

Across Conceptual Models and Practices: Workplace learning in Higher Vocational Education in Sweden and Finland

1 Introduction

The increasingly competitive nature of the global economy and occupational change has in turn had a significant impact on the nature of work. In general, the concept of work has become more fragmented and subject to processes of rapid and unpredictable change. This process which affects the physical, emotional and cognitive demands on workers includes, for example, blurring of distinctions between the private sphere and working life, and the difference between what is learning and actual production (Garrick and Jakupec 2000). These changes have in turn meant that the skill level of employees is subject to continuous development (Johnston and Hawke 2002; Beck 1992), which has spurred the need for new and more efficient solutions for improved educational attainments and provision of individual skills (Brandsma and Nijhof 1999; Furlong and Cartmel 1997). Perhaps most importantly, education and training is no longer seen as being solely the realm of educational institutions in society. Rather, education and training is increasingly viewed in terms of a broader network-thinking involving the workplace, educational institutions, individuals and a variety of government, private enterprises and community organisations (Illeris 2003; NCVER 2002; Garrick and Jakupec 2000).

In this changing context, the Swedish approach of providing vocational educational and training (VET) through a single integrated national education system, experienced difficulties and problems at the beginning of the 1990s (Lindell and Abrahamsson 2002). This was mostly because the educational system tended to focus more on what schools can supply, rather than what industry actually demands (SOU 1995). Similarly, in Finland by the end of the 1980s it was felt that the education and training structure did not respond to the rapidly changing needs in the labour market or the changing international environment. Here it was believed that the most efficient way to expand higher education was to establish more vocationally and practically-oriented institutions.

In response, in 1991 the Finnish government launched the reform of polytechnics which, together with the traditional universities, provide the highest level of vocational education and training (Ministry of Education 2000). In a similar situation to meet the demands from domestic industry and commerce, but also to counteract the rather high rates of unemployment, especially among young people, in 1996 the Swedish government launched the reform of Advanced Vocational Education (AVE). What jointly characterises these two reforms are the efforts bringing educators and representatives of working life together to develop innovative forms of workplace learning.

Aims and research questions

The principal aim of this study is to analyse the organisational structure of the Swedish AVE and the Finnish reform of polytechnics in terms of their ability to bridge the worlds of school and work. In particular, this study aims to describe how workplace learning has been organised and, furthermore, what kinds of practical implications these new forms of training have resulted in.

This study addresses the following two research questions:

1. What are the main differences between how workplace learning is formally designed within the reforms of AVE and Polytechnics respectively?
2. How is workplace learning practically arranged within the reforms of AVE and Polytechnics respectively?

In the next section, the authors briefly contextualise the extensive concept of workplace learning and, in particular, the adjacent issues of some contemporary models of learning at work and qualifications. This is followed by a section outlining the methodology of this study. The paper concludes by answering the research questions addressed above.

2 Concept of workplace learning

The concept of workplace learning is deemed to be among the highest priorities of western economies. At the same time this globally disseminated concept has many different connotations, causing confusion as to what it actually comprises. Indeed, depending on the context, apprenticeships, traineeships, work-based degrees, continuing vocational and professional education, could equally be labelled as different categories of ‘workplace learning’ (Forrester and McTigue 2004). For this cross-national study, ‘workplace learning’ is defined as an ‘umbrella-concept’ including both formal, informal and occasional methods of learning at the workplace (see Boud and Garrick 1999). In addition to purely economic reasons, the motives for pursuing workplace learning are also educational, social and cultural (Garrick and Jakupec 2000; Jakupec 2000). Hence the suggested benefits are multiple.

Taking a managerial perspective, Sauter (1999) stresses that workplace learning enables rapid application of what has been learnt to cope with the growing volume of work and more stringent quality requirements. Similarly, Curtain (2000) suggests that workplace learning offers at least three sets of benefits which at the same time link educators and working life together. Firstly, employers can demonstrate to students the skills needed, and hence reinforce the value of relevant education. Secondly, students gain a better appreciation of how and why classroom performance is important in their future career and hence exert more effort. Thirdly, teachers accrue additional authority towards students based on their close association with future employers.

