Odd Bjørn Ure

«Learning is too important to be left to...»

A contribution to general frameworks for Classroom Training and Workplace Training

Fafo

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Foreword

This paper is a revised and enlarged version of a paper presented at the European Conference on Educational Research in Geneva, September 2006. It has benefited from critics from fellow researchers belonging to the European network VETNET. I am also grateful to Professor John Conrad at Conrad Associates Int. and to Professor Stephen Billett at the Griffith University, Australia, for having pinpointed useful directions to an earlier version of the paper. The empirical data lean on evaluation reports of the 'Competence Development Programme' in which Fafo was involved during the period 2000-2006, together with the research institute SNF.

Introduction

Traditionally, 'learning' and 'work' used to belong in separate categories. Work was about producing or doing things to earn a living. Learning was about initial education. Today, learning is too important to be left to educational institutions and in-house training departments (D. Boud, J. Garrick 1999: 2ff).

In the field of Vocational Education and Training (VET) the classroom and the workplace are often considered as two major learning environments. Ongoing transformations of industrialised societies have an impact on learning environments and on how they are interacting. Transformations of work organisations based on Taylorist/Fordist principles towards the present variety of post-Fordism entail new ways of organising work and learning. Some of these new traits can be summarised as follows (cf. Boreham et al. 2002:2)

- replacing narrow qualifications with broader ones
- increasing budgets for continuous learning in the workplace
- engaging employees in the continual improvement of the work process through quality assurance and dialogue between different work units
- encouraging staff at all levels to share their knowledge with colleagues throughout the whole organisation

Some scholars even refer to the emergence of 'a new paradigm of work' as a response to increasing competitiveness within a business context of uncertainty and unpredictability, often accompanied by technological innovation (cf. Oliveira et al. in Boreham et al. 2002:106).

Similar explanations are featured by Baethge and Baethge-Kinsky (2004) in a major work on lifelong learning in Germany. The authors summarise education under post-Fordist conditions in the following way (p.13):

- pluralization of learning forms (increasing weight on non-formal learning)
- open learning biographies; lifelong learning
- increasing weight on external labour markets and occupational mobility

The public debate on Vocational Education and Training is often marked by a tendency to consider Classroom Training (CT) and Workplace Training (WT) as parallel or even opposite

learning environments[1]. This happens in spite of favourable appreciations of dual apprenticeship systems and of Vocational Education and Training in general. In contemporary academic debates on workplace learning the conditions around transfer of learning into new contexts as well as translation of learning outcomes is a recurring theme (cf. Rainbird et al. 2004).

In order to cross boundaries between learning and work, this paper looks at the interaction between Classroom Training (CT) and Workplace Training (WT). We depart from the assumption that this interaction entails practices that for analytical purposes can be distinguished. Practices emanating from these two learning environments can therefore be said to follow two tracks by producing (individual) learning outcomes and learning experiences. On the one hand, translation of *learning outcomes* can lead to *validation* of learning, be it formal, non-formal or informal. On the other hand, the transfer of (collective) *learning experiences* implies that experiences are being *valorised* (i.e. disseminated and exploited) to fit into other contexts. Both "tracks" are central in vocational training policy and are taken onboard in broader Lifelong Learning policies, like a Norwegian LLL reform (the 'Competence Reform' 1999-2006) which we will refer to in this paper.

Our strain of thought can schematically be illustrated as follows:

Box 1:
interaction WT - CT -> translation of learning outcomes for the individual -> validation of formal, non-formal and informal learning -> accreditation of learning in the education and production system

interaction WT - CT -> transfer of learning experiences at project or programme level -> dissemination and exploitation ('valorisation') of learning in the education and production system

Such an approach to WT and CT might help us to interpret observations from some Norwegian Lifelong Learning projects on which we partly base our paper. With a view to further illustrate interactions between the two learning environments WT and CT, we will sketch a kind of hierarchy of how the workplace is being used for learning purposes. Later in the paper, we will relate the findings from the Norwegian LLL projects to existing literature and policy concepts in the field. Finally, we suggest some implications for theory and policy in the field of Vocational Education and Training.

