Chapter 7
A Renaissance for Apprenticeship Learning and Its Implications for Transition Countries

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Introduction

In Claudio Magris' 'Danube', a central European tradition in the social organisation of society is described. He tells about a Danube bed tradition, where the German apprenticeship system has set its imprint on countries along the road to the Black Sea, inspired by the German 'Handwerker' tradition and its institutions being brought along in the 'Ulmer Schachtel' transporting the German settlers down the Danube. It is based on apprenticeship, social partnership in the form of the guilds, and strong social status and professional pride of competent skilled workers.

In the Straight Street in Damascus, there is an exquisite shop and workshop producing fine handicrafts in wood with an owner/master craftsman who has become very rich. In a shabby side street, there is a very small shop with a poor and bitter craftsman who was an apprentice in the fine workshop for 8 years with next to no salary and now unable to compete.

In Riga, the two most beautiful and proud buildings are the houses of the *Kaufmänner* and the *Handwerker*, built in the Middle Ages by the German guilds in a country where before no native Latvians were allowed to work with bricks, were forbidden to enter an apprenticeship and only allowed to stay at night on the Riga side of the Daugava in case of fire.

Examples like these illuminate that learning organised as apprenticeship depends historically and culturally on a self-regulated social organisation. It must be built on strong social partnership with recognised and fair access, willingness of companies to participate, approved work contents in terms of technology and job construction and statutory time servicing requirements. Relations between

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training and employment are formalised through collective agreements. In short, it must be based on a contractual arrangement.[1] These conditions are not easy to establish in countries in transition. In Slovenia, a former Yugoslav country with an Austrian inspired VET tradition, although many structural components are at hand, recent history has demonstrated that a new model of apprenticeship could not be implemented because companies are not willing to provide placements. In FYR Macedonia, also a former Yugoslav country but without the Austrian VET tradition, the German financed GTZ reform of 3-year VET programmes in 8 schools requiring work placements on the German dual model have completely crowded out available placements. In many transition countries, attempts to develop 'partnerships' between schools and companies have remained isolated because of the weakness of collective organisation by employers as well as a low commitment of trade unions. Up to now, they have not led to a collectively organised participation of employers and unions in the reform and provision of VET for young people.

These realities make it difficult to introduce apprenticeship systems in transition countries. All countries are faced with the same challenge: a severe crisis in the relationship between education and economic systems. Imbalances bear witness to flaws in the articulation of these systems: a gradual rise in youth employment, paradoxically associated with recruitment difficulties for companies; problems of transition, affecting even highly qualified young people; the doubt about the value of diploma and certificates in relation to recruitment and access to employment; the fact that certification is not suited to actual company needs; and so forth.

On the backdrop of these challenges, the learning opportunities of work-based learning are so rich, also if lifelong learning is ever to become a reality, that we must try to devise concepts and test models which tap into such learning arenas also in VET reform strategies in ETF partner countries. This chapter will first argue that there is a need to rebalance the contemporary emphasis on learning outcomes and again set focus on how people actually learn. Then discuss the new interest for practice learning and resources in the learning landscape, sometimes termed as a 'renaissance' for apprenticeship. And finally draw some lessons for a possible new, open VET architecture in countries in transition based on the analysis carried out.

Research Problem and Methodology

This chapter, which builds on a wealth of empirical analyses on work-based learning, (Nielsen and Kvale 2003) reflects on challenges experienced in transition countries and logical reasoning, analyses the learning potentials in 'external'

[1]This requirement goes both ways. The Syrian example shows that unregulated apprenticeships can result in exploitation. In Denmark, from 1905 all new apprentices had to hand in their contracts to the local head of police to ensure that they did not run away as soon as they had learned enough. The ´apprenticeship investment calculation is based on a duration of time which balances the initial costs with later profits for companies.

working life contexts and does not go into discussions on 'internal' learning processes of the individual. During the last years, a renewed interest in aspects of the traditional apprenticeship form of learning organisation has been noticeable in learning process research (see for instance Ainley and Rainbird 1999). Learning theory has been concentrating too much on the formal aspects of learning and has been studied as processes 'inside' the individual while neglecting the social practice in which learning takes place. Technological and work organisation developments have sharpened the focus on the needs for personal and general qualifications (or key competences). As these new competences cannot be developed in isolation from technical or vocational skills, there is a growing research interest in understanding how learning in the workplace takes place, how to create conditions which facilitate learning at work and to analyse and explain how workplaces can be understood as collectives that learn. Social constructivist learning theory has contributed to such analyses that perceive learning as closely intertwined with social practice.

