

Conference Proceedings

International Network on Innovative Apprenticeship

Situated Competence Development through Innovative Apprenticeships

The Role Of Different Stakeholders

Vienna, Austria

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Austrian Institute for Research on Vocational Training, *öibf* Bertelsmann Foundation, Gütersloh, Germany VETNET, European Association of Educational Research (EERA)

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Foreword

This conference, in Vienna on 1st-2nd February 2008, is an important international event in apprenticeship research.

Apprenticeships are institutions that have relevance, function and meaning in many ways - economically, socially and educationally. Because of the diversity of purposes, which apprenticeships serve, researchers operate within many different disciplines and have not previously operated as a coherent group.

There is an added difficulty in that apprenticeships operate guite differently in different countries and it has sometimes been difficult for researchers to understand each others' national systems. The 'International Network on Innovative Apprenticeship' (INAP) was founded by a group of international researchers that met at the University of Bremen in 2006 in order to discuss findings of a joint research project that started in 2005 looking at the relation between cost, benefits and guality of apprenticeships. INAP has subsequently drawn together researchers from a range of countries and discipline backgrounds in a research program and in an exchange of information and ideas. In the meantime INAP findings have been presented at different international and national conferences across the globe spanning from the annual convention of the Association for Public Policy Analysis and Management in Wisconsin, USA over the European Educational Research Associations' annual conference (ECER) in Ghent to the Australian Vocational Education Research Association (AVETRA). In addition a special edition of an international journal has been published containing contributions out of the scope of our joint network.1 This illustrates the global relevance of the topic despite all differences of the local realisation of apprenticeships institutional arrangement.

The group of researchers gathered together in Vienna for this conference represents 13 countries, and papers are in three main areas of interest:

Levels of governance and the role of stakeholders in apprenticeship

These papers deal with the political implications of apprenticeship as a means to countries' skill formation. Governmental institutions and agencies from the national to the local level undertake regulatory efforts and interventions to maintain and improve apprenticeships. Other stakeholders such as employer associations, trade unions and industry advisory bodies also have roles to play. The papers in this stream present analyses and critical reflections of the activities undertaken by governments and other stakeholders with a view to the improvement of apprenticeships.

¹ International perspectives on apprenticeship, Special Edition. Education & Training, 49, 2007, 3. Edited by Erica Smith and Philipp Grollmann.

Designing optimal conditions for competence development through workplace learning

These papers are concerned with the role of on-the-job training as a factor of competence development and with innovative approaches to the improvement of conditions for learning on the job. Workplace learning is the core of apprenticeship training, for although most apprenticeships involve off-the-job training as well, the majority of learning takes place on the job. Employers may create optimal conditions by attention to appropriate organisation of work processes as well as by attention to the training process itself. Papers in this stream report on research and/or theoretical work on optimal conditions for on-the-job learning.

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Costs, benefits and quality of apprenticeships

The literature on apprenticeship contains many arguments about the costs and benefits of apprenticeships to employers. Depending on the type of analysis used it can be argued that employers bear a net cost when employing apprentices, or alternatively that employers gain considerable benefits. These arguments are particularly important in countries where unemployment is high and employers need to be persuaded to employ apprentices. Moreover, training providers need to consider ways to maintain the quality of off-the-job training while keeping costs within reasonable limits. These papers add new arguments to these ongoing debates, on the basis of empirical research.

Researchers, practitioners and policy-makers will find much to interest them in this collection of papers.

INAP is grateful to the local organiser of this conference, the Austrian Institute for Vocational Education Research (ÖIBF) and for the support through Bertelsmann Foundation and the Vocational Education Research Network of the European Educational Research Association (VETNET).

We hope that we can continue this story of a gradual growth of this network and hope that we will have many opportunities like this for mutual exchange in the future.

Philipp Grollmann, Felix Rauner and Erica Smith



Welcome to Vienna!

On behalf of the Austrian Institute for Research on Vocational Training (öibf), one founding partner-organisation of the INAP-Network (www.innovative-apprenticeship.net), I express my best wishes for this conference on innovative apprenticeship in Vienna.

Öibf's mission is to carry out high-quality research and development in order to support and promote activities and policies concerning vocational education and training (VET). In our work we focus particularly on innovation in VET and the interrelation of education, training and the labour market. The öibf as a scientific, non-profit, independent research institute (founded in 1970), tried from its very beginning to be a platform for research on VET and to improve the international research linkage to the Austrian discussion in the academic field but also on political level. Therefore I feel honored to host the second INAP conference "Situated Competence Development Through Innovative Apprenticeships – The Role of Different Stakeholders" here in Vienna and to support the mission of the INAP-Network on the one hand and to bring a high level discussion platform on apprenticeship training to Vienna on the other one.

More than 40 (!) contributors, from various countries (Austria, Belgium, England, France, Germany, Hungary, Italy, Malaysia, Netherlands, Norway, Switzerland, USA, Wales) show, that workplace based training and apprenticeship is a worldwide relevent research field. Looking at the impressing list of conributors, involved in academic research as well as in policy studies, I am sure this conference will not miss its aim to be an important international event in apprenticeship research.

I would like to thank all members of the programme committee, the contributors and last but not least the technical assitance in ITB and öibf who made this conference possible and wish all participants a successful and fruitfull conference.

Peter Schlögl Managing Director Austrian Institute for Research on Vocational Training <u>www.oeibf.at</u>



Preface

Youth and Work: Activities of the Bertelsmann Foundation

For most young people, entering the world of work is a symbolic division between being a child and becoming an adult. Often, choosing a certain profession or area of study is accompanied by a loosening of ties to parents and home, while a cornerstone is laid for achieving life goals, wide-ranging independence and personal freedom. For this reason alone, adolescents must be given the opportunity to pursue vocational trainings or studies leading to professional qualification. Those who do not make the transition to the world of higher education and work find their futures at risk.

One significant problem is that a growing number of young people are having difficulty taking the critical step into the world of work or are denied the opportunity completely. The social and economic costs resulting from this trend are enormous and do not just affect isolated individuals in their personal development. Instead, a high level of youth unemployment is making itself felt as a general societal problem and represents a considerable burden for numerous national economic systems and their development. Integrating young people into professional life and according them the feeling that they are indeed needed must be seen as a critical social and economic goal.

Youth entrepreneurship and career orientation

Young people need opportunities for personal development in order to enter and integrate successfully into the workforce. Independence, decision-making abilities, social skills, openness to change, a willingness to take charge and initiative – these are some of the qualities and talents they must acquire before starting their professional careers. In addition, they must learn to realistically assess their own strengths and weaknesses and to become acquainted with the possibilities and realities of the world of work.

- Initiatives and programs like student-run businesses can help to develop these types of skills. The Bertelsmann Stiftung is studying ways to foster entrepreneurship education.
- The foundation has therefore developed a **Youth Entrepreneurship Barometer**, which empirically collects and evaluates attitudes and preferences towards entrepreneurship and business among the young.
- The Bertelsmann Stiftung has already been active in the area of a systematically improvement of schools' career orientation offerings through its "Netzwerk Berufswahl-SIEGEL" (Network for Career Advising Seal of Approval) project, and is now developing Guidelines for Career Orientation in schools.



Project Youth and Work



Transition management and training modernization

New ways must also be found outside of schools to help less-qualified young people enter the workforce. Programs facilitating the transition from school to work need to be restructured, and the entire vocational training system must be made more flexible.

A vast number of public and private agents and institutions already support the transition from school to work – with varying degrees of success. Therefore the Bertelsmann Stiftung has developed **Guidelines for Transition Management** by systematizing these services and by developing a set of metrics for establishing regional approaches to managing the school-to-work transition. The findings will serve as a guideline for regional and transregional implementation.

In the area of modernizing vocational training the Bertelsmann Stiftung aims to identify new **Pathways for Youth at Risk** to participate in vocational training and to contribute to the process of reforming the dual system of vocational training in Germany. In this context, we are assessing **Institutional Structures** and **Monetary Implications** of vocational training and we support an **International Dialogue** of experts. That is why we are glad to support the 2008 INAP conference and we hope that the participants will provide a valuable contribution to the further development of vocational training.

Clemens Wieland Bertelsmann Foundation



VETNET address at the INAP conference

On behalf of VETNET Network for European Research on Vocational Education and Training I express my best wishes for the second INAP conference on innovative apprenticeship. There are many reasons for VETNET to support the INAP initiative. This becomes clear when I describe what VETNET is doing and what it wishes to achieve.

VETNET, as we know, is the European umbrella network for research in Vocational Education and Training, under the auspices of the European Education Research Association (EERA). Over ten years the network has provided an open platform for researchers representing different approaches. These include vocational pedagogy as well as research on workplace learning, career development and occupational identities. (The broad variety of contributions and the gallery of research topics have been documented in the VETNET Proceedings, see www.ecervetnet.wifo-gate.org.)

Currently the VETNET papers and sessions are grouped in seven thematic fields:

- Globalisation, VET Systems and Innovation
- Accreditation, Qualifications and Frameworks
- Work Based Learning, Apprenticeship and Re-Training
- Professionalisation, Competence Development and Life Long Learning
- Boundary Crossing, Transitions and Transfers
- Curriculum, Pedagogy and Learning Resources (including E-Learning)
- Cultural Diversity, Learners and VET.

The contributors to VETNET network have been involved in academic research as well as in policy studies. The contributions involve often *cross-cultural comparisons* between different VET systems and cultures. Special emphasis has been given on current developments in *working life* and in the *labour markets*, including training for *diverse target groups*. Other areas of interest have been the *evaluation of training measures* in different contexts. This has been closely related to analyses on *training and career development*. Finally, a major a area of interest has been the *development of curricula and learning environments* within VET.

The functions of VETNET are to promote research cooperation in the European research area and beyond. As one of the networks of EERA, the VETNET supports the preparation and the implementation of the VETNET programme in the annual ECER conferences. Alongside this task VETNET is willing to support other European conferences and workshops with a focus on VET– like the one of the INAP network on innovative apprenticeships.

The Lisbon deceleration puts a clear emphasis on the role of VET, in order to equip people with more and better skills and competences that can be used in the labour market not only today but also in the future. VET is regarded as the intersection between educational, labour market and economic policy and is seen as "a means of up-skilling the workforce, changing work practice and as a motor of innovation. Governments see VET as a means of increasing competitiveness, employment and growth by securing the supply of skills to the economy" (Leney et al. 2005). In terms of its structure VET is different from country to country. The national VET systems seem to be deeply rooted in different economical and cultural traditions. This makes it important to develop such arenas help to understand the diversity and to promote innovations across different cultures.

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Among European policies for education and training we have experienced man shifts of emphasis. Underneath these shifting priorities these has an increasing interest to have a better understanding on the potentials of workplace learning. This has led to pilot activities and to initiatives to strengthen apprentice training and workplace learning partnerships.

Such measures support a learning culture that links systematic learning with practical learning. The shaping of work-based learning is being highlighted from different points of view. This is bringing us closer to a real understanding how innovations can be promoted across different education and training cultures and how cooperation between the learning venues can be enhanced with the help of networks and new media.