Data and methodology

We have harvested from an *in itinerere* evaluation of the Norwegian Competence Development Programme, launched in year 2000 to spur WT as part of a lifelong learning reform. We have in particular looked at an 'umbrella project' comprising ten factories in the Norwegian process industries (cf. evaluation reports 2004-2006). The annual evaluation reports combine quantitative and qualitative methods, while the WT project in question has been analysed from written material and semi-structured telephone interviews with workers undergoing

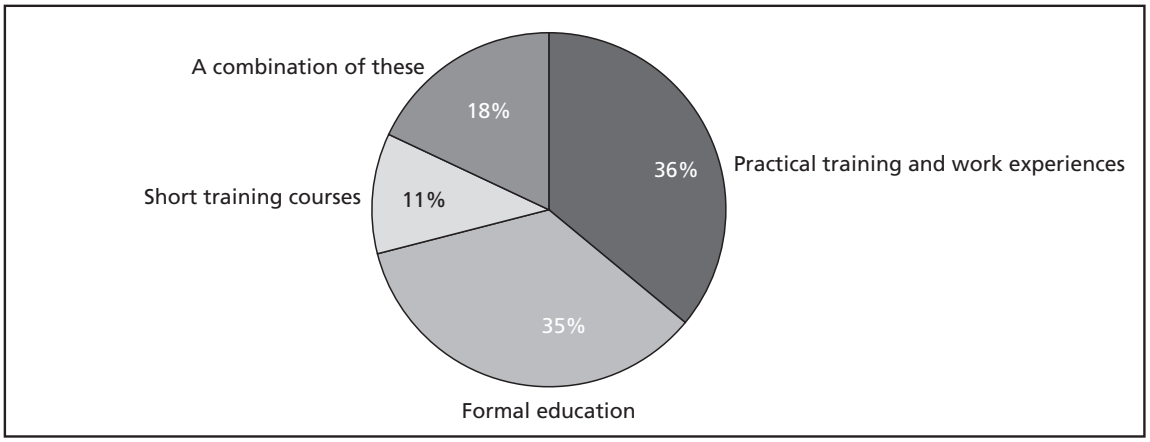
[1] See e.g. C. Helms Jørgensen (2004) and D. Boud, J. Garrick (1999) for an assessment of academic works on work and learning.

training, organisers of training in the enterprises and a branch organisation at sectoral level. In the process industry plants ten interviews with process operators were carried out. On two occasions, in 2005 and 2006, we also interviewed five contact persons in the plants, mostly training managers and shop stewards,- in addition to organisers at the 'Norwegian Industry College'[2], i.a. serving process industries.

Workplace training

Survey data from a Norwegian Learning Condition Monitor, based on a representative sample of 17,000 respondents aged 16-74 of which 12,000 in employment, indicate that WT is the most beneficial form of learning for employees.

Table 1: Most people want to learn through practical experience or short courses



(cf. T Nyen et al: 2004: 78)

The table shows that most people who feel they have a learning need, prefer to acquire new knowledge and skills either through practical training and job experience or by attending short training courses. 36% prefer to learn through practical training or job experience. About the same proportion prefers to learn through participation in short training courses. The others either want to learn through formal education (11%) or by a combination of different learning forms (18%). A German survey based on a sample of more than 4000 learners confirmed the importance attached to practical training and work experiences. Although the questions were phrased differently in Germany, it is worth noting that 58% of the employed respondents considered work related learning ('arbeitsnahe Lernen') to be their most important 'learning context' (M. Baethge, V. Baethge-Kinsky 2004:42).

[2] http://industriskolen.no/category/English/category.php?categoryID=121

Passing on from the entire Lifelong Learning scene to the specific Norwegian LLL programme (the Competence Development Programme), it appeared that many of the projects depended on a considerable workplace mobilisation. The programme comprised 740 projects, some of them quite experimental. They were subsidized from the public purse and supervised by the social partners; initially by means of a joint secretariat, later only through a programme board. CT was an integral part in many projects and was for the learners, in most cases, a necessary condition for passing an exam leading to accredited learning. Social partner organisations wanted to harvest experiences for their own policy-making and planned to take part in the dissemination of project results.

We have particularly looked at projects in the process industries aiming to raise the skill level of workers who already held an apprenticeship certificate. Hence, further training courses for process operators were set up in the paper industry as well as in the aluminium industry. The part-time training lasted for 18 months, initiated with a six-month theoretical introduction before the main part of the course began.