A key perspective for this research interest has been the conceptualisation developed some years ago in an OECD study (OECD 1998). In this approach, education and training is, with a topological metaphor, described as a 'learning landscape'. A landscape of learning possibilities where the learner has options and where it is therefore possible to establish an individual 'pathway' in the form of a personal training plan. This is different from the previous idea that courses of education consist of a few standard programmes, the same for all and with students divided into classes following each other and learning at the same pace. This pragmatic view has its emphasis on social practice and situated learning and points towards the possibilities for learning that exist in participating in a community of practice at a workplace. The prevailing tendency to scholastic learning in VET has impaired the possibilities for students to take a walk in precisely *the* learning landscape where they are supposed to function professionally after the education. The new focus for educational research on learning should thus be on conditions, environments, contexts and practices in place of a continued research interest on assumptions and theories of individual psychological processes.

Changing Frameworks (NQF) or Changing Actors?

Learning processes in whatever form have been relatively neglected in VET policy and research in the last decade. How we actually learn has often been perceived as a 'black-box' phenomenon, while the policy focus has been set on standards and assessments of predefined outcomes.

In Anglo-Saxon countries, the development of initial vocational training took the form of school-based alternatives to academic education. In the United States Community Colleges (at post-secondary level) were established. Vocational training in the UK was developed through the expansion of Further Education Colleges (at post-secondary level) and the development of a comprehensive national qualification system (NVQ, GNVQ). The Anglo-Saxon strategy for qualifications frameworks have dominated the VET reforms in transition countries in the past

decade with the emphasis being put on defining standards and through assessments measuring performance against these defined standards, while learning processes have been neglected.

A national qualifications framework (NQF) is a framework that links existing qualifications of different levels and types in a coherent and consistent way based on a common and agreed set of descriptors of qualifications and criteria for deciding on level and type. Because of their nature, they can provide greater transparency of what qualifications mean and they can offer a way of developing learning pathways that people can follow throughout their lifetime. Thus, they are potentially of great interest to everybody who is involved in education and training: policymakers and administrators, employers, teachers and other practitioners and of course also students and their parents. When representatives of these stakeholder groups are involved in developing a NQF, this will also lead to improve their trust in single qualifications and hence increase the attractiveness of vocational education and training. It is no surprise therefore that many countries are currently engaged in discussions about developing NQFs.

The shift from education-based standards to learning outcomes has had many advantages. Among these is a growing understanding that learning outcomes can be achieved in different ways and not necessarily only through standardised formal schooling. Recognition of prior learning and assessment of non- and informal learning have therefore moved up on agendas in many countries. Not least due to the fact that this also supported the search for greater cost-effectiveness and efficiency. Learning outcomes make it possible to align different levels of qualification better and also greatly facilitate communication between the world of education and the world of work. Qualifications are a kind of currency on the labour market.

However, there is considerable discussion about which kinds of learning outcomes are relevant for modern education and employment, and there is a growing understanding that traditional concepts of knowledge and skills are no longer appropriate. Initial attempts for developing national frameworks have very much built on the behaviourist approaches for defining learning outcomes: graduates should prove that they are able to do what is required in various *predefined tasks*. For a long time, learning outcomes referred basically to a set of separate knowledge packages or skills. Later, it was realised that even when people have the required knowledge and skills, they may still have inappropriate attitudes for the work they have to do.[2] The current discussion about competences is all about these issues. But the emphasis is now on the capacity to integrate skills, knowledge and attitudes in the application of learning for solving *work problems in unexpected situations*. Obviously, this is quite a different approach to what students should be able to do as a result of learning. But it reflects fundamental changes in employment systems and work organisations where lifelong employment, job security and standardised

[2]Especially in the service sector of course (the classical example is that of the waiter) but with the introduction of the market also, the importance of the customer in other sectors has increased, including in education and training.

production and services have been replaced by high levels of uncertainty, flexible forms of production and continuous innovation and change of products and services.