In this context I welcome the fact that the Inap network has managed to start a tradition of European conferences that focus on research on innovative apprenticeships. To the umbrella network VETNET it is clear that we need such arenas that broaden the basis of research and deepen the focus on innovations. I hope that this conference will deliver new insights into workplace learning and into apprenticeship-based training concepts.

Ludger Deitmer Convenor of VETNET





Keynotes





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Summary: In Australia approximately 3.5% of the working population is employed in apprenticeships and their newer counterparts traineeships (both of these are combined under the title of Australian Apprenticeships). While apprenticeships were originally intended for young school-leavers they are now open to people of all ages and to part-time as well as full-time workers. The huge growth in numbers, over 300% since the mid-1990s, has been the result of very conscious planning and financial investment by the Australian government. This paper, using data drawn from a series of research projects, analyses the different agencies that help to promote and manage the apprenticeship system. The paper points out both positive and negative effects of the large numbers of agencies involved.

Keywords: Agencies; funding; qualifications

Introduction

In Australia the institution of apprenticeship is currently very strong. This is in contrast to other countries such as the UK and Germany, where the institution has experienced difficulties because of economic recession and other reasons. Twenty years ago apprenticeships in Australia were confined to a defined number of occupations, mainly male manual workers, but the advent of traineeships (which are included with traditional apprenticeships under the broad umbrella term 'Australian apprenticeships') has expanded both the numbers of apprentices and the types of jobs which have contracted training associated with them. This 'success story' has been the product of very conscious planning by the federal government including the introduction of new agencies to promote apprenticeships and manage their quality. These agencies sit alongside pre-existing organisations and mechanisms at the federal and state level.

This paper uses the findings from some recent research projects undertaken by the author and colleagues during the past five years (Smith, Pickersgill, Smith & Rushbrook, 2005; Dumbrell & Smith, 2007; Hood, Fung, Smith, Bush & Ride, 2007; Smith, Comyn, Smith & Brennan Kemmis, in progress) to examine the role and function of the agencies that deal with apprenticeships in Australia. A critical approach will be taken: while the success of these agencies will be described, some problems will also be examined.



Overview of the Australian apprenticeship system

In Australia the apprenticeship system involving three or four year contracts of training in the traditional trades has existed since first settlement by Europeans. In 1985, short, one and two year traineeships (Kirby 1985) were introduced. Although Australian employers were slow to take up traineeships, the number of trainees rose guickly from 1995 as the federal government focused on marketing traineeships to employers. Traineeships expanded into many occupational areas that had not previously supported contacted training such as retail, tourism and hospitality (Robinson 2001). In 1997 the traditional apprenticeship and the traineeship systems were brought together under the umbrella of the New Apprenticeship, now called Australian Apprenticeship, system, although in common usage they are usually referred to separately (Dumbrell & Smith 2007). The numbers of Australian Apprenticeships escalated dramatically from about 120,000 in 1995 to over 400,000 by 2003, fuelled mainly by traineeship growth. Around 35 per cent are four-year apprentices in traditional trade areas whilst the remainder were trainees (NCVER 2004). The 'new' occupational areas tend to be where employment growth is occurring; the development of Training Packages – national sets of competency standards - for these occupational areas also stimulated growth. Completion rates remain high for traditional apprenticeships at about 75 per cent whilst traineeship completion rates are lower at about 55 per cent (Robinson 2001).

All apprenticeships and traineeships carry with them a formal qualification, usually at Certificate III level or higher. The curriculum for qualifications for apprenticeships and traineeships consists of units of competency taken from the sets of competency standards in national Training Packages (Smith & Keating 2003). In general, apprentices attend a TAFE college (Technical & Further Education – the public providers) or a private training provider for one day a week or in block periods, for two or three years. Trainees may also attend college in this way, but it is becoming increasingly common for trainees to be trained 100% on the job. However, even in the latter case a training provider (known as a Registered Training Organisation or RTO) must oversee the training and is responsible for the assessment and the award of the qualification. There is not usually any regulation associated with the on the job training provided by the employer.

The proportion of workers in Australian Apprenticeships represents 3.5 per cent of the working age population, one of the highest rates of contracted training in the developed world (Walters 2003). This favourable picture is in part related to the strong Australian economy, which has an unemployment rate of only about 4% and indeed in some geographical areas such as Western Australia and Queensland exhibiting a severe labour shortage. However the high proportion of workers in apprenticeships is also the result of very deliberate government policies over the past twenty years. These have included the widening of apprenticeship opportunities to part-time and to mature aged workers, and the availability of state government funding for off-the-job training by private RTOs as well as by the public provider, TAFE (Smith & Keating 2003). This process, whereby employers, in conjunction supposedly with the apprentice himself or herself, are able to select the RTO of their choice, is known as 'user choice'. The availability of such funds to private training providers has enabled massive expansion in areas such as retail and aged care, where TAFE would not have been able to meet the demand because TAFE colleges did not have departments dealing with these occupations. In addition to these

policies, the growth of new bodies to manage apprenticeships has been important and is the subject of this paper.

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Government bodies that look after apprenticeships

There are a number of regulatory arrangements associated with Australian apprenticeships. Contracts of training must be signed by employers, by employees (and by parents where the employees are aged under 18) and by the training provider (RTO). The contracts are registered with the State or Territory Training Authority. Employment incentives are supplied by the federal government on commencement and completion, and off-the-job training is funded by the State Training Authority. State Training Authorities and the federal government alike maintain regional and local offices where staff work to promote apprenticeships and. very importantly, to manage the quality of apprenticeships. Complaints from apprentices and sometimes their parents are handled by local offices of State Training Authorities. In addition to these long-established processes, apprenticeships are now promoted through school education systems (which in Australia are managed by state governments) because apprenticeships can be commenced on a part-time basis while students are still at school. Such arrangements have led to the establishment of new departments within State School Education Offices as well as to a large demand for school teachers that are gualified to teach vocational qualifications.

There have been a number of quality problems associated with the rapid growth of the apprenticeship and traineeship system in Australia (Schofield 1999). These have been partially addressed by new policies such as the introduction of the Australian Quality Training Framework (AQTF) which aims to ensure good quality training in TAFE and RTOs by regulating the registration of training providers and the delivery of training (Smith & Keating 2003). The AQTF is responsible for the quality of all vocational qualifications not just those associated with Australian apprenticeships. State Training Authorities are responsible for maintaining the AQTF within their states. Other initiatives introduced to address quality have included the weighting of employment incentives towards completion of apprenticeships.

In November 2007 the Howard Liberal government that had been in power for 11 years was voted out of office in favour of the Australian Labor Party led by Kevin Rudd. Under the Howard government VET was managed by the federal department DEST the Department of Education, Science and Training. Control over VET had been increasingly centralised under DEST; for example the Australia National Training Authority which had been in existence since 1994 overseeing the VET system (Smith & Keating 2003) was abolished in 2005 and its functions brought under DEST or bodies overseen by DEST. Under the new Rudd government VET is contained within a very large ministry (Department of Employment, Education and Workplace Relations or DEEWoR) that also includes employment and industrial relations. It is yet to be seen what this may mean for apprenticeships.

Funded agencies that look after apprenticeships

There are two sets of agencies that directly contribute to the apprentice system and a number of others that make an indirect contribution. The two direct contributors are group training organisations (GTOs) formerly known as group training companies (GTCs) and Australian Apprenticeship Centres (AACs) formerly known as New Apprenticeship Centres (NACs).

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Group training organisations act as employers of apprentices, 'leasing them out' to companies and thereby relieving companies both of the risk of taking on an apprentices for a lengthy period and of the paperwork associated with employing an apprentice (Dumbrell & Smith 2007). Most GTOs are not-for-profit and are often industry-based, specialising for example in construction or hospitality apprentices, but some are run as commercial operations. There are 180 GTOs in Australia and they receive government funding through the Joint Group Training Program scheme whereby funding is allocated primarily on the basis on numbers of apprenticeships and traineeships commenced and completed. A GTO, as the employer of the apprentice, also receives the normal government employment incentive. GTOs also receive payments from the host employers, but this is usually only just enough to cover the wages that GTOs pay to the apprentices. GTOs complain that the JGTP funding amount is insufficient to cover the large amount of activity they undertake; many employ specialised workers, for example, to handle welfare issues associated with their apprentices. JGTP funding is provided equally by federal and state governments, and around \$20m a year flows to GTOs through JGTP (Hood et. al. 2007).

Australian Apprenticeship Centres (AACs) are newer than GTOs and were set up in the mid-1990s to increase the number of people entering apprenticeships. AACs market apprenticeships to potential employers and apprentices, manage the signing-up process, and make sure that appropriate employment and completion incentives are paid. They also make employers aware of special incentives that may be available for employing apprentices from disadvantaged groups eg indigenous or disabled people. AACs are also expected to have a role in making sure that the employer-apprentice relationship proceeds smoothly and to report any problems to the appropriate authority, normally the local office of the State Training Authority. AACs are contracted by DEST (and now the new federal government department) to provide these services, with contracts running for a two-year period.

As well as these agencies, other agencies have some role in promoting apprenticeships. These are funded by either state or federal government and may also earn income through commercial activities. They include:

- RTOs. They have an interest in employers recruiting apprentices, because they can then access user choice funding by providing the training for the apprentices.
- Job network providers. These agencies provide an employment brokerage service (the former government employment service was privatised in the 1990s). Often they place their clients in jobs that include a contract of training.
- Industry skills councils (ISCs). There are ten national industry skills councils covering the range of Australian industry, and in some states there are state counterparts. An important part of their role is to promote apprenticeships and traineeships to industry because then there will be greater take-up of the Training Packages which ISCs oversee.

To confuse matters still further, any one organisation may be at one and the same time a GTO, an RTO, a Job Network provider and an AAC. This was the case, for example, in a rural organisation in Shepparton, Victoria, visited by the author as part of the Hood et. al. (2007) research study.

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From an employer's and an apprentice's viewpoint

An employer may receive approaches from any or all of the above agencies, trying to persuade him or her to recruit apprentices or trainees. The agencies will each describe the benefits available by recruiting apprentices, although AACs are the only bodies that are officially authorised to explain available benefits (Smith et. al. in progress). RTOs will generally approach enterprises only when they are trying to 'sell' contracts of training for large numbers of workers; for example RTOs may provide enterprises with details of the financial benefits that accrue from employment incentives if new and even existing workers are placed onto traineeships (Smith et. al. 2005). Employers will also see newspaper and television advertisements promoting apprenticeships, placed both by the government department DEST (now DEEWoR) and by local GTOs.

Would-be apprentices and their parents (if of an appropriate age) may receive advice from school (in the case of school-leavers), careers services, and employment service providers. They may also approach GTOs or may see vacancies in newspaper advertisements placed by GTOs. When an apprenticeship is gained, the AAC will manage the sign-up, but this may be the only involvement of the individual apprentice with the AAC. Should difficulties arise during the apprenticeship, the apprentice will seek assistance from the GTO if he/she is employed by a GTO, or from the State Training Authority's local or State office.