Observations from the evaluation of the entire Lifelong Learning programme (cf. Døving et al. 2002:33) and above all our material from projects in the Norwegian process industries, make us suggest a kind of *hierarchy of how the workplace is used for learning purposes*, thus illustrating how WT and CT are interacting:

Box 2:

1. the training is held outside the workplace but is based on examples from real work situations
2. reflection on own work, either individually or collectively, forms part of the training
3. on-the-job training is arranged at the workplace
4. equipment, materials etc. from the workplace are utilised in on-the-job training
5. colleagues are involved in training, demonstration or counselling of fellow colleagues
6. the workplace is used to illustrate theoretical issues in the curricula
7. the workplace is deliberately adapted to carry out specific training
8. training is integrated in the work organisation to the extent that it entails job-rotation and more permanent modifications of work processes

At least, points 1, 3, 4, 5 and 6 apply for the projects carried out in the Norwegian process industries mentioned above. Below, we will briefly delineate how the projects addressed these points.

1+3: Training was partly held in a classroom situation and partly at the workplace. The practical training took place at the workplace. Once a week the workers gathered in a classroom in order to sum up and discuss questions arising from their self-studies during the past seven days. Every sixth month learners from enterprises involved in similar projects attended joint seminars over a weekend in order to exchange learning experiences.

4: Equipment and materials at the workplace were used to illustrate points in the practical part of the training, such as handling of machinery and furnaces. In general, practical demonstrations took place at the workplace or in neighbouring factories. Visits to adjacent factories

were reported to have enlarged the understanding of the production process from a factory to a branch perspective.

5: Personnel with a degree at higher education level were mobilised to train and instruct process operators enrolled in further training. In particular engineers and technicians were called upon. Feedback from learners suggests that the pedagogical quality of the presentations given by their white-collar colleagues varied considerably. One positive side effect reported was a considerable improvement of internal communication across staff categories.

6: Using the workplace to illustrate parts of the curriculum can e.g. comprise calculation exercises of the temperature in aluminium furnaces. Workplace demonstrations of theoretical issues in the curricula have proven to be very beneficial for workers having been out of school for several years.

It should be noted that the eight points above do only represent a hierarchy in the sense that each step from 1) to 8) implies stronger interaction between CT and WT, thus improving the competence level in the work organisation.

Such interaction i.a. entails translation of learning outcomes at individual level. In concrete terms, this meant that the learners after a final course exam had the opportunity to go through an additional exam arranged by a university college. This exam sanctioned the formal learning taking place during the 18 months course by translating it into European Credit Transfer System (ECTS) points. At the same time, the informal learning embedded in the workers passing this additional exam, was validated but – according to the learners - insufficiently appreciated in terms of the amount of ECTS points awarded.

In principle, there is an individual right at the level of higher education to convert non-formal and informal competencies into shorter study periods, but it has not yet come into practice. While the adults are largely admitted to higher education on the basis of non-formal and informal learning, they are rarely exempted from courses or examinations (cf. Helland, Opheim 2004).

Within the process industries we also observed a transfer of learning experiences, starting as further training for skilled operators in paper factories, moving to the aluminium industry and towards present plans to adapt the courses to the chemical industry. This entails dissemination of learning practices and their further exploitation in new contexts. The evaluation of the Competence Development Programme suggests that the systematic dissemination between branches in the process industries is close to a best case within the entire Lifelong Learning programme.

However, when transferring and adapting the courses from branch to branch, there has been some discussion on how profound changes of the course material that were needed. In general, workers felt alienated when not being presented with examples from work processes very close to their daily experiences.

In the next section we will discuss how these observations relate to existing literature and policy concepts in the field of Vocational Education and Training.