In several countries, however, the shift towards learning outcomes has perhaps gone too far and has even led to the belief that it really does not matter at all how people arrive at certain learning outcomes. Assessment of learning outcomes has thus tended to replace education and training as a learning process. Investment in assessment procedures and structures has gone up at the cost of investment in education facilities and preparing teachers. There is increasing concern about this trend, especially given the understanding that exactly what people used to learn at school and the way how they are learning may no longer be appropriate.[3] Rapidly changing and unstable labour markets may ask for new kinds of (key or core) competences with the help of which people will be able to cope with increasing uncertainties in their environments. Lifetime jobs or stable long-term employment no longer is the realistic perspective for the majority of the younger generations. Lifelong employment has been replaced by lifelong learning and employability has long become a risk and a challenge.

Thus, it is increasingly understood that it really does matter how people arrive or not arrive at certain qualifications. Learning is not something that is the same for everybody and can therefore not be completely standardised, nor does it occur automatically in the same way for everybody and certainly not because of the availability of recognised qualifications. As a result, there is a growing interest in many countries – also at the policy level – to pay more attention to the quality of learning processes. The key issue is that attention to learner needs and to quality learning processes is back on stage again and not only with the purpose to satisfy current labour market needs.

The 'Renaissance' of Apprenticeship

Most educational research is based on learning as a deliberate and reflected process, while work-based learning takes place as an (unintended) side effect running in parallel with undertaking work processes. Learning in a practice context is related to the survival of a company; in principle, it is intertwined with solving given tasks in a production process where the learner is part of a community of practice. Learning is situated: the point-of-departure is the workplace community of practice and the learner's learning process is subsumed under this. The learner or the apprentice is placed in a multigenerational environment and is continuously confronted with a multitude of various experiences and competences. In this perspective, learning

[3]Replacing an emphasis on learning by assessment is obviously easier when learning is about separate pieces of knowledge and skills and more complicated when a broader concept of learning and competence exists. See for this discussion also the distinction between two major education and training scenarios in Europe by Felix Rauner (2007).

is intrinsically linked to the process through which the learner changes his/her participation from a peripheral taking part in a community of practice to becoming a responsible participant.

This domain constitutes a different learning space with other learning and evaluation forms than those found in schools. In companies, the primary aim is production and services, and learning is an additional gain from taking part in a joint production process.

A discussion is currently ongoing on a 'renaissance' of apprenticeship as a contemporary learning form relevant e.g. in IT-based changes on work organisation (Winther and Taylor 1996). Richard Sennett (2008) argues that we now have to find back to the intrinsic values of the traditional way of qualifying skilled workers and ensure that skills are given the necessary time to develop, that skills are learned in a social context and that the training of the competent skilled worker is based on exercise, exercise, exercise – 'the golden rule is 10,000 hours', he states. Giving historical examples from the violin builders in Cremona and onwards (another example could be the proud buildings in Riga mentioned above), he argues that also today a doctor of medicine, a carpenter, an artist are all craftsmen being busy all the time with making details of their work still more perfect. Modern labour markets on the other hand function by an extreme flexibility, hire and fire policies, outsourcing, splitting of the intelligence of head and hands and reducing the time needed to create the autonomy of the good craftsman. The fundamental challenge is to understand how to become a good craftsman. In the modern world, craft has been reduced to pure measurable technical skills and vague competencies, but this is not at all what genuine craftsmanship is about. Craftsmanship is about continuously finding new and refined ways to make things function and to learn from what does not function well.