Functional and dysfunctional results of the crowded market

The sheer number of agencies funded to market and maintain the apprenticeships system indicates the importance attached to contracts of training by the Australian government. Apprenticeships and traineeships are seen as very important both to expand the skills of Australian workers and the skill base of companies, and to provide secure employment particularly for young people. The numbers of agencies operating to this end mean that few employers or individuals are unaware of opportunities. They also ensure that if an employer or individual is unhappy with the advice or services received from an agency there is usually an alternative. Employers may lean heavily on the appropriate agency for advice and assistance. For example the author learned during the Hood et. al. (2007) project of a major state electricity supply company that had abandoned its apprentice program and relied on a GTO to rebuild the program until it had the corporate knowledge to stand on its own feet again. The federal and state governments rely on information from the different agencies to gain a good picture of the operation of apprenticeships.

However there are some drawbacks. It is sometimes felt that employers become confused by the different approaches and are not sure which agencies have the ultimate authority. The executive office of the national AACs association mentioned this during an interview for the Smith et. al. (in progress) study. Moreover, because many agencies receive performance-based funding there is a perception that advice given to employers and to individuals may be biased. The agencies are naturally concerned to maximise or at least maintain their income, or their contract with the government, and their interests may not necessarily coincide with those of the employer or the apprentice. Agencies often complain that others are encroaching on their territory. For example, GTOs complain that AACs' role is expanding into areas that they traditionally used to service, for example counselling assistance and conflict management between employers and apprentices (Hood et. al. 2007).

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Where one organisation is funded to provide several functions, as in the Shepparton example, there is potential for conflict of interest. For example the Job Network section of the organisation would receive a payment should it place an unemployed client as a trainee with the GTO section of the organisation; the GTO section would receive an employment incentive, and could refer the trainee to the RTO section for his or her training, so that the RTO would receive the user choice funding. This way the organisation receives three slices of government funding, in addition to any extra payments should the client be, for example, indigenous. While there are formal processes in place to guard against conflict of interest, perceptions of unfairness persist. However from the client's point of view, the Shepparton example may be very helpful; for a person of low self-esteem it may be attractive to have to deal only with one organisation, and may therefore lead to a good employment and training outcome.

Conclusions

This brief paper has provided an overview of the bodies and agencies that help Australian people to find apprenticeships and employers to find apprentices. The story of the past twenty years is one of heavy investment by governments in the apprenticeship system. It may be argued that the investment has been excessive for the outcomes achieved and that from a public policy point of view there is a lot of 'deadweight' in the system. However the author's extensive research with the agencies described and with employers and apprentices indicates that there is a great deal of goodwill among most of the players and that employers and apprentices alike benefit from the intervention and monitoring undertaken by the various agencies. But there is some lack of clarity among users of the system about the relative roles of the different players. It now remains to be seen whether the new Labor government will maintain the current system or will introduce radical changes.

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Apprenticeship Systems in the German speaking Countries: Different logics and policies with respect to fulltime VET and Higher Education

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Summary: The focus of this paper is on the difference between the German, the Swiss and the Austrian apprenticeship systems and their linkages to other sub-systems, such as full-time VET and Higher Education. The paper picks up "matching problems" related to the philosophy of the European Qualifications Framework which implies a change of policy in terms of "missing links" between VET and Higher Education, but also within the VET system itself. One major aspect here is the institutional framework, including forms and practices of non-state intervention into the VET system and the responsibility of non-state institutions. The three countries differ in crucial areas which make them differently prepared for the EQF. Against the background of comparative aspects, the major perspective will be on Germany and its "reform potential".

Keywords: Apprenticeships, VET in schools, European Qualifications Framework, Higher Education

Introduction

Cultural patterns are still the major determining factors of "learning cultures" in the context of national VET systems and the respective policy strategies which enable them to change and adapt. Typologies VET systems normally distinguish institutions and steering mechanisms. However, behind these, cultural patterns underlie both the practice and the theory as well as the policy of VET (Harris & Deissinger 2003). Problems arise against this background when it comes to "harmonising" VET systems "through the backdoor". One of the current supranational instruments in this context is the European Qualifications Framework (EQF) based on the "Lisbon-Copenhagen Process" (Winterton 2005).

In Germany, the chamber system represents a cultural construction which, at first sight at least, seems incompatible with many European ideas accompanying the present "Lisbon-Brugge-Copenhagen Process" which demands the opening-up of education and VET in the context of concepts such as the "learning economy" or "lifelong learning". VET systems with a strong focus on initial training hereby obviously face the most serious challenges. Let alone its benefits as a comparatively well-working initial training system, the Dual System in Germany seems to be facing the most serious challenges and could learn from its two German-speaking neighbours when it comes to transition, permeability and inclusion. It may be

supposed that this primarily has to do with the social rooting of the apprenticeship system.

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Germany's Apprenticeship Culture

With its apprenticeship system, Germany is a country where "firms are distinguished by a very high proportion of the workforce having intermediate level qualifications" (Steedman 1998, p. 81). Unlike in the UK or France, where they form a marginal sector within the vocational training systems (Gospel 1995), dual apprenticeships exist in nearly all branches of the German economy including the professions and parts of the civil service.

The Dual System has the function of initial training for school leavers in a given range of "declared trades" or "recognised training occupations" (Deissinger 2001). Although the dualism of "learning sites" and legal responsibilities certainly is the dominant feature of this "German system" of vocational training (Greinert 1994), initial training in the Dual System first of all is a well-understood and socially accepted pathway into employment. Skill requirements are linked to the notion of holistic occupational qualifications (Deissinger 1998) and the quality of occupational standards is secured by the law underlying apprenticeship training (Raggatt 1988; Deissinger 1996). The part of the vocational school in this system, under the auspices of the federal state education ministries, is based on the notion that training requires an underpinning pedagogical understanding which sets it apart from "normal work". Besides the state, public, private and semi-private institutions work together by using long-established modes of cooperation within the system (Deissinger 2001).

The relationship between Apprenticeships and Full-time VET in Germany

In 2005, the new German Vocational Training Act (Berufsbildungsgesetz) came into operation. One of its major intentions has been linking full-time VET and vocational preparation more closely to the Dual System of apprenticeship training - considered to be the "centrepiece of vocational education and training in the Federal Republic" (Raggatt 1988, p. 166). The passing of the Act can be seen as a modest political move to question the omnipresence of the traditional apprenticeship system which has always dominated alternative non-academic pathways in the area of VET (Deissinger/Smith/Pickersgill 2006).

The "vocational college" or BK (Berufskolleg) in the federal state of Baden-Württemberg is a striking example for the ambivalence of full-time VET in Germany (which can be seen as the second major sub-system of VET). As one of the major subtypes of a vocational full-time it can be attended by students with an intermediate school leaving qualification. The BK clearly has a "double function" as young people can study a "professional" or "occupational" qualification, namely an "assistant qualification" (e.g. the economic assistant or Wirtschaftsassistent) and also go for a higher school qualification (in this case a polytechnic entrance qualification or Fachhochschulreife). However, research carried out at the University of Konstanz (Deissinger & Ruf 2006; Deissinger 2007) reveals from a student perspective:

that the occupational (assistant) qualification (Wirtschaftsassistent in the case
of the commercial BK) is generally not valued as being useful or attractive – a
result which is supported by empirical evidence as most students report their
intention to take up an apprenticeship after finishing the BK course;

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- that the "parking function" (deferring function) of the BK before entering the Dual System seems to remain restricted to the first year (BK I) while students in their second year have a clear understanding of their goals and motivations including taking up an apprenticeship after the BK II (i.e. the full two-year course); and
- that the BK rather assumes the role of a "bridge" between school education and the Dual System and therefore cannot be regarded as a substitute or alternative in relation to the apprenticeship system.

In terms of their motivation to attend a vocational college students rate the prospect to improve their individual chances on the training market as essential, followed by the aim to obtain a polytechnic entrance qualification. The relevance of the "assistant qualification" is virtually irrelevant among the students. Therefore it may be claimed that the students view the vocational college as an institution which prepares for an apprenticeship and/or offers pathways into higher education. This corresponds with the attitudes among companies towards the vocational college in general as only half the number of firms consider the "assistant qualification" as sufficient for entry into skilled employment. Although students in the BK think that learning in a practice firm in the BK helps them to develop "occupational conventional classroom-based learning, these results yield a rather pessimistic picture of the perception of vocational pathways outside the Dual System and therefore have to be seen as a political challenge in the wake of the new Vocational Training Act. This has been confirmed by former studies as well (e.g. Feller 2002)

The Relationship between Apprenticeships and Higher Education in Germany

The debate on parity of esteem between general and vocational education has been a long-standing topic of educational policy as well as research into VET. In Germany, the seventies of the 20th century saw the emergence of the Kollegschule model in the federal state of Nordrhein-Westfalen based on a pedagogical concept which denied the different natures and educational values of apprenticeships and academic studies (Blankertz 1972). It may be claimed from a historical perspective that the intended reform of VET, based on this concept and the correlated notion of "double qualifications", failed because the tradition and the political and economic interests backing the German apprenticeship system proved too strong for a substantial change of VET policy at that time. Also, educationalists pointed to the politisation of the educational ideas behind this "integration model" which apparently ignored the benefits of employer-led VET and workplace learning by denying the "unique" quality of vocational training in comparison to school-based and/or academic studies (Zabeck 1972). On the other hand, we can find models which transpose principles typical of the VET system into higher education. The result has been a kind of "academic Dual System" which, despite its growing importance, is still a regional reform project since the emergence of the so-called vocational academies (Berufsakademien) has virtually remained restricted to four federal states in Germany (Deissinger 2000).

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Despite the fact that the discussion about the parity of general and vocational education was a major topic in post-war Germany, the links between vocational and higher education in Germany are not associated with a policy intent to create an artificial equivalence of qualifications or pathways leading to them. Quite contrary to what is going on in the educational debate in the UK or, more important, on the European agenda circling around the European Qualifications Framework (Winterton 2005) and the notion of Lifelong Learning, bridges are not built by opening direct progression routes for non-academically trained people into higher education, but rather by linking up "philosophies". On the other hand, this means that the vocational bias enters higher education in an institutional and didactical way similar to dual apprenticeships.

Modernisation with respect to the Dual System occurs predominantly "internally" and not in the sense of a change of paradigm or underlying principles. However, challenges have turned out to be less soluble than in the past, above all when it comes to the training market with its volatility and its dependence on the state of the national economy (Deissinger & Hellwig 2004). Also, alternative approaches to VET, such as the vocational academies, or the likely expansion of more or less "vocationalised" university or polytechnic courses as turn-outs of the Bologna strategy will certainly put further strain on the apprenticeship system. The future appeal of apprenticeships will also depend on other nations' experiences with more "open" or "market-oriented" approaches to VET and their functional links, both in quantitative and in qualitative terms, with the national and international labour markets. As the prime concern of vocational training policy in Germany stays put on initial training there can be no doubt that the training market still is and will remain the biggest challenge.