Existing literature and policy concepts in the field

Work process knowledge

On the foregoing pages the terms *learning, education and training* are partly used as replacements for each other. This can under some circumstances lead to confusion:

> "...learning in workplaces should not be confused with training in workplaces, as the latter has an explicit pedagogic structure, namely training objectives and programmes, and requires the active participation of the trainer and the use of didactic material, training tasks and evaluations" (Boreham et al. 2002:109)

However, in the academic discourse the notion 'work process knowledge' contributes to bridging learning, education and training without mixing these notions haphazardly. Work process learning (WPL) is used as a concept for informal learning at the workplace combined with the codified knowledge recorded in textbooks. Inspired from Wilfried Kruse, the notion of WPL is explained as follows in Nicholas Boreham's introduction to his book (2002:6f) with the same title:

- an expanded understanding of work roles in parts of the organisation other than the employee's own
- an awareness of the interdependency of the activities in different departments, including characteristics of the system as a whole, such as the flow of work through the organisation (...)
- participation in a workplace culture which provides a service to colleagues in support of a high quality of service to the actual customer

As pointed out in the explanation above of the hierarchy of workplaces used for learning purposes, learners in the Norwegian process industries not only expanded their understanding of the work process from their own work role to the rest of the factory, but also to a branch level. One implication of the involvement of fellow workers in carrying out the training was reported to be a considerable improvement of the internal communication between staff categories. This complies with an 'increased awareness of the interdependency of activities in different departments'. The usefulness of the concept 'work process knowledge' if further illustrated by the need for demonstrations at the workplace of theoretical issues in the curricula. To put this point on the edge:

> "Inert theoretical knowledge is integrated with experiential know-how in the course of solving problems at work, and this generates what we call work process knowledge" (Boreham et al. 2002:8).

While outlining *Dimensions of work process knowledge*, Oliveira et al. point out that the transformation of work experiences into learning experiences is not a direct or automatic process but a process of constructing, modifying and organising knowledge. Martin Fischer enlarges on this by maintaining that learning through experience needs to be enriched by theoretical understanding – a process leading to the acquisition of work process knowledge (Boreham et al. 2002: 118f).

In its insistence on linking processes normally subsumed under distinct terms such as learning, education and training, the notion of WPL is therefore useful in the analysis of the projects in the Norwegian process industries. The process operators in question followed training courses respecting what Onstenk would have labelled "an explicit pedagogic structure". But simultaneously the informal learning embedded in the workers was pivotal for their ability to interpret the codified knowledge recorded in textbooks that they had to absorb during the training course. Applied on the material from the Norwegian process industries, the notion of WPL turns out to be helpful in bridging the terms learning, education and training but without blurring them.

Organised support for learning at work

The Norwegian training courses illustrate the efforts needed for motivating workers, even skilled process operators endowed with a craft certificate, to take part in structured further training. The importance of organised support for learning at work has also been emphasised by Michael Eraut in H. Rainbird (2004). In the same anthology, Alan Brown et al. present an example of a highly structured approach to the provision of organised learning support. The project:

> ...."could be regarded as illustrative of the scale of the effort required if companies and individuals are serious about the implementation of significant change based upon a transformation of the relationship between working and learning" (p. 175).

A research group at Roskilde University (cf. C. Helms Jørgensen, K. Illeris, 2004) has particularly addressed WT, which is split into 'the technical-organisational learning environment' and 'the socio-cultural learning environment'. We will go through their framework while commenting how the Norwegian training projects complied with each point.

Technical-organisational learning environment

- division of work and work content
- autonomy and application of qualifications

During the implementation of Norwegian training projects there were discussions in some process plants about whether the workers should be given enlarged responsibilities after completing their final exam. Unsurprisingly, this discussion has partly been linked to the issue of whether learners using their spare time for training should be rewarded with higher wage. The standard management attitude has been that those having passed the final exam are capable of carrying out a wider range of work tasks and that they often are asked to do this; without necessarily rewarding them in the form of a higher salary or a new job title.

- possibilities of social interaction

Although the bulk of the training was self-studies at home, coupled to weekly gatherings in a classroom together with a trainer, there were opportunities for social interaction throughout the training period. This was due to the fact that parts of the training was carried out on-the-job and to an offer to attend gatherings for all learners every 6th month during an 18 month's period.

- strain and stress

The authors relate these phenomena to the degree of slack in the production in order to allow people to attend training sessions, which often is a problem in small and medium-sized enterprises (SME). This aspect has not come to the surface in our study of training in process industries, perhaps due to a high management commitment to training. Furthermore, the substantial size of the industrial plants probably represents a better environment for systematic training than the short-term daily struggle in a SME.

