy, where European concerns have become more important. Rees (1998) successfully manages to offer both a top-down and a bottom-up analysis of European policies and practice in the field of equal opportunities. Indeed one of the strongest arguments illustrating the need to change mainstream policy and practice comes from similarities in the problems faced by individual positive action projects across Europe.

Rees attempts to evaluate the effect, principally on training, of three different models of equal opportunities: equal treatment, positive action and mainstreaming (also labelled 'tinkering', 'tailoring' and 'transforming'). Equal treatment policies are seen as remaining within "a narrow distributive conception of justice, and focuses the debate upon the allocation of positions within a hierarchy which is given ..... The equal treatment approach simply removes the more obvious structural barriers to individual's access to systems which themselves are shaped by those patterns of domination and oppression" (pp. 29-30). This approach results in less overt exclusion and allows some women in particular circumstances to compete on equal terms with some men. The limitations of this approach is that it ignores the significance of societal 'gender contracts', defined by Duncan as "a rough social consensus on what women and men do, think and are" (p. 415, Duncan, 1996). These societal gender contracts are underpinned by taxation, welfare, childcare and other institutional arrangements.

Positive action recognises the significance of group membership in perpetuation of disadvantage and tries to tackle some of the barriers to fuller labour market participation. Hence it goes beyond the equal treatment approach. It aims to enable women to compete more effectively, but it offers no substantive challenge to the existing framework. The most radical approach to equal opportunities though involves mainstreaming policies, based upon the notion of the politics of difference. Such policies "are those which respect and respond to differences, rather than seeking to assist women to fit into male institutions and cultures by 'becoming more like men'" (p. 40). In particular, male norms of working behaviour should not be regarded as the standard against which to judge 'atypical work' in Europe: rather "an agenda to transform would seek to normalise the plethora of working arrangements followed by many women and some men" (p. 41).

Rees (1998) highlights how European programmes have increasingly engaged with a positive action agenda, through the provision of special skills training, earmarking of budgets for guidance and counselling, and documenting examples of good practice. How to get the EU, and the individual member states, to engage in the next stage and transform training provision, so as to mainstream equality, is a formidable challenge. The 'long agenda' is seen as involving seeking "to tackle deeply-rooted organisational cultures and practices within which inequalities are embedded" (p. 47). There is though a recognition that "introducing policies designed to mainstream equality would require a radical overhaul of praxis and philosophy. The work on this has hardly begun" (p. 48). This book can therefore be seen as an important contribution to widening discussion about policies and practice in this area.

A major strength of Rees' (1998) argument lies in its analysis of the paucity of vision of the recent EU White Papers on competitiveness, social exclusion and the learning society. That these focus mainly on the labour market, and social exclusion is largely defined in these terms, is shown to be hugely problematic, especially as "the forms of inequality which characterise both education and training systems and the labour market" (p. 176) are ignored. In her conclusion, Rees turns to the future and addresses how the equality agenda, overlooked in the White Papers, could be 'mainstreamed'. It sees hope in the

creation of a climate at a European level where these issues might be addressed, for women at least. For although "there may be a political will to move some way towards mainstreaming in terms of gender equality, however defined, there are, as yet, few signs of moving beyond it to embrace other forms of inequality" (p. 200).

It is clear that Rees (1998) has concerns about the relative lack of attention given to the importance of promoting equality within education, training and the labour market in Europe. It is a pity this agenda is not fully reflected in EU White Papers, and one of the key tasks of educational researchers should be to play an active part in discussions that may frame policy-making in future. Examples of attempts to apply the different models of equal opportunities in various UK contexts are given in Rees (1998). More generally, Callender and Metcalf (1997) have conducted a literature review of 'Women and training (in Great Britain)', while Brine (1998) has presented a gender, class and race analysis of EU policy as it has been implemented within the UK. Between them, these three sources engage with equal opportunities issues as they relate to education, training and labour market policies, and are example of going beyond simple functionalist approaches to skill development.