This has a clear implication for the perception of the "character" of the German education and training system. As the focus is not on "integrating" pathways and "inclusive" approaches – which certainly was the "big topic" for a comparatively short timespan during the 1970s (Deutscher Bildungsrat 1974) – but instead on upgrading vocational training and establishing vocational principles within higher education the German system seems to be far away from becoming a "unified system". General and vocational qualifications remain organised "according to separate criteria and systems of assessment" and this implies that there are "limited possibilities for progression between them" (Young 2003, p. 228). On the other hand, it may be argued that general and vocational education, in the German case, are interdependent systems and that the interaction between them helps to stabilize the "vocational pathway" much more than in other countries.

Austrian and Swiss Solutions

In the two neighbouring countries – both have an apprenticeship tradition – VET policy seems more open and flexible (a) in terms of linking up sub-systems and (b) in terms of European developments (Gonon 2001; Aff, 2006). In Austria, vocational full-time schools (Berufsbildende Mittlere und Höhere Schulen) offer double

qualifications, and the graduates have portable labour-market relevant qualifications in hand when they complete the courses in selected vocational fields after 3-5 years. The BHS even offers a full university entrance qualification and graduates from the BMS can also obtain it when they enter a subsequent three-year course building up on their school qualification.

In Switzerland, apprenticeships have become more attractive to stronger learners in that they offer a double qualification linked to the vocational certificate, which is called "Berufsmatura" and can be obtained with additional lessons in general education during or immediately after completion of an apprenticeship programme. Both models could help Germany to rethink its policy of fencing off sub-systems from each other. This, however, requires an openness of the stakeholders within vocational training policy, especially employers and chambers. One first step could be to establish accreditation modes between full-time VET and the apprenticeship system which could lead to more parity of esteem and could help to cope with the problems within the so-called "opportunity-improvement system", which in fact is mostly based on so-called "measures" for those who fail on the training market (. Another step, working on the second "construction site" described above, could be to offer higher school gualifications for the stronger learners in the apprenticeship system without necessarily sending them off to the vocational-full time schools. All these reform perspectives need to be discussed broadly in the context of the present development of a "German Qualifications Framework" (DQR). This does not mean to devaluate the obvious advantages of the apprenticeship system.

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Apprenticeship (AP) and Enterprise-based (EB) learning in the Mediterranean region

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Summary: Although Mediterranean countries are characterised by a large share of informal apprenticeships, there is a wide variety of formal programmes in place that combine work with learning in institutional settings. A comparative analysis has revealed nearly 30 such work- or enterprise-based programmes or schemes. They can be classified into three categories, each of them facing different challenges: *well established programmes* with a sound institutional base and covering a relatively large number of participants are facing the challenge of balancing growth and quality improvement; *long-established programmes* which have remained rather small scale are mainly facing the challenge of improving their governance systems; and *relatively recent pilot programmes* that in many cases still depend upon support from donor agencies for their continued existence and viability are facing the double challenge of potential expansion and integration into the regular VET system.

Keywords: Apprenticeship (AP), enterprise-based (EB) learning, work-based learning.

Introduction

In both the Barcelona Process and bilateral co-operation programmes of the Euro-Mediterranean Partners, education and training have been identified as one of the key instruments for the promotion of economic prosperity and social stability in the Mediterranean (MEDA) region. Following a proposal made by the MEDA Regional Indicative Programme 2002-2004, a regional MEDA project called 'Education and Training for Employment' (MEDA ETE) was designed by the European Commission and the Euromed partners, and is currently being implemented by the ETF (European Training Foundation), a specialised EU Agency in vocational education and training and human resources development. Participating countries are Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Syria, Tunisia, Turkey, West Bank and Gaza Strip (Palestine).

The EU funded project includes a major component on Apprenticeship (AP) and Enterprise-based (EB) learning with a twofold objective: a) to analyse the AP and EB learning policies and systems in the ten MEDA countries/territories involved in the

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project as well as to identify cases of interesting and innovative practice; and b) to stimulate national reform agendas in the area of AP and EB learning through enhanced regional co-operation. The two objectives (analytical and networking) are strongly interconnected.

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Methodology

The methodological framework of the overall project on AP and EB learning in the Mediterranean region is based on three major pillars which are closely interlinked: 1. Analysis; 2. Networking; and 3. Policy learning.

Analysis

The analytical pillar is based upon different elements and sources. Firstly, on a common analytical framework (concept paper, guidelines for country reports) that was applied in the production of a set of ten country reports by national experts selected by the ETF. Secondly, on evidence, documentation and lessons gathered during field visits to four of the ten participating countries (two visits to the Maghreb (Algeria and Morocco) and two visits to the Mashrek region (Jordan and Egypt). Thirdly, the analysis also draws upon material presented at two meetings held for national experts and policy makers from the region at the ETF in Turin (mid 2007), and two stakeholder workshops in Morocco and Algeria (October/November 2007). Fourthly, a cross-country analysis and synthesis presented in a comparative report prepared by an international expert selected by ETF (Prof. Richard Sweet, former OECD Principal Education Analyst, Centre for Post-compulsory Education and Lifelong Learning, University of Melbourne).

Regional networking

The second major pillar is a network of policy makers in AP and EB learning from the ten Mediterranean countries that was set up in July 2007 in order to enhance regional co-operation on this topic. At the request of ETF Ministers of Education/VET and employer organisations have nominated two representatives per country/territory (20 participants in total) to take part in the network. The policy network is connected face-to-face via two workshops per year and in between through a virtual community and discussion forum. It builds upon a well developed information base (country and comparative analysis) and is intended to become the platform of exchanges and debates on the topic of AP and EB learning, supported by ETF/EU and local experts. The policy network also interacts with local and EU experts on the discussion and validation of the draft country and comparative analyses, in order to enhance the quality and dissemination of the analysis and reports in their countries. Another goal is to create stronger bridges between policy and practice through systematically interconnecting experts, practitioners and policy makers. Lessons on the effectiveness and impact of the network as well as on its temporary or sustainable nature will be drawn at the end of 2008.



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Policy learning

A number of measures have been designed for the members of the policy network in order to strengthen the individual, institutional and networking capacities of the Mediterranean countries. Within the wider network, local experts are brought together with policy makers and shapers as well as EU and international experts through workshops and the virtual community. Opportunities are provided to learn from both policies and practices within the Mediterranean region (via country reports, comparative analysis, peer learning review, VC-DF) and EU experiences (study visit, VC-DF). Particular attention is paid to the transfer of lessons learned and the development of home-grown policies and practices as opposed to donor-driven or imported models.

Results

Contextual factors

The comparative analysis has identified a number of contextual factors (demographic, economic, labour market, educational and cultural) that have the potential to influence the scale and character of work-based learning programmes for youth in the ten Mediterranean countries. One major striking feature is the young population in the region which accounts for the largest shares of young people in the world coupled with high population growth rates (Bardak et al. 2006). Around one in three of the population is aged less than 15, compared to only 14% of the population in Germany and Italy. This places considerable pressure upon governments to provide education and training and to get young people into employment. Despite the political turmoil and uncertainties in the region (in particular in Lebanon and West Bank and Gaza), most countries have experienced rapid economic growth in recent years (4.3% GDP increase on average). This growth is due to economic restructuring, increasing economic liberalisation and growing engagement in regional and world trade. Outsourcing of production to the region by European firms and the growth of manufacturing industries has led to an increasing demand for skills and qualifications in many countries.

On the other hand, in all countries there is a large informal sector, which can be estimated to account for half or more of all employment in Egypt and Tunisia, and for about 30 % of GDP in Egypt (Bardak et al. 2006). This poses a difficult foundation to



which to attach structured and regulated employment and training arrangements for youth, and a limitation upon the expansion of these arrangements. In addition, the comparatively high unemployment in the region puts a pressure to hold wages down and encourages the use of cheap labour, reducing the incentive for firms to invest in technology and in upgrading of skills. The size of the vocational pathway in the education systems is relatively small in most of the countries and there is a tendency to attract the lowest achievers which in turn makes VET (and in some countries in particular work-based forms of vocational education) appear as a low status residual pathway. This is coupled with cultural values that influence attitudes to work and participation in training and education for work. For example, in Jordan the low status of vocational education programmes is referred to as 'the culture of shame' or in Egypt the high value of academic and higher education is described as the 'certificate-bound' society.

Models of AP and EB learning

The preliminary findings of the comparative analysis show that there is a wide variety of programmes in place combining formal instruction with work, including but extending well beyond those that are described as apprenticeships (and even the latter can be quite different one from another). For such reasons the more general term work-based (WB) learning has been used to include all of the types of programmes.

Apart informal apprenticeships (traditional and still the main route of skill development for some sectors and occupations; unregulated and without qualifications) the review has revealed nearly 30 separate work-based learning programmes or schemes. These can be grouped in three types of formal programmes for young people (Sweet 2008):

- 1. Well established work-based learning programmes that have relatively large numbers of participants, that represent a reasonably larger share of the upper secondary initial vocational education and training system, and that have a sound institutional base (e.g. Algeria's apprenticeship programmes; Morocco's alternance and apprenticeship programmes; Turkey's apprenticeships and internships; and Jordan's Applied Secondary Education).
- Long-established programmes that have become a normal part of the country's VET system, but which have remained very small, particularly in relation to vocational education that is completely institution-based. Included here are Egypt's programmes provided by the Ministry of Education and the PVTD; and Israel's apprenticeship and enterprise-based training.
- 3. Relatively recently, small pilot programmes that in many cases still depend upon support from donor agencies for their continued existence and viability. Examples include programmes in Lebanon and in West Bank and Gaza; Syria's pilot apprenticeships and the Egyptian Mubarak-Khol Initiative.

In terms of their relationship to the country's secondary and vocational education system, some clear cases of segmentation became evident:

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- In Morocco, there is a very clear hierarchy within the VET system. Apprenticeships are located at the lowest levels of the national qualification system, alternance at the next level, and residential vocational training at the highest levels. The lower the level of the programme the higher the level of contact with the workplace, and those vocational programmes that result in the highest level qualifications provide young people with the least workplace contact.
- In Algeria the degree of segmentation appears to be less than in Morocco, with apprenticeships being available at relatively high levels of the qualifications system. Nevertheless they tend to be clustered at the lower levels, particularly when compared to residential programmes.
- In Israel apprenticeship programmes are segmented both vertically and horizontally from secondary education. They are targeted at school drop outs, and are provided by a separate Ministry within separate institutions and lead to quite separate qualifications. Their segmentation from mainstream options for youth is further emphasised by the lack of any formal contracts of employment and training, with the employment being temporary and residual.

Conclusions

Work-based learning is at different stages of development in the Mediterranean countries and different types of programmes seem to face different challenges:

- *Well established programmes* seem to face three closely related challenges: balancing growth and quality improvement; reconciling social and economic needs; and strengthening their links to the labour market.
- Long established programmes that have not been able to grow appear to face the challenge of improving their governance systems, including the regulatory environment that they work within and their financing systems.
- Relatively recent, small pilot programmes seem to face the challenge of expanding, without reducing their quality, and of developing regulatory and governance systems that will bring them closer to the centre of their countries' initial vocational education systems.