Socio-cultural learning environment

- communities of work (e.g. the informal work organisation)

During our interviews in the process industries the informal work organisation was alluded to when the learners decided whether or not to take an additional exam, thus translating their new knowledge into ECTS points.

Also, there was a general comment from the participants that sooner or later all skilled workers had to go through this training; and instead of waiting for the inevitable, they promptly decided to join the course, thus sharing destiny with their fellow workers.

- cultural communities (local factors)

Applied on our material, there were variations in how and to what extent local training institutions were involved, i.a. how parts of the CT took place in such institutions and, in general, how local training institutions were called upon during the more or less daily Human Relations work in the process companies.

- political communities (like trade unions)

On some occasions, trade unions mobilised learners to enrol in training courses but unions did not seem important in any follow-up activities at the level of the firm. This observation complies with a general feature on social partners' involvement in the entire Competence Development Programme: the lower echelons of employers' and employees' organisations were scarcely mobilised and, therefore, the programme and the underlying Lifelong Learning reform did not develop into any rank-and-file reform.

When using the analytical framework of C. Helms Jørgensen and K. Illeris, it strikes us that the technical-organisational learning environment has been preponderant during the implementation of training projects in the Norwegian process industries. This has probably to do with a modest mobilisation of social actors underpinning the socio-cultural learning environment. What prevailed were the well-established procedures at the level of the firm emanating from the technical-organisational learning environment.

Our main concern in this paper is to understand how the workplace is used for learning purposes and for how WT and CT are interacting. The framework offered by C.H. Jørgensen and K. Illeris offers valuable notions for understanding WT and some intersections with CT. To go even further, we need to look closer into how WT can be translated and validated in other contexts.

Translation, contextualisation and validation of learning outcomes

Concerning how learning can be transferred and translated into new settings, it is useful to read the conclusions in Rainbird 2004 in which the editors state that:

> "....transferring learning from one situation to the other will involve a significant process of re-contextualisation as people seek to make sense of the new environment" (H. Rainbird et al. 2004:304).

Stephen Billett (2001:39) stresses that learning and work are interdependent:

> "Work practices provide and structure activities and guidance in ways that influence the learning of the knowledge required for performance at work. These experiences are not informal or unstructured, as is often contended: instead they are structured by the requirements of work practice rather than the practice of educational institutions".

Billett's perspective on workplace learning, which for reasons of clarity should be distinguished from organised training at the workplace, is opposed to widespread assumptions on validation of learning outcomes. Let us illustrate that point by recalling our strain of thought presented at the beginning of the paper:

interaction WT - CT -> translation of learning outcomes for the individual -> validation of formal, non-formal and informal learning -> accreditation of learning in the education and production system

Billett's point seems to be that the translation of i.a. workplace learning by means of validation procedures leading to accreditation by the education system, does not mean that formal learning is superior to workplace learning. He reiterates that:

> "...the contributions of the workplace to learning are rich, complex and probably difficult to avoid. They are certainly neither incidental nor ad hoc. They are central to the workplace itself. The key concern is for these contributions to be directed towards developing transferable vocational knowledge that is purposeful for the individual and the enterprise in which they are employed" (Billett 2001:39).

Which attitude did then learners in Norwegian process industries have towards validation of the outcomes of their learning? As this learning was a mix of what the training course had offered to them and the workplace experiences gained before and throughout the training period, the validation consequently comprised formal, non-formal and informal learning. Because of the fact that the process operators in question had to take an additional exam in order to obtain ECTS points, which is the major procedure for accreditation of any form of learning in the formal education system, our interviews suggest that they were not straightforwardly enthusiastic.

This has partly to do with the nature of the training certificate issued to them. It contained few details and was therefore not very apt for use in other parts of the labour market. Our interviews indicate however that this did not worry the workers, nor have the trade unions intervened to widen the use of the certificates to more parts of the labour market. This did not seem to be a concern for the employers either.