2.1 Models of learning at work and qualifications

Evans and Rainbird (2002) elaborate on the contemporary models suggesting that four different but overlapping forms of workplace learning can be found. The first form is *initial workplace learning in traineeships and apprenticeships*. Various types of apprenticeships and traineeships undertaken by students of compulsory education are included in this group. The second form of workplace learning, *work-based degrees and 'foundation' degrees*, is on the increase in higher education in the USA, Australia and the UK. In these programmes the 'clients' can gain credits from their work experiences and achievements. The degrees are awarded on the basis of these credits (Evans and Rainbird, 2002). This second form is in line with Lave and Wenger's model on how the apprentice undertakes a clearly defined and bounded linear journey in which older workers train and mould their successors, thereby ensuring the continual reproduction of an organisation or community of practice (Lave and Wenger 1991; Wenger 1998).

Non-formal workplace learning, the third form of work-based learning, can be defined as learning through work and community experience. One way of measuring this non-formal work-based learning is National Vocational Qualifications (in the UK), which try to recognise and accredit competence developed through experience and practice. Non-formal learning may also include planned and explicit learning approaches in other environments outside the formal education system. Non-formal learning is a dimension of initial vocational education and training as well. The fourth and last form of these work-based learning definitions is *access to continuing non-formal learning opportunities through the workplace*. In this group the non-formal learning opportunities are made available in the workplace through external providers. In this form of workplace learning, the role of lifelong learning is essential (Evans and Rainbird 2002). Besides the importance of the models themselves, there are also the various types of interaction between qualifications and work-based learning, which are elaborated below.

2.1.1 Interaction between qualifications and work-based learning

Eraut (2002) has defined four different types of interaction between qualifications and work-based learning. The first type is *transfer of knowledge gained from qualifications*. Most of the knowledge qualifications provide does not become usable at work without further learning in the workplace itself. Transfer of knowledge is about recognizing what prior knowledge fits the current situation. After recognizing the relevant knowledge, a new assembly of knowledge and skills required for situational understanding and responsive action is integrated (Eraut 2002).

Accreditation of work-based learning is the second type of interaction between qualifications and work-based learning. It can be argued that accreditation will provide an incentive to the learner when it confers a qualification with significant selection or promotion value, but that value can be added only if the assessment process entails significant further learning and a tolerable amount of cost and effort (Eraut 2002).

The third interaction type is *mutual enhancement through integrated learning*. This type of interaction is described to be ideal. Mutual enhancement through integrated learning is learning through interaction at the point of use: when planning, conducting, managing or evaluating work-based activities, processes or outcomes. This type of interaction can be described as using the more formal knowledge which is gained in working for a qualification to enhancing the quality of ongoing informal learning in the workplace. This type of interaction involves deep, critical and systematic thinking about work-based practises and experiences with guidance from concepts and ideas encountered in educational/ training context (Eraut 2002).

The fourth type of interaction, *competition for attention and commitment*, can occur when learning associated with qualifications has to compete for the learner's time and attention with other learning in the workplace. Aspects of the qualification may have little or no relevance to the workplace or they fail to improve the learner's career prospects. It is possible that qualifications can relate to and make demands on some job aspects but not on others. This can result in more emphasis on learning for qualification rather than other learning needs. (Eraut 2002).

3 Methodology

The methodology of this study includes two main steps. Firstly, in order to provide a contextual background and a deeper understanding for the formal design and organisation of workplace learning within the two national reforms, a number of domestic research studies, government reports and other policy documents were analysed. To retrieve the background information, governmental and bibliographical databases in Sweden and Finland were searched. In the process of selecting relevant sources, the authors felt it necessary to be flexible by keeping the amount of text material to a minimum. Thus, emphasis was put on analysing significant policy documents behind each reform only.