Common to many of these challenges is a choice between devoting resources to increased access to WB learning programmes and using the same resources to improving the quality of programmes. Demographic pressures and high levels of unemployment tend to favour the first approach; the need to improve national skill levels in an increasingly globalising economy tends to favour the second.

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Annex

Figure 3 Integrated versus segmented models of work-based learning for youth

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Model 1	Model 2	Model 3					
Integrated	Vertically segmented	Vertically and horizontally segmented					
General	Institution-based vocational	Work-based vocational					

(Sweet R. 2008, Draft)





Workshop I

Chair: Erica Smith

Interventions by Government and other Stakeholders in Apprenticeships



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Summary: The European TTplus project is researching the practice of trainers in Europe. It has undertaken a series of case studies and is presently developing scenarios of practice. It is impossible to report on all the work of the project within such a short paper. The major aim of the project is to develop an architecture for continuing professional development for trainers. However, our research and that of other projects, points to a series of contradictions and dilemmas for those seeking to develop opportunities for the training of trainers. Such dilemmas are not easily resolved. But they must at least be taken into account and addressed in attempting to outline an architecture for the Continuing Professional Development. In this short paper we outline those contradictions and provide a draft of the open architecture.

Keywords: Trainers, competence development, workbased learning

An Open Architecture for Continuing Professional Development of Trainers in Europe

The basis for the open architecture for continuing professional development for trainers in Europe is that it must address all those concerned with training and learning. This includes trainers - both full and part time - but also employers and enterprises, sector organisations, trade unions, regulatory bodies, regional economic bodies, examination and certification organisations and local, regional national and European governmental organisations. It will be designed to be inclusive and to support trainers and organisations in developing, promoting and facilitating opportunities for professional development. It is based on voluntary commitment to both implementing its principles and monitoring progress towards that implementation.

1. Recognition of the importance of support to learning and the role of learning for individual competence and organisational development

The architecture for the continuing professional development of trainers is based on the recognition of the importance of training for the development of individual competencies and lifelong learning for individual employees and organisational development within enterprises and other organisations.

2. Recognition of different modes of learning

The Architecure recognises the different ways in which people learn and develop competence. This may include participation in formal full or part time training, externally or in the workplace, but it also includes informal on the job learning and self study. The Architecure recognises that trainers may have a role in supporting all these different forms of learning.

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3. Architecture for learning versus Frameworks for qualification

Over the past period we have seen an increasing focus on qualification frameworks (Commission of the European Communities, 2006; Young, 2005). Such frameworks are designed to promote access to training between different pathways, to facilitate mobility and to acknowledge competence development in an ex-post manner. Yet, qualifications frameworks might fail providing access to opportunities for learning and overlook the centrality of work practice on such provision (ITB Working Group, 2008 (in print)). An architecture that promotes learning needs to recognise not only the role of the individual in achieving qualifications but also the role of organisations in facilitating learning and putting certain principles of learning into practice

Contradictions in the professional development of trainers and design principles for the open architecture

1. Professionalisation versus the spread of training and learning

One approach to the training of trainers is to professionalise the occupation. Indeed, this was the aim of the Leonardo da Vinci funded Europrof and Euroframe (Attwell, 1997; Heidegger, 1997) projects. The projects sought to increase the recognition of the importance of the role of trainers and vocational teachers through the development of a professional occupation. This in turn would be facilitated by higher levels of qualification and regulation and by a greater emphasis on research in the field. However, such a focus, implies the emergence of a coherent cohort of professional and full time trainers. Our research suggests that at the same time the training function has in fact spread, with increased numbers of skilled workers for whom training is only one part of their work responsibilities. Ironically, this is consequent on the growing recognition of the importance of training and of the increasing emphasis on practice in training provision. Such a development implies that any move to introduce a regulatory or qualification framework might fail to address the needs of such part time trainers that are working in many different not that well delineated contexts.

The architecture foresees the recognition of role different groups of people play in training and learning

The architecture recognises that many different people play a role in supporting learning. These include full and part time trainers but also those who support others in learning as part of their job for instance through the induction of new staff. They may also include those responsible for the design and development of computer supported learning or those who facilitate professional networking (Grollmann & Rauner, 2007; Harris, Simons, & Bone, 2000; Schmidt-Hackenberg, Neubert, Neumann, & Steinborn, 1999).

2. Formal versus informal learning

On the one hand, we understand the importance of the learning of trainers in practice and its dynamics. This is borne out by our research, which shows the

importance of team work and peer feedback in professional development. On the other hand, we are seeking to develop a stable architecture for Continuing Professional Development. How can that incorporate and recognise the centrality of such dynamic learning processes? And how can we recognise this, without reducing it to a series of formalised competences?

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The architecture foresees the recognition of the role of formal qualification as well as the role of reflection and learning in practice. An architecture needs to establish interfaces between those two realms.

The architecture recognises that although many trainers have no formal qualification in training and may not wish to acquire such a qualification, for others the achievement of a formal qualification may play a role in their learning and may offer them opportunities for professional advancement. Thus commitment to the Framework includes the development and recognition of relevant qualifications, forms of assessment and evaluation that recognise practice and offer appropriate ways of access to such qualifications. On the other hand the architecture recognises the importance of reflection on practice as a key element in professional development. Thus it advocates the provision of opportunities for reflection through peer review and mentoring and though the promotion of activities and tools for recording reflection such as diaries and (e)-portfolios.

3. Identity as a trainer versus identity as a skilled worker

Recent research by the Eurotrainer and the TTPlus project shows that the many trainers see themselves not as trainers but as skilled workers or managers who undertake training as an additional part time part of their work role. Indeed, this identity is important, in providing them with the technical and subject-specific competences to perform as a trainer.

They are unlikely to identify with a Framework or qualifications for professional development for trainers as such. How can we provide opportunities for learning and practice in training, whilst relating to their occupational or professional identity as a skilled worker?

The architecture acknowledges that there is spectrum of training roles that cover the spectrum from largely pedagogical and organisational tasks to tasks that require specific and deep content knowledge and skills. Therefore promotion of the co-operation between different roles of learning support is a crucial design principle for the architecture (Huys, De Rick, & Vandenbrande, 2005; Skule & Reichborn, 2002).

The architecture recognises that many different people with different backgrounds and experiences play a role in supporting learning. What is critical is that cooperation between such roles is guaranteed for the sake of individual and collective learning processes.

4. Pedagogic skills versus technical skills and a wide range of competences

This also relates to the identity of trainers: In some cases we have seen the provision of training in didactics and pedagogy, in others professional development measures in occupational competences. However, these are not add-on or cumulative skills or competencies (Shulman, 1986).

The architecture promotes the integration of pedagogic and technical, subject specific knowledge and skills and foresees the development of a broad range of competencies

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Learning research has shown that in many cases so-called interpersonal, soft or key skills are bound to specific contexts, skills and knowledge in terms of learning, mental representation and acquisition (Boreham, Fischer, & Samurcay, 2002). Therefore, the ability to train as a skilled worker both involves the practice of occupational skills and the practice of training skills. The architecture also recognises the broad range of competencies required of trainers. These include:

- subject or occupational competences
- pedagogical and didactic competences
- organisational and interpersonal competences and
- learning competences.

Opportunities for professional development should allow trainers to develop all of these competences in an integrated manner.

5. Individual versus organisational learning

Whilst traditionally training courses and qualifications have focused on individual performance and skills development, many organisations - especially small and medium organisations - are more concerned with organisational learning and development and about how such training impacts on the development of the organisation as a whole.

The architecture foresees the recognition of the importance of trainers in facilitating learning for individual competence development and organisational development

How does or can the role of trainers contribute to both individual and organisational learning? The architecture for the continuing professional development of trainers is based on the recognition of the importance of training for the development of individual competencies and lifelong learning for individual employees and organisational development within enterprises. This includes knowledge about learning conducive organisation of work processes and job profiles (Skule & Reichborn, 2002)

6. Organisational identity versus communities of practice

A related dilemma is that of identification with organisations as opposed to identification with communities of practice and the other way around. Research suggests (Attwell, 2007) that much learning takes place in communities of practice. Such communities can transcend individual organisations, indeed, the increasing use of the internet for (informal) learning is leading to the development of distributed communities of practice. Our case studies suggest the importance of contact and discussion with other trainers for the professional development of trainers. Yet, research also suggests that managers (especially in SMEs) remain wary of contact with other organisations and companies whom they perceive as competitors.

The architecture foresees the importance of networking and partnerships

The architecture recognises the importance of networking - within companies, between companies and in broader Communities of Practice as a means to professional development. It commits organisations to facilitating participation within

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networks and communities for trainers. The architecture recognises the importance of appropriate tools and platforms for networking between trainers, for the exchange of experiences and practice and for monitoring opportunities for professional development. The architecture will promote the development and use of such tools and platforms. The architecture recognises the importance of partnership in recognising professional development and in providing opportunities of that development to take place. such partnerships may include employers and enterprises, sector organisations, trade unions, regulatory bodies, regional economic bodies, examination and certification organisations and local, regional national and European governmental organisations.

7. Regulation and certification versus the practice of training and its innovation

Regulation of training and the introduction of a mandatory system of training qualifications may be seen as a means of professionalisation and of raising the quality of training. At the same time research suggests it may inhibit innovation in practice. Additionally, in our interviews most trainers talked to us about the practice of training. It is in the realm of practice, that the quality of training is most critical. However, training courses often focus on the theory and codified foundations of training, rather than the practice. Certification all too often is based on this knowledge, which is easy to test. It is far more difficult to assess the quality of practice.

The architecture foresees the importance of opportunities to practice for learning

The architecture recognises the importance of opportunities to practice. It commits organisations to providing varied opportunities for practice as part of professional development.and promotes innovation in trainig practice.

The architecture forsees the importance of opportunities for initial and continuing professional development

The architecture recognises the importance of both initial and continuing professional development for the effectiveness and quality of training. The architecture is based on an individual commitment by trainers to their own professional development, a commitment by enterprises to providing opportunities and supporting professional development and a commitment by other organisations to supporting and recognising that professional development.

Application and implementation of the Architecture

1. Promotion of the principles of the architecture

For such a architecture to be effective, it will require widespread dissemination, promotion and adoption. Signatories to the architecure will be committed to such activities.

2. Implementation

It is recognised that the architecture cannot be imposed by regulatory or legislative means. Instead the architecture is based on voluntary adoption. Such adoption involves a commitment to implementation of the architecture, whilst recognising flexibility in the different ways this may be undertaken, to transparency in the measures undertaken and in monitoring, reviewing and reporting on progress in implementation.

3. Governance and further development of the architecture

As an open architecture, no single organisation can own or govern the architecture. However, it is proposed that appropriate bodies at European, national, regional and sector levels should undertake to co-ordinate the adoption and further development of the architecture.

4. Research and monitoring

Research has an important role to play in supporting the development and implementation of a architecture for professional development. This includes research into the context, role and competences of trainers, monitoring of progress in implementing professional development opportunities and critically, providing example of effective and innovative practice. The architecture will be based on such research and at the same time support and disseminate it.