These observations comply with what David Ashton (in Rainbird et al. 2004) reports from Denmark. There is a modest interest among Danish employees to have their competencies assessed and certified because they expect to stay with their employers. Ashton therefore concludes that there are no serious pressures from companies or employees to certify non-formal learning (p. 30). As we saw above, a similar but in this case an internal sectoral perspective, seems to prevail in Norway and can be observed in a great number of projects financed in the frame of the Competence Development Programme (E. Døving et al. 2005).

Alan Brown et al. report in Rainbird (2004) from the UK automotive and aerospace industries that the availability of a learner's portfolio of prior learning was important for the employees. This gave them:

> "...opportunities to experience new approaches to learning based upon collaboration and active reflection, with the consequence that participants were more likely to recognise that many of their skills were transferable and could be used in a variety of contexts" (p. 178).

The lack of details in training certificates issued for Norwegian process operators, and the absence of more extended learners' portfolio subsequent to this training, has partly to do with the labour markets to which the workers belong. Many plants are exposed to so little competition from neighbouring factories that they more or less constitute closed labour markets. Consequently, there was no logical next step to develop the course certificate into any portfolio with significance for a larger labour market. Among the workers interviewed such a step was not deemed necessary, neither did employers show much interest in the elaboration of specified course certificates.

At a branch level as well at a national level, individual portfolios (or certificates appraising prior learning) were an important part of the Lifelong Learning reform launched in 1999. However, their dissemination was postponed and various evaluation methods have existed in parallel, without converging into any national standard (cf. S. Skule, O.B. Ure 2004). A recent development is however a 'competence card' mapping an individual's professional skills such as branch knowledge, work methods and responsibilities in addition to personal skills. It is too early to assess whether this card will have major effects in the Norwegian labour market (cf. OECD 2007).

In relation to box 1 at the beginning of this paper the discussion above confirms the hypothesis that the translation of learning outcomes particularly highlights individual aspects of learning, like the resulting individual learning portfolio or a learning certificate, although the learning processes can be situated in a collective context, e.g. shaped as training support for a group of learners (cf. the projects discussed above).

Transfer and dissemination of learning experiences in Norwegian and European projects

Turning to the transfer of learning experiences, this slowly became a central aim in the Norwegian Competence Development Programme in which the process industry projects referred to above were inscribed. In the frame of the EU education and training policy 'dissemination' and 'exploitation' are now systematically covered as part of the 'valorisation' strategy of the

European Commission[3]. Inspired from the EC glossary of terms[4], the two key terms for transfer of learning experiences can be presented as follows:

- *Dissemination* is a planned process of providing information to key actors on the quality, relevance and effectiveness of the results of projects and programmes. It occurs as and when the results of projects and programmes become available.
- *Exploitation* partly consists of convincing individual end-users to adopt and/or apply the results of projects and programmes.

According to the *in itinerere* evaluation of the Norwegian Competence Development Programme, the latter started as a mobilisation of WT but soon faced the challenge of disseminating and exploiting project results.

A central idea in the Norwegian Lifelong Learning programme was that the social partners could be vehicles in disseminating project results. This proved however to be very optimistic because it was difficult to mobilise the lower echelons in employers' and employees' organisations (cf. Ure, Teige 2003; J. Payne 2005). After an initial enthusiasm the national 'Competence Reform', which underpinned the 'Competence Development Programme', lost its grips and did not evolve into any rank-and-file reform (cf. Teige 2004).

Interviews made for the programme evaluation show that dissemination of results was a minor concern in the experimental projects launched during the first years of the 'Competence Development Programme' running from 2000-2006. By hindsight, a first step could have been to pay attention to dissemination and exploitation at an early stage of the projects by, at least, planning what to do with the project results (Døving et al. 2004).

This diagnosis is similar to what can be read in the evaluation of the first phase of the EU programme for vocational training, Leonardo da Vinci (cf. EC; 2000). Subsequent evaluations of European training programmes also demonstrate that dissemination and exploitation of project results has to be supported because such 'valorisation' does not appear as natural by-products from learning partnerships.

While explaining more closely the meaning of 'exploitation', the European Commission glossary of terms refers to the need to:

- develop mechanisms to make results more attractive for use to the target group in question
- tailor the results to the needs of specific target groups, sectors or organisations
- transfer results that could be used by new target groups or sectors
- sustain results and keep them in use and existence
- influence and change mainstream practice and policy

When calling on "target groups, sectors and organisations" during the process of exploitation, a panoply of *collective actors* is brought into the picture. This indicates that the *transfer and dissemination of learning experiences* is more related to processes at project and programme level than during the *translation of learning outcomes.* The latter tends to centre on experiences gained by the individual learner.