Secondly, this study uses the most recent national data available to explore the practical arrangements for workplace learning implemented in the 'field'. For this step, an in-depth research overview for completed or on-going research studies on these two reforms in question was made first. In particular, the overview emphasised research studies which included the topic of collaborative partnerships and models of learning at work. Criteria for inclusion of studies included rigorous research methodology with concern for validity and reliability of the sample, instruments for measurements, and scrutiny of analysis. From this overview, the Swedish data in this study stem mainly from two national evaluation studies: *Evaluation of Advanced Vocational Education– Report From a Research Team* (SOU 1999a) and *An Evaluation of Advanced Vocational Education Commissioned by the Committee on Advanced Vocational Education* (SOU 1999b). In the Finnish case, the data consists of a wide range of research studies including statistical data and governmental reports, and policy documents. In addition, descriptive statistics from the national database on monitoring the polytechnics, the 'AMKOTA' were included.

This study has some methodological considerations that need to be addressed. The main reason, as with all cross-national studies, is that it is difficult to standardise for the host of related factors that vary between nations (Ryan 1991). Firstly, there are differences on the curricular level between the two reforms (Ahola 1999). While the polytechnics include training of medical nurses, social workers, and engineers, these forms of professional degrees are not provided by AVE in Sweden, but are the responsibility of Universities and University colleges (Lindell and Adams 2000). Secondly, although Swedish and Finnish labour markets have developed along similar patterns in terms of industrial sectors, and the emergence of labour unions and employer associations, differences do exist on how these various representatives view the role of training, as well as their requirements for granting work licences, certificates, which in turn grant entry into a specific trade.

4 The Swedish reform with Advanced Vocational Education

The reform of Advanced Vocational Education (AVE) was initially launched in July 1996. The government report (SOU, 1995) that preceded the launch concluded that drastic improvements in VET regarding flexibility and adaptability towards working life had to be made. The report especially focused on the lack of higher vocational education emphasising workplace learning, which resulted in a short supply of specialists in several sectors of the Swedish labour market.

4.1 Organisational structure within AVE

AVE saw a number of new educational as well as organisational features being introduced. First, as required by law, one-third of the course programme, which ranges from one to three years in length, is devoted to advanced application of theoretical knowledge outside school at a company or organisation under the supervision and guidance of an experienced worker. Second, each AVE programme is designed in close co-operation with regional and local businesses to reflect their particular needs for skilled workers. The final decision to start a new programme rests, however, with the National Authority of Advanced Vocational Education (NAAVE), that aside from assessing applications, monitoring and evaluating the quality of the programmes, also grants financial support.

Third, to facilitate maximum employability, the content and subject matter in the programmes comprise different parts taken from labour market training, upper secondary schools, supplementary courses, and universities. This means that AVE is not provided at certain educational institutions with a fixed curricular level within the national education system. Instead, organisational belonging and responsibility varies between those who have the best opportunities depending on teacher competence and location. Thus providers of AVE programmes are upper secondary schools, municipal adult education, higher education, and also private training companies. The reform of AVE became a permanent part of the Swedish system for continuing vocational training in 2002 (Lindell and Johansson 2003). In comparison with other VET reforms in Sweden, AVE is medium-sized in terms of volume.

An overview of available programmes in 2001 distributed within the twelve different industry sectors that reflect the diversity within the labour market and the number of students for the education year is provided. There are two industrial sectors, namely information technology and manufacturing that together comprise more than 50% of the AVE programmes available. In comparison there are also small sectors, for example wood and food industry, that only constitute about 1 % of programme supply (NAAVE 2002).