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The Evaluation of the Development of Integrated Regional Vocational Education and Training Centres in Hungary

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Summary: According to the recent modernisation of the VET system in Hungary, a network of integrated regional vocational training centres is under development. During the first phase 16 centres were set up. The presentation is based on research aiming to discover the level of partnership existing between these new centres and the economy, and the extent to which these centres have the preconditions to contribute to the modernisation of vocational education and training. Since innovation, which is the key element within the modernisation of VET cannot be separated from regional innovation, in which the development of partnership with local stakeholders have crucial roles to play, the presentation explains how and in what ways these new centres can support and utilise the process of local community- and partnership-building with different stakeholders in order to develop the quality and efficiency of vocational education and training all around in the country.

Keywords: innovation, modernisation, regional, partnership

Introduction

My paper is based on two research projects, carried out by a research group under my direction at the National Institute for Adult Education in 2005-2006, and in 2006-2007. The first research project conducted into the problems of educational and regional planning and human resources development in a number of the declining micro-regions of Hungary. The purpose of the research project was to discover how educational and regional planning is able to make a positive contribution to the development of human resources and to promote the catching up of the peripheral regions. According to the main purpose of the research, special attention was given to vocational education and training as a key element of human resource development in the regions.

Serious criticism has been directed towards VET institutions in the country as a whole. VET does not respond adequately to market needs. The interests of teachers and students in VET are more easily asserted than those of the employers. They complain that it is in the schools' interests to keep students in the institutions as long as possible. In Hungary, only within the school system there are more than a thousand locations providing vocational training, which is unfavourable both from the point of view of efficiency and that of quality. There is a competition among schools for normative support, whilst parallel training facilities exist within the regions. The institutional system currently in force is both ineffective and inadequate.

We have studied the relationship between the economy and vocational training at regional level. Our experience is that regional institutions, for example labour offices and regional labour development centres, have limited opportunity to influence the behaviour of the main players, ie. companies, vocational schools, parents and such like. School-based VET is decided at local government level. Short-term company interests reduce the opportunity to establish a long-term strategy for VET. There is no co-ordination relating to VET at regional level.

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According to the recent modernisation of the VET system in Hungary, a network of Regional Integrated Vocational Training Centres (RIVTC-s) is under development, financed by the human resources development operative program. During the first phase leading up to the end of 2006, 16 centres were set up (with the integration of 120 vocational education schools and 6 higher education institutions). This will be followed by others: a further 44 centres will be established by 2013. As regarding the official plans, members of the network, eight schools on an average in each Centre will closely cooperate to harmonize or integrate their management systems and distribute tasks. In this way the integrated organization will be able to introduce modular training and will function as a practice-oriented basis for vocational training, and will strengthen practical training in every region. The advisory bodies of the Regional Integrated Vocational Training Centres established by with the support of the European Social Found are made up the representatives of employers delegated by the relevant regions. The development of the system of the RIVTC-s envisages the total reform of the institutional structure, the concentration of recources and capacities, the strengthening of the regional scope and stronger ties with the labour market.

The second research project, my presentation is based on started at the end of 2006, aiming to discover the level of partnership existing between these new centres and the economy, and the extent to which these centres have the preconditions, within their respective scopes, to contribute to the modernisation of vocational education and training. Since innovation, which is the key element within the modernisation of VET - as well as of learning regions - cannot be separated from regional innovation, in which innovation within local communities and the development of local partnership have crucial roles to play, the presentation is planning to explain how and in what ways these new centres can support and utilise the process of local community- and partnership-building with different stakeholders. The presentation provides a summary of the experience learned from the 16 cases, (more detailed from four cases) and sets out recommendations for further development.

Methodology

The experimental part of the first research project cited was based on seven case studies (one selected from each of the relevant economic-administrative regions) focusing on the particular characteristics and development processes within the micro-regions. The selection criteria employed were the following: we involved sub-regions, which could present some kind of innovative elements of change or demonstrate their endeavours to break out of their under-developed position. Furthermore, we studied sub-regions, which have the potential, at least theoretically, to achieve, by utilising human resources at a higher level, a more developed status in the future.

To ensure comparative analysis of the main characteristics of the regional structures, we employed certain aspects as guidelines to help in the preparation of the micro-regional case-studies. We explored, amongst other things the conditions of VET within the given micro-regions according to the following aspects:

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- The infrastructure of vocational education and training provided
- The location and structure of the programmes offered
- The solvent demand for vocational education and training
- The demand and desire to learn, and participation in vocational education and training
- Access to vocational education and training
- Promising experiences for broadening education and training opportunities
- Circumstances which make a positive contribution to the harmonised planning process
- Circumstances which exert a negative effect on the harmonisation of regional and sector-specific, i.e. educational elements within the planning process.

The case-studies were based on the analysis of regional documents, interviews with the key actors (employers, employers' representatives, trade unions, vocational schools, regional labour offices, regional development agencies, local governments) in the regions and on other relevant research papers. Research of the RIVTC-s is based on a review of the available literature, document analyses and interviews with the experts of the centres researched and with relevant stakeholders. In the first step the research focused on four centres, from different regions of the country, which represent different stages of the development process.

Results

There are some consequences originating from the research projects. Firstly, there are very different organisational forms with different levels of labour quality, different levels of training requirements and different levels of in-company training systems. Secondly, the connection between the economy and the education system is complex, depending on the concrete organisational forms of the companies. (Since firms exist in the state of permanent reorganization, learning and teaching are becoming the most important task of business organization.) Thirdly, a considerably precise picture of the connection between the economy and the education system can be drawn only on the regional level.

Some of the main lessons derived from the research are the following:

- There are some serious differences between the regions how they are able to harmonize the sector specific (educational) and the regional aspects in the planning and development process
- The new dimension, 'regionalism' related to education and training, means a real challenge for the all society: the socialization process, the social debates, social partnership can increase the effectiveness of this learning process
- According to the result of our research, school based vocational education was emphasized much stronger in the regional development plans than adult education and lifelong learning
- There is an urgent need for reorganizing the regional system of the institutions of vocational education and training to ensure a more efficient

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level of education and training. Because of the construction of the financial system the problem can be solved only with the involvement of the government

- Further research is needed to find out why school based youth education and training has much stronger dominance in the regional development plans than other forms of education and training. Also further research can provide answers for the questions how to increase the attention of the regions towards the importance of adult education, lifelong learning and company-based training in their future development plans.
- Up to this phase of the research, the following main findings sometimes criticism have been explained related to the development of the Regional Integrated Vocational Education and Training Centres:
- Certain areas such as social partnership characteristically call for the improvement of cooperation.
- The participation of key actors in the activity of the RIVETCs is formally ensured; still the substancial influence of partnerships is disproportionate compared to that of public administration.
- The delegates arriving from the world of work do not always know the demands of the economy entirely; thereby their representational efficiency becomes lower.
- The central administration and management of VET is fragmented, and the flow of information does not function with the required efficiency (the system of indicators is not adequate; the statistical data collection system is not stable and does not provide a satisfactory basis for decision making).
- The involvement of the non-govermental sphere and the operation of social partnerships formally exists and have taken an institutional form at certain points, even so, besides former achievements additional efforts are required within the educational sector.
- Some further concrete information on the recent stage of the development process of the RIVTC-s considered as positive signs for the future:
 - for the individual level: RIVTC-s create an opportunity to participate in more balanced and harmonised training providing
 - for the organisational level: creation of the centres means a learning process how to operate, how to function in networks (since the centres are planning to harmonise their training supply); RIVTC-s ensure a higher level of commitment

Some negative signs for the future:

- for the individual level: it is not clear, how the training centres will
 reduce regional enequalities in access to training (there is no message
 about knowledge creation!); it is a question how the five big pole
 centres of the country are able to countribute to reducing regional
 enequalities; it is important that employees are not in the focus of the
 target group of the centres!
- for the organisational level: the connection with the representatives of the economy is very weak; 'chambers and other employer bodies do not explain their future needs for labour' – 'the teachers have the

information what qualifications are required in the future' – these oppinions are thought-provoking! (These surprising ideas need very detailed further study of the development process for the organisational level.)

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I would like to emphasize that the given short period of the experience of the establishment of RIVETC-s in Hungary, provides only an initial outcomes of the research. The continuation of the recent project can provide a more detailed picture of the development process of RIVETC-s, getting closer to the question how these centres can make a contribution to the development of innovative apprenticeship in the country.

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The Italian apprenticeships: the results of the latest reform

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Summary: This paper illustrates the picture of the Italian Apprenticeships, which follows a model of its own, that is not comparable with other better known European ones. The history of the last decade is told underlining the effects of the different reforms with respect to the principal indicators of the labour market and to the vocational training system, at the eve of the opening of a new discussion with the Regional authorities and the social partners to change the legislative framework.

Keywords: apprenticeship, labour contracts, youth employment, initial vocational training

Introduction

To introduce the Italian apprenticeship system to an international floor I need firstly to fix some points which can be useful to give an idea of the role of this instrument within the Italian education system and the labour market in comparison with the other and best known European models of apprenticeship.

- 1. In 2006 in Italy we have counted an average of about 600.000 apprentices employed throughout the country, that corresponds to about 15% of the total 15-29 employed population. Given the wide range of targeted population, the apprenticeship is considered one of the main labour contract for recruiting young people.
- 2. The Italian apprenticeship is mainly a labour contract, used to recruit young people. It's defined by law as a "training contract", which means that it has to make young people acquire competencies or qualifications, which should be certified at the end of the contract.
- 3. Being a training contract, the Apprenticeship has some links with the education system, but it cannot be considered up to now, at least a part of this system; it prevails the employment purpose, if not in the law, certainly in the implementation.
- 4. The target of young people covered by the Italian apprenticeship is wide: it goes from 16 up to the age of 29 at the recruitment. This fact has important reflexes in fixing the purpose of the training that compulsory in the apprenticeship.

The framework of the Italian Apprenticeship

At the beginning of the XXI century the new centre-right government has launched its own strategy to boost growth and employment, with the aim to trace a pathway towards the Lisbon benchmarks for 2010. This strategy focused on the link between economic development and employment growth, given that the Italian employment indicators have always been lower in comparison with the other big European countries and with the EU average.

Under the measures to promote a new welfare to work, high relevance has been given to the reform of the education system and of the measures that can facilitate the transition into the labour market, such as the so-called "training contracts".

The 2003 reform set down a complete new framework for apprenticeship based on the following strongholds:

- differentiation of apprenticeship into three typologies of contracts, according to different purposes of the training:
 - apprenticeship for young people who have to fulfil the compulsory training period up to the age of 18;
 - a more strictly occupational based form of apprenticeship for young people aged 18 to 29, aimed to get a competence certification or a professional qualification;
 - apprenticeship for acquiring a diploma or a university degree for young people aged 18 to 29;
- widening of the population target, including in apprenticeship young people up to the age of 29 (at the recruitment) and extension of the maximum duration of the contract to six years (within this limit the duration of the apprenticeship contract is fixed by the collective bargaining);
- improvement of the training and education purposes, with the introduction of an individual training plan to be designed for each apprentice by the enterprise;
- enhancement of the quality of the training provided during apprenticeship, through opening to the enterprises the possibility to provide the compulsory training if specific requirements are fulfilled.