This perspective on learning is not new. In the *Nichomachean Ethics* (Aristoteles 1995), Aristoteles analyses the qualitative difference between theoretical (*episteme* and *teoria*) and practical knowledge (*techne* and ph*ronesis*),[4] and he emphasises again and again that except from the study of mathematics, metaphysics and other theoretical fields, we learn best by doing what we are to learn in exactly the situation where what is learned is to be applied. We become good carpenters by building a house, good doctors by curing patients and good musicians by playing the instrument. Aristoteles' argument is that we learn the skills we need by doing the activities we are to master. In this perspective on knowledge and learning, practice is not perceived as a mechanical area to be enlightened by theoretical school knowledge. Practice as a learning arena possesses its own knowledge forms with specific and adequate learning acquiring forms.

The new renaissance discourse is not really a renaissance of the classical apprenticeship model as such (although in Aristotelian times, this was probably the prevailing model). Apprenticeship is still the essence of VET in its dual form

[4]For an in-depth analysis of the theory-practice knowledge conceptualiation in Aristoteles, see Saugstad (2002).

in countries from Switzerland to Norway, where most of the learning takes place based on a contract between the apprentice and a company and where the apprentice receives a salary for his contribution to the production. The 'renaissance' is partly based on the fact that educational science has become aware of apprenticeship as an attractive form of learning and partly on the modern changes in working life which leads to expectations of learning 'in practice' at the workplace. In recent years, there has been a considerable theoretical and conceptual development based on studies of different work-based learning forms. This development is obviously of great relevance for VET.

In Denmark, for instance, alternance-based VET programmes represent a modernised form of the traditional apprenticeship training with roots back in the Middle Ages. In recent years, changes in working life, economic life and culture have created new competence and qualification needs. Now, greater emphasis is laid on flexibility and core competences, and ability and motivation to learn; this also means an increased emphasis on (self-guided) learning rather than on teaching. It is against these major societal changes that apprenticeship or work-based learning has again come into focus as part of the development of the new learning concept, e.g. in new concepts such as 'the learning organisation', 'lifelong learning', learning in 'communities of practice', 'situated learning', 'legitimate peripheral participation' and 'the reflective practitioner'.

Research Findings

The argument developed here is that a careful analysis of learning potentials in the learning landscapes of work can give guidelines for VET reforms in EU as well as in transition countries. There are in fact two discourses intertwined here. We cannot just jump from the learning landscape thinking in advanced countries and try to implement such a model in transition countries, where VET is almost everywhere school-based.

However, we can in any country start to analyse company training and VET school education as separate learning arenas and argue – based on Aristoteles' (1995) understanding of knowledge and learning – that many problems inherent in the school-company interplay are caused by the fact that these two learning landscapes are fundamentally organised very differently. Therefore, the effective and strong dimensions of learning organised based on a 'production logic' are worthwhile developing. VET school education cannot deliver all competences needed for the labour market. Instead of the usual didactic efforts to streamline school-company interplays, the strong dimensions of each side should be further developed.

Craft, as Sennett sees it, belongs to the category of 'social capital' (Bourdieu 1992): knowledge and skills that are accumulated and passed on through social interaction, and which are easily lost when social customs change. Social capital

of this kind is an example of what Michael Polanyi called 'tacid knowledge': knowledge that exists in a social practice, but is not detachable from it, like the knowledge of the human heart that is contained in the practice of good manners. Such knowledge confers authority on the person who possesses it.

An analysis (Kvale and Nielsen 2003) of different types of learning alternating between schools and companies sum up the strengths of school and company learning, respectively:

It becomes clear that learning in this perspective is much broader than today's scholastification where learning is primarily connected with theoretical studies. Learning is also related to development of a vocational identity, acquiring of responsibility, coping with (also routine) work tasks as they come and broader socialisation both in broader terms as well as to the concrete workplace layout and tools/machine systems. First and foremost, learning concerns how to become a specific type of person, a carpenter, a baker, an electrician, etc. Schools are good at providing 'spectator' skills while companies are good at providing 'participant' skills. Both learning arenas are needed.