The challenge of mainstreaming racial equality in relation to education, training and the labour market is even more daunting. For the bounded purposes of this review, it is probably sufficient to sketch some different points of entry to UK research relevant to this area. The Office for National Statistics (ONS, 1996) publication 'Social Focus on Ethnic Minorities' provides an overview of the (statistical) experience of different ethnic groups in the UK, drawing on data on population; families, homes and crime; education; economic characteristics; and health and lifestyles. The 1991 Census was the first census to collect data on (self-reported) ethnic group, and the ONS commissioned a four volume series of analyses of the data. The fourth volume (Karn (Ed.), 1997) focuses upon employment, education and housing among the ethnic minority populations of Britain. This volume contains rich veins of data analysis and interpretation, and offers a valuable introduction to those new to research in this area, not least because it offers so many other possible avenues to explore. A brief sketch of some of the findings is given below.

Owen et al (1997) demonstrate "some major differences between ethnic groups in terms of their higher education qualifications, differences which do not sit comfortably with a commitment to equality of opportunity" (p. 15). Drew et al (1997) highlight the very marked educational differentiation between ethnic groups in participation in post-16 education and training. Karn (1997) points to how "evidence from the 1991 Census on the poorer educational performance of some ethnic minority groups raises important questions about the extent and nature of discrimination. Several types of discrimination are likely to have an impact on educational attainment. First, there is discrimination within the educational system itself. Second, discrimination in employment is likely to affect educational aspirations and expectations and access to housing areas with the best schools. And finally, discrimination in the housing market, coupled with racial harassment, also increases the tendency of minority ethnic groups to live in educationally deprived areas" (p. 269, emphasis in the original).

Owen (1997) maps the very different patterns of employment, unemployment and self-employment for different ethnic groups, and Green (A.E., 1997) draws attention to the disproportionate concentration of minority ethnic groups in large urban areas. This means that the continuing decentralisation of employment may pose particular problems for some of these groups. Heath and McMahon (1997) show that minority ethnic groups, even if they were second generation, suffer a marked 'ethnic penalty' in the labour market, compared to UK-born whites, in terms of converting their similar qualifications into salaried jobs and in avoiding unemployment. Coombes (1997) then provides a detailed discussion of how census data could be used to assist monitoring for equal opportunities in employment. However, "there would be a market for such information only if employers felt the necessity of monitoring and being pro-active in promoting equal employment opportunity" (Karn, 1997, p. 175).

Notwithstanding evidence of the 'ethnic penalty' in the labour market, it is also important not to portray a uniform 'black experience' as this would be "to oversimplify the everyday processes of exclusion and to minimise the creativity of response" (Cross, 1991, p. 311). Blackburn et al (1997) reinforce this: ethnic minorities suffer disadvantages, but "their experiences are not homogeneous and they are not passive victims" (p. 282). This would also fit with the pleas of Cohen (1992) and Drew (1995) to treat race issues as complex and multi-faceted phenomena, within a broader framework for understanding racism and ethnicity (Hall, 1992). This brief review will have served its purpose if it raises the issue as to whether the pursuit of racial equality in education, training and the labour market should receive a higher priority for research and action as a target of VET. Finally, although we have considered gender and race, any move towards mainstreaming equality in education, training and the labour market should also engage with tackling other forms of inequality. See, for example, the Barnes et al (1998) review of research and development work into disabled people and employment, and the Honey and Williams (1998) report on the supply and demand for supported employment for people with severe disabilities.

## 7. Conclusion

It seems appropriate that this review which stated out by looking at (optimistic visions of) the skills required for employment in the future should end with a consideration of the challenges involved in mainstreaming equality in policy and practice in education, training and the labour market. We are agents in the construction of our own future and we need to remember that future employment needs are only one part of the mix that should influence the choices we make about our skill formation and development policies in particular. Broader societal concerns and values have a role to play too. For example, what are we to make of the evidence of Francis Green (1998) that there was only one set of skills the possession of which was associated with negative consequences in terms of pay levels and that was basic care skills. This is surely a reminder that patterns of skill development should be influenced by considerations of what type of society we wish to

be part of, not simply what types of skills we believe will be required for employment in the future.  We need to make our future, individually and collectively, not just adapt to someone else's vision of the future of work.

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