[3] http://ec.europa.eu/dgs/education_culture/valorisation/index_en.html

[4] http://ec.europa.eu/dgs/education_culture/valorisation/doc/glossary_en.pdf

In the Norwegian training projects reported above the interaction between WT and CT seems to be linked to a combination of collective and individual aspects of learning, as we saw above in Box 2 illustrating a hierarchy of how the workplace is being used for learning purposes.

Implications for theory and policy in vocational education and training

In an attempt to contribute to theoretical frameworks for workplace training (WT) and classroom training (CT), we have in this paper investigated whether these two learning environments can be better understood when the *transfer of learning experiences* is linked to the concepts *dissemination and exploitation*. At the same time, we have discussed whether interactions between WT and CT can be clarified when the *translation of learning outcomes* is seen together with the *validation (and accreditation)* of formal, non-formal and informal learning.

As far as vocational education and training theory is concerned, one conclusion is that the distinction between two 'tracks' for interactions between WT and CT, one for transfer of learning experiences and a second for translation of learning outcomes, is helpful when analysing training arrangements encompassing formal, non-formal (and even informal) learning. Also, it is plausible to relate the *transfer* process more to collective dimensions and the *translation* process to individual aspects of learning. This distinction is however not clear-cut because both processes have some individual *and* collective attributes.

The notion of *work process knowledge* is useful in bridging the terms learning, education and training. It is a conceptual tool for capturing formal, non-formal and informal dimensions of learning as well as collective and individual dimensions.

One final consideration on Vocational Education and Training theory refers back to our hierarchy of how the workplace is being used for learning purposes. Such a hierarchy can provide some references to the strength of the interaction between CT and WT. At the same time, it can serve as a framework for assessing the interaction between structured training arrangements and more unstructured learning processes in work organisations. By this means, the outlined hierarchy falls in line with the notion of work process knowledge.

Moving on to Vocational Education and Training policy, one implication from our discussion of the Norwegian Competence Development Programme and efforts of the European Commission in *valorising* training projects is that a sound dissemination and exploitation of learning experiences will better benefit learners when training arrangements depend on a close interaction between WT and CT. This interaction can be stimulated through the translation of learning outcomes into a form that accreditation agencies can assess.

Secondly, it seems important that stakeholder groups are sufficiently involved in bringing forward and transferring learning experiences into new contexts. Individual employees were not key actors in pushing forward validation of prior learning in the Norwegian process plants under scrutiny in this paper. Neither did we observe that trade unions were strongly involved in this work. Taking the Norwegian social partners as an example, it seems that a thorough mobilisation of employers' and employees' representatives at all organisational levels (particularly the lower echelons) could have contributed to a more successful transfer of learning experiences and project results into new contexts.

One further implication for vocational training policy is to spur forms of interaction between WT and CT by means of *validating* WT and thus non-formal and informal competencies. The involvement of stakeholder groups in this process is vital in terms of transferring results from training projects into new contexts, in other words during the process of dissemination and exploitation, cf. the notion of '*valorisation*'. Hence, the two notions 'validation' and 'valorisation' in European vocational training policy come closer.

List of abbreviations

CT: Classroom Training
ECTS: European Credit Transfer System (in higher education)
LLL: Lifelong Learning
VET: Vocational Education and Training
WPL: Work Process Learning
WT: Workplace Training

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«Learning is too important to be left to…»

Schematically but with a scent of truth, learning and work used to belong in separate categories. In an attempt to understand learning at work, warnings are issued that learning is too important to be left to educational institutions and in-house training departments. Summarising findings from training projects in Norwegian process industries and sharpened by comments from fellows at the 2006 European Conference on Educational Research, this paper discusses interactions between learning environments in Vocational Education and Training. It places the findings within the theoretical discourse on learning&work and closes with some implications for policies in Vocational Education and Training, notably in terms of validating prior learning experiences. In addition, some implications for policies on disseminating and transferring experiences from training projects are outlined.

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