Workplace learning processes are often relatively invisible. Carrying out a work task is often perceived as doing a daily routine without being associated with any learning. Imitation of others and the identification with more experienced practitioners in the community take place without having been deliberately intended or planned. Dreyfus and Dreyfus (1986) have underlined the importance of such routines and repetitions for the ability of practitioners to act flexibly in complex situations. Creative forms of learning are not enough; reproductive learning forms are important also today if an apprentice is to be able to perform complex work tasks.

It is a paradox that workplace learning, often involving to get up early in the morning to carry out tedious manual work with a risk to get harsh reprimands, is highly preferred by apprentices in dual VET systems compared to the immediately much more comfortable school-class learning where one can sit comfortably in one's chair listening to the teacher talking in a nonthreatening atmosphere. There is consequently also a strong student motivational reason why VET systems in transition countries could capitalise on learning from dual VET systems.

The learning topographical approach and flexible organisation, which individualise learning pathways, have important implications for the design of the 'didactical room', a widening of which could probably be a first step in transition countries. The concept of a 'didactical room' implies openness towards alternative possibilities of organisation and design of programmes that are innovative compared to the traditional school from the days of industrialism.

A new strategy for VET reform in transition countries could therefore focus on reorganising the school workshops with local employer support, as a next step towards bringing the renaissance of apprenticeship and the landscape of learning thinking forward. Cornerstones for such initial and not too costly reform initiatives could be the following.

In many transition countries, VET is organised in subjects; the contents and goals of basic technological subjects are mostly described by the basic laws of the natural sciences in their relation to basic technology. This is not useful for the labour market. The technological descriptions of the functions and structures of basic machinery often miss the relevance to modern technological systems.

In most cases, students have a week- or month-long practice in a company. This practice is not sufficient to understand the world of labour, but it could be very helpful to analyse its organisation and to transfer good practice into school workshops.

Between schools and local companies, there often exists a traditional network. This network is based on individual contacts between directors of schools and companies or between teachers and local companies to get jobs for students. Societal institutions only die slowly, and there are some opportunities to re-establish links with the companies, of special importance is to widen networks to include small- and medium-sized companies.

There is a sharp division between theory and practice, between classroom and workshop and between VET teacher and trainer functions. But this division is more harmful to students' competencies than the reduction of practical experience if teachers, trainers and students do not learn to combine technological theory and the labour process with the actual functioning of machines and tools. What is needed in most transition countries is a new configuration of teaching, learning and practical work exercises.

What VET Schools Can Give Students/Apprentices

- Broad introduction to general knowledge in a vocation
- Time for reflection and deeper studies of a profession
- Time and space for explanations
- Reflection on work experiences of apprentices
- Maintenance of marginal techniques and skills within a vocation

What Companies Can Give Students/Apprentices

- Training of routines and a 'feel' of the profession
- Genuine responsibility for production
- Vocational role models
- Highly specialised skills and knowledge about front-edge technological change
- Establishment of vocational/professional networks

Conclusions for VET Research and Practice

Based on the analysis above, this chapter draws two lessons for establishing guidelines towards a more open VET architecture in countries in transition and one conclusion related to a new and rich research field for VET.

Pragmatic guidelines for a more open VET architecture in transition countries:

1. Learning inspired by the actual developments of learning theory and the 'renaissance' of apprenticeship can be organised in learning arrangements in countries of transition in VET school workshops enabling the work-based or logic of production approach to be operationalised in practice. This is the most realistic innovation strategy for most transition countries.
2. Re-establishing apprenticeship in ETF partner countries in a modernised form of the classically regulated tradition of the guilds will require fundamental organisational and societal changes to avoid the obstacles mentioned in the three cases which introduced this chapter. Components of the apprenticeship system in modernised forms could be a potential strategy and would probably profit more from contemporary examples of modern apprenticeship in countries like Finland and the UK[5] not bound by the burden of long cultural and historical lines. Such reforms would have a positive impact on education system transition and transmission and is therefore worthwhile to invest in.