4.2 Designing workplace learning within AVE

The very heart of AVE reform is the strong emphasis on learning at work. The decision that one-third of each AVE programme is to be dedicated to work-based learning was made in order to ensure that programmes are both practical, as well as based on theoretical knowledge. This means that the courses are not organised as a traditional traineeship period, but rather revolve around work-based learning and problem solving in an overall educational context. One requirement of the course providers is that the workplace itself be organised to make learning possible. Although the aim of training is to impart familiarity with an occupation or vocational area, the training is required to be more general than, for example, in-service training also provided by companies. Moreover, during the work-based learning, students are encouraged to apply a systemic perspective, to train and enhance their analytical capabilities, to apply a holistic approach towards their future profession, learn how to take responsibility for their work, and finally tune their capability to co-operate with other people in teams. According to the Government Bill (1995/96:145), a detailed plan of how these aims were to be fulfilled was required to be enclosed with every application. Moreover, the policy documents required that work-based learning should not only be designed to satisfy the current demands of the trade in question, but also to lay the foundation for continuing training throughout an individuals' active working life.

Achieving these rather high demands of work-based learning, the government policy documents also detailed how co-operation between educators and enterprises would be organised. First, it was decided that every AVE programme should have a local committee in charge of operative and strategic questions. Second, it was decided that local committees should comprise representatives from education and working life. In the latter case, both representatives of trade unions and employer associations were assumed to participate. In the former case of educators, both management and teachers were required to participate, thus forming a broad representative board with equal opportunities to exert power and responsibility, while at the same time compensate for regional and industrial characteristics and expertise (Government Bill 1995/96:145).

4.3 Results of implementing workplace learning within AVE

From the national evaluation study (SOU 1999a), the research team, of which the Swedish author was a member, found that when initiating an AVE programme, the planning process usually starts with the regional or local industry identifying a need for specific knowledge and skills. In the next step, business approaches local educators, enquiring whether they have

the possibility to provide a certain number of courses with specified content. According to the government detailed plan of how a local programme board should operate, educators and enterprises thereafter engage in appointing the representatives to the board. Based on the findings, the enterprise with support of their employer associations typically supplies the background labour market demand analysis and, through their internal networks assuring the supply of a workplace for learning while educators provide the educational contents and the matching curriculum (SOU 1999a). The parliamentary committee which investigated the pilot project with AVE indicated that the very meeting of these two groups resulted in positive synergies. In particular, the committee emphasised the necessity of bringing top management into the boards, functioning as ‘door openers’ towards the middle-level management in enterprises (SOU 1999b).

In terms of developing workplace learning models, four ‘ideal’ types could be identified. These were: trainee, project, apprenticeship and adoption. The most common form of work-based learning was organised as a traditional trainee period. Students were supposed to put their theoretical knowledge into practice. Usually the students started with single sub-operations and gradually advanced to work as a full time employee. Another common way of organizing work-based learning was in the form of a work-based project. For example, the students could develop a market plan or design web pages for a company. Using this form the students developed their ability to plan and coordinate their own work, often in cooperation with other students and company staff.

A third form, used only in a few craft or trade courses, was the traditional apprenticeship. Under supervision of an experienced tutor, the students practiced the trade and assimilated its traditions. What the students actually learn depends on the tutor and on what kind of production is available during that period. Finally, a few courses focused on entrepreneurship and self-employment using what we describe as adoption. The AVE students were adopted by a group of companies and together students, teachers and company representatives planned different types of work-based learning related to the needs of the individual students (SOU 1999b).

5 The Finnish reform of Polytechnics

The Finnish polytechnics have been developed using an experimental method (Lampinen 1995). The aim of the experiments was to gain experience that could be used later in building a permanent system, and the temporary polytechnics were given the chance of eventually gaining permanent status. Launching the reform 31 polytechnics were formed out of 215 older institutes, most of them were multidisciplinary. Since August 2000, all Finnish polytechnics have been permanent (Ministry of Education 2003b).

5.1 Organisational structure within Polytechnics

The goals of the reform were to promote regional development and meet regional needs for higher education. Both national and local forces guide the polytechnic network, formal bodies

which are composed of representatives from the workplace. Their task is to deliver the ideas derived from enterprises for planning and developing polytechnic education, and to improve a co-operation between education and working life (Ministry of Education 2002).