Being an instrument which is at the same time a labour contract and a tool of educational and vocational policy, the apprenticeship's regulation implies a collaboration between the State and the Regional authorities. The 2003 reform for the first time recognized this role of the Regional Authorities by stating a second level regulatory process before implementing the new apprenticeships. The local process needs an agreement with the social partners before the regional law has passed. Moreover it's up to the collective bargaining to fix salaries for apprentices.

So the legislative framework of the apprenticeship contract must be defined through the involvement of at least three parts: the national government, the regional authorities and the social partners.

As well the implementation process implies that at local level the social partners are involved by the Regional Authorities in programming and evaluating the vocational training supply system for the apprentices.

Main characteristics of the Italian Apprenticeship

In 2006 we have counted about 590.000 apprentices.

The distribution of apprentices in the country shows substantial differences among the main areas: traditionally the most part is concentrated in the northern part of Italy.

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From 2007 young people can enter apprenticeship from the age of 16 while formerly the entering age was 15 years. The percentage of young people under 18 in apprenticeship is very low, under 10%, and this is one result of the last ten years reforming process that has raised the apprentices' average age. In fact nowadays the most part is aged more than 20 and probably in the next years we will assist to an ageing process due to the full implementation of the 2003 reform, which has moved the recruitment age limit up to 29.

Although the population involved, the level of education is very low. The most part has completed only the compulsory school period, without getting any upper education certificate.

Analyzing the development of apprenticeship in the economic sectors it results that traditionally the use of this contract in agriculture is very rare. The handicrafts sector has always been the first employer for apprentices but its role has been decreasing in the last years. The tertiary sector has almost doubled its presence on apprenticeship after the 1997 and now it counts a percentage similar to the handicrafts sector.

The apprenticeship is defined by law as a training contract, which means that it implies a vocational training to be provided to the apprentices. The volume and the objectives of this training vary according to different apprenticeship typologies. Usually there is a minimum amount of vocational training to be provided, expressed in hours a year, that is fixed in the national law; there is room for the regional regulations and for the collective bargaining to higher this amount or to set how it has to be articulated in contents according to different competences to be acquired.

Traditionally, providing the training courses for the apprentices has been a task of the institutions as in all other European systems of apprenticeship. Given the Constitutional competence on vocational training, it's a task of the Regional authorities to set programmes to supply the vocational training.

Those courses are publicly funded and are usually provided by training centres accredited at local level. Under the 2003 reform it has been opened the way to the enterprises that fulfil specific requirements to provide the vocational training on their own, out of the Regional programmes.

The purpose of the apprenticeship can be a vocational qualification or a competences certification; both have to be referred to a "training profile" that should contain the standards to evaluate the performance at the end of the apprenticeship contract or when it's interrupted. Actually in Italy we haven't a National Qualification Framework: this framework is now under implementation according to the European Qualification Framework principles. So the training profiles are defined at regional level and included in a Catalogue (Repertoire).

Usually in company training is organized and developed by an instructor (called "enterprise tutor"), who can be the employer in the SMEs or a qualified employee with at least three years of professional experience.

Evidences on the effects of the latest reform of apprenticeship

The indicators on the participation to the education system and the labour market all show a positive trend from 2000 on.

The percentage of young people who stay in the upper secondary schools and who get a diploma has been increasing constantly in the last decade influencing the youth education attainment level referred to the 20-24 population. At the same time the early school leavers rate has continuously lowered during the last five years.

On the side of the labour market, the more flexibility introduced in the use of the labour force through the reform of the labour contracts has centred the objective of raising the employment rate. In 2006 the employees number has reached 23 millions, with a positive variation of 2% on respect to the previous year. The unemployment rate has decreased from 10,1% in 2000 to 6,8% in 2006 and this is the best result of the last twenty years.

These results lead to the conclusion that the strategy that has been implemented from the year 2000 has worked out, at least for what concerns the indicators related to the labour market.

Within the labour market the apprenticeship has had a trend very different from the total employment. In a context of continuous increase in the number of apprentices employed, the yearly variation doesn't relate too much to the employment growth but is mostly influenced by other factors. For example the 2004 increase in the number of apprentices is the output of the cancellation during 2003 of other subsidized labour contracts for recruiting young people. The very low growth in 2005 and the performance in 2006, if considered together with the very positive trend on the total labour market and the widening of the target of apprenticeship from 24 to 29 young people, show a difficulty in the development of this labour contract.

According to the experts, the decreasing rate of growth in the number of apprentices in the last years depends on the problems set up by the implementation of the 2003 reform.

In fact the system of cooperation among the different institutional levels with the social partners hasn't worked very well, producing the overlapping of regulations issued by more actors, the heterogeneity of the local apprenticeship systems and the uncertainty of the firms on the proper use of apprenticeship. Perhaps those problems are a result of the unclear framework on the new competencies' distribution between the State and the Regions. Surely it is necessary to establish a more cooperative way of proceeding among the three actors on subjects – as apprenticeship – which involve the contribution of all the three.

On the last July 2007 an agreement between the Government and the social partners, translated in law on last December 2007 (act nr 247), has stated that there will be a new reform of apprenticeship during the year 2008.

Next to the problems related to the integrated action among the different actors of the apprenticeship system, there is a need to higher the participation of apprentices to the "formal" vocational training, provided in the training centres or by the enterprises. The involvement rate is too low and does not realize the right-duty for all apprentices to receive a formal vocational training. And finally there is the need to improve the quality of the vocational training system for apprentices, by appointing national standards in terms of contents, of output and procedures to assess the output.

The widespread interest on reforming the apprenticeship to make it more useful for the firms, to higher the level of their human resources, and for the young people, to facilitate their transition into the labour market, is the best proof of the common view on the strategic role that this training contract can carry out for the growth and the competitiveness of our economy.

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Competence development through workplace learning: The case of the French Vocational Baccalauréat from Vocational Lycées and the Maisons Familiales Rurales

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Introduction

The creation of the vocational baccalauréat track in 1985 contributed to a main innovation in the French initial secondary education system. In its objective and in its innovative way of learning combining sandwich courses (work and school places learning), this program offer students who were at school in a failure situation a path for continuing their studies or a springboard to jump into a new career or professional plan. This diploma has been implemented in different ways: through student status or in apprenticeships, and through the responsibility of the Ministry of Education in vocational high schools but also, under the responsibility of the Ministry of Agriculture like in the Maisons Familiales Rurales (MFR). First, this paper will present the institutional framework: what is the Vocational Baccalauréat (VETBac) diploma, its roles and purposes? And as the national French system of education from the Ministry of education has been the subjects of number of articles in European VET reviews (Gendron, 2005), it will be presented more in details the MFR system less known and its philosophy. The second part, briefly developed8 here, will give some views of the convergence and divergence of the conditions of competence development of vocational baccalauréat trainees or students with a workplace learning focus in those two previous organizations.

Framework: the Vocational Baccalauréat diploma in France, its purpose, organization and its implementation in Vocational Lycées and in the MFRs

The vocational baccalauréat diploma

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A new level of diploma

This "new" diploma at level IV (fig. 1, Gendron, 2005) of vocational *Baccalauréat* was created in 1985. The purpose was to promote and revalue vocational education in schools now called vocational *lycées* and thereby to allow students in such schools to be recognised as *'bacheliers'*, a dignified title before only given to general and technical education schools students. The desire to make education more democratic was marked by Ministry of Education objectives in the Guidance 1989 Law which stated that the 'Nation wants to lead 80 % of a typical age group to the *baccalauréat* level'. Such an objective implied that technical and vocational education should take part in this national effort: the proportion of CAP and BEP holders wishing to pursue their studies and not enter working life was only 20 %. The revision of vocational educational educational education happened also at level V through the creation of technical classes at the fourth and fifth grade. In addition, the BEP was revised, which now prepares up to the VETBac level.

		Main certificates of the general curriculum (in the education system: school status)						CFA certificates (apprentice status)			
				Doctorat	e	μ'n	ew Bologna process structure below) Doctorate	Qualified engineer			
High er education 18 years old and above	and ab ove		Level IH	DEA – postgradus DESS – postgradus of advanced spo studies Engineering d	ate degree ate diploma ecialised iploma		Master's degree former maîtrise + DEA or DESS)				
	ears old			Master's de	gree						
	18 y			Bachelor's d	egree	E	Bachelor's degree				
			Level III	DEUG – D DUT-ur BTS - general or te	DUT, BTS						
s oh eel	s old		Level IV	General bascalaureate	Technol baccalau	sgy Vocational eate baccalaureate		Vocational baccalaureate			
Secondary 15-18 year	18 year	rears of					BEP CAP	BEP CAP			
	3-4)	Level V	General education	Technol educati	ogy ion	Vocational education	Vo-action al education				

Figure 1: Simplified diagram of the French secondary and higher education system (and apprenticeship system)

A pluralistic objective of VET baccalauréat

The VETBac diploma was created the context of a crisis in youth employment and in important structural changes in production and labor organization implying new training and qualifications. Its goals were plural. The first was to respond to the growing demand from businesses for highly qualified production and maintenance workers with qualifications between those of advanced technicians, who hold an advanced technical certificate (BTS) or technological university diploma (DUT), and qualified workers who hold a CAP or BEP. A second objective was to respond to the development of new maintenance techniques for personal electronic and computer equipment. Moreover, its creation was also to boost vocational education and to



enhance cooperation and the relationship between business and schools through the compulsory internship period. They were created in close collaboration with employers in the aim to train the VET attendees for specific skills for the labor market needs. They differ from technological *baccalauréats* as they are targeted at specific occupations, whereas the technological *baccalauréats* are broader in scope (electronics, mechanics, etc.).

Vocational Baccalauréat principles

VETBac training lasts two years (there are recently experimentations for preparing the diploma in three years directly from secondary school) and constitutes the final cycle in the vocational route (first and terminal vocational classes). Unlike the technological *baccalauréat*, the VETBac is primarily a vocational certificate leading directly to an occupation; although its diploma also entitles holders to enter university studies. The VETBac provides qualifying training for a particular occupation and admits candidates holding a BEP (or a CAP prepared in two years after the third class) corresponding to the VETBac concerned.