Intensified VET research on the landscape of work-based learning:

3. In the domains of educational and psychological research on learning, the learning resources existing within working life have only been scarcely researched. Educational science is mostly targeted at organisation of teaching and learning arrangements in schools, and psychological research has focused on individual learning processes. Learning theory has been preoccupied with finding universal laws on learning and with formulation of theoretical models for learning. The multifarious aspects embedded in the concrete situations where learning takes place have only been cursorily studied. When researchers have had only a limited interest in the ecological resources in the landscape of learning, one explanation is undoubtedly that pedagogical and psychological learning research for a long time has been dominated by rigorous demands on experimental design and quantification.[6] Interviews with participants in communities of practice and qualitative observations from their practical work contexts, which may open up for a coherent understanding of learning, have been perceived as not really important.

[5] See for instance the initiative 'An Apprenticeship' which was formed to offer a unique reference point on advice on being or employing an apprentice. http://www.anapprenticeship.co.uk

[6] Maybe it has become too 'evidence-based'?

The empirical study of learning resources and barriers in work-based learning must be upgraded. It is necessary to question the more formalistic concept of learning based only on schooling that dominates the educational research and discourse. By describing, conceptualising and comparing nonformal learning forms, a systematic research effort on practice learning may contribute to deeper and overarching reflections on the rich learning resources offered in work-based learning. A new research agenda should tone down the focus on the individual learner and concentrate on studies of resources for learning which are found in workplaces and in communities of practice. The concept of the 'learning landscape' (Nielsen and Kvale 2003) may serve as a spatial metaphor for the practical and concrete understanding of the workplace: the workshop layout, work tools, machine systems, work organisation, etc.

The knowledge accumulated by this research interest will not least be of particular importance for the competence development of trainers in VET. They will probably acquire an increased role in organising learning processes and environments at the workplace. It is also important for the development of the substance and modalities of the 'renaissance of apprenticeship' (Nielsen 2009), an interest which appears to be observable in many countries.

References

Ainley, P., & Rainbird, H. (1999). *Apprenticeship: Towards a new paradigm of learning*. London: Kogan.

Aristoteles. (1995). *Nichomachean ethics* (Loeb Classical Library). Cambridge: Harvard University Press.

Bourdieu, P. (1992). *Outline of a theory of practice*. Cambridge: Cambridge University Press.

Dreyfus, H. L., & Dreyfus, S. E. (1986). *Mind over machine. The power of human intuition and expertise in the era of the computer.*. Glasgow: Basil Blackwell.

Nielsen, K., & Kvale, S. (Eds.). (2003). *Praktikkens Läringslandskab. At läre gennem arbejde*. Akademisk Forlag.

OECD. (1998). *Pathways and participation in vocational and technical education and training*. Paris: OECD.

Rauner, F. (2007). Vocational education and training – A European perspective. In A. Brown, S. Kirpal, & F. Rauner (Eds.), *Identities at work* (UNESCO-UNEVOC Book Series Technical and Vocational Education and Training, Vol. 5, pp. 115–145). Dordrecht: Springer.

Saugstad, T. (2002). Theory and practice in an Aristotelian perspective. *Scandinavian Journal of Educational Research, 46*, 373–390.

Winther, S. J., & Taylor, S. L. (1996). The role of IT in the transformation of work: A comparison of post-industrial, industrial and proto-industrial organization. *Information Systems Research, 7*, 5–21.

Sennett, R. (2008). *The craftsman*. New Haven: Yale University Press.

Kvale, S., & Nielsen, K. (2003). At läre et fag i vekselspillet mellem skole og virksomhed. In K. Nielsen & S. Kvale (Eds.), *Praktikkens Läringslandskab. At läre gennem arbejde.* Akademisk Forlag. København.

Nielsen, S. (2009). A renaissance for apprenticeship learning? – And its implications for transition countries. In F. Rauner et al. (Eds.), *Innovative apprenticeship. Promoting successful school-to-work transitions*. Berlin: Lit Verlag Mag. W. Hopf.