The polytechnics grant bachelor level degrees, comprising 140 to 180 points (3.5 – 4.5 years of full-time studies). All polytechnic degree programmes consist of practical training and diploma work. The framework of the degree programmes is governed by legislation. Each institution is free to define its own degree programmes, which consists of basic studies, professional studies, optional studies, practical training and a diploma project. Educational programmes provided by the Polytechnics in 2002 fall into seven main sectors. The largest is Technology and Communications, where first-year places in 2002 accounted for about one-third of the approximately 126 000 students that encompassing the reform per annum. The rest of the sectors are as follows: Business and Administration 27%; Health Care and Social Services 20%; Culture 7 %; Tourism, Catering, and Institutional Management 6%; Natural Resources 3%; and Humanities and Education 2% (Ministry of Education 2003a).

5.2 Designing workplace learning within Polytechnics

The guiding principle of workplace learning within the polytechnic education is to ensure that the students have possibilities during their studies to transfer theory into practice, and possibilities to test the level and usability of their know-how. This takes place, for example, through different collaborative projects in the workplace, through exercises and theses, and during practical training (Ministry of Education 2002).

The purpose of practical training is to further increase the students' learning outcomes, their possibilities to acquire a job and promote their careers (Ministry of Education 2002). Furthermore, the purpose is to raise the skill level of students and generate transfer between the educational institution and the enterprise, since both parties can benefit from the mutual know-how, methods and co-operation. Moreover, practical training, together with theoretical studies, aims at the growth of professional expertise during the course of study.

In contrast, students' diploma projects aim to develop workplaces, apply practical knowledge and meet the needs of working life (Ministry of Education 2002). A successful diploma project is perceived to help enterprises in their research and development (hereafter R & D) activities, which includes decision making and improving their competitiveness. On-the-job training offers students an opportunity to work independently and in teams, and to apply their newly won theoretical knowledge.

5.3 Results of implementing workplace learning within Polytechnics

At the outset, the reform of polytechnics appears to have increased co-operation between the worlds of vocational education and working life at various levels of organisational complexity. In particular, the concept of R & D appears to be one of the main areas in focus developing workplace learning. These core elements have certain characteristics since R & D in this educational context is mainly based on the stated needs of workplaces and not as an end in

itself (Ministry of Education 2002; Laakso-Manninen 2002). Examining these characteristics, Laakso-Manninen (2002) found four essential features, which describe the R & D activities at the Finnish polytechnics: 1) apply and develop the approach; 2) tailor in accordance with customers' needs; 3) pursue regional influence; and 4) connect the R & D to tuition. Facilitating these features, every polytechnic has prepared its own strategy for R & D (Malm 2002) where the objectives are primarily aimed towards regional support for industrial SME's and service production.

While R & D is said to be a rapidly developing field at polytechnics, the institutes do not really have a well-founded tradition in this field but are still learning, which leaves much room for organisational 'trial-and-error'. This is evident in monitoring, quality control and funding, which among others areas, are not yet fully established (Ministry of Education 2002). A report of the Finnish Higher Education Evaluation Council (Impiö et al. 2003) indicates that at some polytechnics the regional impact means almost exclusively strengthening the regional know-how through the use of traditional educational tasks. Many polytechnics have also invested in R & D and in the supply of services, but rarely are all educational sectors of a polytechnic represented.

The research results concerning project-based studying and learning at the Jyväskylän Polytechnic indicated that project learning is a cooperative construction of shared understanding and expert teams. The students learn in the authentic contexts, where they will later need the knowledge. The study revealed that since the project was a development project, the students were more tightly connected to the work community than during normal learning such as practical training (Vesterinen 2001).

The national study of the Finnish polytechnic graduates (Virolainen and Valkonen 2002) revealed that learning at work gave them a wide range of skills and good potential for finding jobs. Especially, they thought that joint projects, practical training and diploma projects between the polytechnics and local business and industry contributed to their transition to working life after graduation. The study also indicated that the guided practical training improved working skills more than part-time working while studying. Although student assessment of the qualification for working life is positive, the findings also indicated that some polytechnic graduates were also quite critical of the co-operation between polytechnics and working life. Hence there is a challenge for the polytechnics to improve connections to working life. The quality of practical training can be seen as a test for the special identity of the polytechnics in the Finnish educational system.

6 Conclusions

In answer to the **first** research question as to what the formal differences in terms of designing workplace learning are, the results indicate similarities as well as differences. On an organisational level, the two reforms appear to be designed in a similar manner where a range of the course programmes are dedicated to active learning at a workplace. One difference is that while course length within AVE programmes is approximately one-third of the

programme length, with the possibility of adjustment depending on industry's production cycles, the equivalent length of training within polytechnics is quite fixed depending on the educational sector. Secondly, while in AVE the decision for when students will have their periods of training and what the focus of the training should be like within a programme, is up to the local course providers and employers to agree upon, polytechnics have two training forms with different focus, categorised in practical training and diploma projects. The latter is focusing on research & development (R&D).

The **second** research question concerns how workplace learning is practically arranged. The results reveal important conceptual differences between the two reforms. At an organisational level, the overall flexibility within AVE also seems to affect development of workplace learning models in the 'field'. As the findings suggest, four different types appear to be in use: trainee, project, apprenticeship and adoption. Such heterogeneity is not surprising as representatives were allowed a large degree of freedom from the start (SOU 1999a). From an analytical point of view, the originality and variations of the models inhibit a clear-cut categorisation as they in sum surpass the explanatory models as described by Evans and Rainbird (2002). Hence, from a workplace learning theory perspective, this central part of AVE could better be analysed as a variation of the concept of 'situated learning' as developed by Lave and Wenger (1991) and Wenger (1998). The purpose of students spending several weeks and sometimes even months at a workplace within an enterprise is not only for testing and improving their practical skills, abilities and theoretical knowledge under real circumstances. Equally important, in sharing everyday practices with the supervisor and others learning the informal rules, values and ethics connected with the vocation. It is intended that the students will become socialised into the profession, and thus become mainstream members of the workforce in a manner that simply cannot be taught by school-based training only – a pedagogical idea corresponding well to the Lave and Wenger's perspective on how the relations of legitimate peripheral relations and communities of practice underpin learning and identity formation (Lave and Wenger 1991; Wenger 1998). This latter model also links well into what Eraut (2002) describes as *mutual enhancement through integrated learning*, since the training within AVE involves deep, critical and systematic thinking of everyday experiences and day-to-day practices guided partially by teachers and partially by mentors at the workplace.

The Finnish reform of polytechnics is slightly more difficult to grasp at this point as it is still striving to establish routines regarding partnership with working life (Ministry of Education 2002) Nevertheless, from an organisational perspective, the actual implementation of workplace learning within polytechnics appears, as with AVE, to take multiple forms depending much on geographical location. In sum, it appears that experimental learning and transfer of knowledge are two crucial factors that guide the fieldwork, which is in line with the fourth model of *access to continuing non-formal learning*, as proposed by Evans and Rainbird (2002). This also encapsulates Eraut's (2002) conceptualisation of transfer of knowledge, and recognition of prior knowledge in current workplace situations. Overall, the main aims of workplace learning appears to be assisting enterprises improve the organisation, trouble-

shooting or other more managerial tasks, rather than participating within the daily practices of the workplace, as is the case with the AVE. However, it is very important to stress that since this study focuses on the institutional framework of the reforms – not analysing the patterns of participants social, ethnical or gender background – this delimits the possibility for presenting evidence of how the reforms actually support or render individuals access to, and equity within, workplace learning. Hence, questions such as how students view their workplace and whether they become accepted by employers remain to be answered.

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