Some								04 Evolution de la répartition des jeunes inscrits en classes terminales (1995-2005)							
	02 Access rate to education level IV									1995		2000		2005	
	(all initial education	courses	combin	ed)						Effectifs		Effectifs		Effectifs	%
	lan muan oracation			,			0/		Bacs généraux	349 100	57,5	319 622	52,1	322 455	52,2
							en %		- S (y compris agricoles)	163 082	47	157 778	49	162 048	50
		1980-81	1990-91	2000-01	2002-03	2003-04	2004-05		- L	89 880	26	66 645	21	59 928	19
									- ES	96 138	28	95 199	30	100 479	31
	Baccalauréat général	22,1	33,4	34,2	33,9	34,1	34,9		Bacs technologiques	173 387	28,6	187 455	30,6	179 897	29,1
	Paccalauróat tachnologique	11.0	17.6	21.7	21.1	20.0	20 E		- STG	86 522	50	99 760	53	93 896	52
	baccalaureat technologique	11,9	17,0	21,7	21,1	20,0	20,5		- STI	51 371	30	46 802	25	44 058	24
	Baccalauréat professionnel	0,0	5,0	14,0	14,2	14,6	14,5*		- SMS	19 119	11	22 650	12	24 667	14
									- SIL	6 988	4	7 562	4	7 916	4
	Ensemble	34,0	56,0	69,9	69,3	69,5	69,9*		- Autre techno MEN	4 683	3	3 442	2	2 /81	Z
	MEN	33.0	54.0	63.4	62.9	63 1	63 7		- Agricoles	4 / U4 9/ 216	ن 120	/ 239	4	115 026	4
			01,0	,	02,0				- Production :	35.010	13,5	51 231	/18	55 796	10,0
	Agriculture	1,0	1,4	2,8	2,7	2,6	2,6		dont annrentissane	3 785	40	9 822	-10 q	11 842	10
	Annrentissaria	0.0	0.6	37	37	3.8	3.6*		dont agricole	594	1	7 933	7	8 264	7
	Арргоплозадо	0,0	0,0	5,7	5,7	3,0	5,0		- Services :	48 306	57	55 159	52	59 230	51
									dont apprentissage	3 227	4	5 881	6	6 616	6
	* Chiffree bacée eur une actimation concernant la formation par apprentiseance								Ensemble	606 703	100	613 467	100	617 378	100
data	source : MEN-DEP (flux d'entrants) et INSEE (effectifs d'habitants)								Lecture : Les % en gras rapport les autres % rapportent les effi (général, technologique ou prot professionnelle représentent 1) de production, dont 10 % en ap Source : MEN-MESR-DEPP	tent les effer ectifs de la l fessionnel). / 8,6 % des ef oprentissage	ctifs de l igne aux Ainsi, à fectifs :	a ligne à l'er effectifs du la rentrée 20 parmi eux, 4	nsemble type de 05, les (9 % sui	des effectif bac concer élèves de te vent une sp	s; né minale écialité

The "Maisons Familiales Rurales": Genesis and Evolution

The first MFR was born in the south west of France in 1937 when a farmer wanted to that one of his children to go further education after his "certificat d'études" (first diploma of the French education system at that time). This visionary farmer, leader of the local professional organization with other interested parents, supported by the parish priest militating for the rural cause, were convinced that to be a successful farmer, it was necessary to acquire more knowledge theoretical and technical. In order to allow their children to get further education and a global approach to the rural area, they decided to buy a house naturally called *Maison Familiale* (family house) and recruited a technician in order to do the young people's training... and to give advice to the parents farmers as well. In 1941 the MFRs chose the status of Association (according to the "French 1901 law") to be able to act quite freely. The same year they created the Union nationale des MFR (National Union for the MFR).



The MFRs are non profit organizations focus on vocational training programs under the responsibility of the Ministry of Agriculture. Nowadays, the organization consists of about 460 associations together in France and developed a world Federation in 1975. They are provided with the means (staff and premises) from the State, the structures and various partners (associations, non-governmental territorial organizations, professional partners..) in order to set up training and development schemes which are based on essential principles: - families' responsibility in the management of the Association and in its choices (which type of training to set up, which people concerned, which financial means ?); - a general training combined with a professional training in relation to real life situations through an alternate training system (apprenticeship, sandwich courses...); - a global approach to education; - the involvement of the young people and adults from the MFR in the development of the area where it is set up with the very close cooperation of all local partners. A MFR works on shared principles (individual and collective responsibility, involvement of the individuals and the communities, implementation of alternate training system and actions of development).

The role of different stakeholders at designing conditions for competence development

Origin of the research, data, methodology and data collection

The research on VETbac of the Vocational *Lycée* was part of a European Leonardo Project "Social representations of VET" (Gendron, 2005). Its aim was to depict how VET is perceived by the different stake-holders. I explored their implementation and functioning. Six vocational *lycées* from Low-Normandy were investigated and 60 people were interviewed (the date were analyzed through a qualitative methodology (focus group) and quantitative and qualitative textual data analyses). The data from the VETbac of the MFR are from a case-study from a MFR in the Midi Pyrénées (Moissac) and the experience reported by the trainers, the director and administrator of the MFR of Moissac. This center has about 140 students (among them 20 VETBac trainees). In this case-study will be analysed the VETBac "Commerce" set up in 2001 in Moissac.

Divergence and Convergence

The two systems (*Maisons Familiales Rurales* from the Ministry of Agriculture and Vocational *Lycée* from the Ministry of Education) prepare to the same Vocational *Baccalauréat* diploma. But regarding the innovative conditions of the competence development through workplace learning, they can differ.

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Convergence:

- Same national diploma, Two years of training
- The public: the trainees are between 18 /19 year olds. They are older than the regular general Baccalauréat trainees because mainly of them have experienced failure situations or schooling difficulties.
- Sandwich courses: periods of times at school and others in enterprises; Compulsory period of training in companies
- All companies have tutor (person in charge of the trainees in the company)
- Companies involved in the trainee and training assessments Innovative and motivated trainers staff focus not only on professional development but also on personal development: developing socio-emotional competencies, assessing and favoring "savoir-être" and rebuilding "hurt people" toward success:

Divergence:

Réussir Autrement

- People trained in the Lycée have a student status versus a work contract with a company (they are "workers"); those latter are called "apprentis";
- A different philosophy regarding its institutional organization: a public organization versus an association of families. The MFR structure implies a certain number of rules. Families are involved and vote for their members in the board of directors. The boards of directors meet regularly in order to ensure a smooth running of the association. Their main preoccupations are about employing and supporting the "moniteurs" (trainers) management, looking for solutions regarding education training and the development of the area. Regular meetings with all the actors and take-holders of the MFR (families, trainers, trainees, tutors from companies...) are the opportunities to analyze the results of the actions started, to decide news actions and fix problems....
- Trainers staff: civil servant teachers- *versus* private contract –trainers- or moniteur; This difference of title is not only on the status but on the philosophy and the art of the job. The teachers are civil servants and teach a certain number of hours per week which are planed in the beginning of the academic year. In MFR, the trainers stay all day long at the MFR center. They were named "monitor" as they have various functions: they guide, animate, help, teach... They favor relationships in the group, they teach, they take an active part in the education aim while supporting each youngster's project. They are qualified to implement the alternate training system and they know very well the MFR's environment, youngsters, their families and the training managers and company tutors. They get involved in the development of the economic area activities where the MFR are located.
- This way of working relates to the different pattern of "alternance". The importance given to the training organisation between « school » and « work » periods varies according the nature of the "alternance" pattern (sandwich courses organizations) and determines its modes of organization.

Diversity of the « alternance » patterns (sandwich courses organization): *juxtapositive* learning system versus *integrative* learning system:

 If in a Lycée perspective, the Vocational lycée are innovative regarding the way sandwich courses are organized and built with companies compared with technical *lycées.* But nevertheless, they also differ from the MFR, and already from the agenda.

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- Sandwich training courses: In the VET Lycée, the periods on the job-training can be organized according the school but mainly at the end of the academic year. During the 2-year program, trainees have 16 weeks of company-training. In the MFR, the agenda is organized in "sessions" sharing training program between two periods of time: a period of work in a company (3 weeks) and a period of study at the MFR center (1 week).
- In a perspective of effective sandwich education, the VETbac sandwich courses organization organized in Lycée remains "juxtapositive" versus "integrative in MFR. Thus, they could be seen as traditional and less innovative. The reason is that in vocational lycée, the sandwich courses are organized according two places and agenda (school and companies) i.e successions of durations and places. Each place and time has their own logic and objectives which might not be necessary linked together. Indeed, the link between the stake-holders can be only institutional but not organizational neither operational. The trainee will have to make the bridges and links between his or her on-the-job-training knowledge and the knowledge provides at school. The trainee difficulties can be this break between the two kinds of knowledge. In some case, the sandwich courses were conceived as a time of socialization, or a first approach of the job reality without a real supervision or without a combined learning experience (school & work). They are only juxtaposition of knowledge, times and places. In such situation, academic knowledge remains predominant and the logic of the training is more focus on certification (diploma oriented) than on professionalization.
- For the MFRs, according their original philosophy, the work situation is at the core of the training system and process. The pattern of "alternance" is seen as an integrative learning system combining work and school learning experience all connected. The knowledge acquired during the period of in-the-job-training is used at the training center as the starting point of knowledge building (except for "traditional academic matters: math..."). This integrative system obliges to coordinate and organized the different periods of training in a collaborative way with all stake-holders. This kind of training program is hard to implement and explain the trainer staff agenda. They all work full time and stay during the all day at the training center. For instance, as the agenda is organized according the company needs, the agenda is weekly organized and reorganized. The integrative pattern is based on the principle that knowledge whatever its sources (from ground experience, from the job situation ...) is valuable and has to be connected with all knowledge in its all. Above all, those experiential learning start in the job situation and are the opportunities to reflect on it and to transform this experience in knowledge. To allow such knowledge building, the MFR has implemented a "Plan d'études". This tool is a set of questions prepared before each companies training periods. Trainees during this period, beyond their professional task in the company have to raise those questions to their tutor to know more about the work, the company and its environment. Back to school trainees discuss this material with their trainers and shared with their peers and then, this material is used as the starting point for a lesson. When some important elements are missing, some extra information are added in the lesson by the trainer. This organization and role of the work knowledge shape different trainees/trainers relationships. Trainers not only train but animate the material given by trainees, they guide trainees'



reflection, they manage the links between companies, visit trainees at the workplace and work with the company tutors. Therefore, the link between traditional trainer/trainee is modified toward a relation of accompaniment between the various places of formation and the types of knowledge, each one finding its own prolongation and use in the other.

Conclusion

Those VETbac programs have taken different shapes but whatever the shape it plays an important role and different roles for the young people enrolled. Those VETBac trainees seem to benefit from a longer period of schooling and the new way to learn focus on workplace learning and its organization in sandwich courses. Moreover, whatever the institution, all trainers staff were motivated and felt invested of a mission: to rebuilt those trainees self-esteem to help them at rediscovering the way to succeed. To do so, trainers innovate in a different way. But it came out that beyond the divergence, the convergence was at designing the innovative conditions to develop competencies by using the workplace as a motivating source of learning, underlining the crucial role of on-the-job training as a key factor of competence development and accomplishment. Precisely, the development of socio-emotional competencies (Oecd-Delsa 2002): autonomy, adaptability, self-confidence, conflict management, catalysing changes, teamwork competencies..., those emotional competencies essential to perform his or her job nowadays were a major clues and key competencies base for trainers in their training whereas they are neglected in traditional and general school system. Those results regarding the competencies developed could be analysed through the conceptual model of Emotional Capital9 (Gendron, 2004).

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⁹ This conceptual model received the 2006 Prize Louis Cros of the Institut of Moral and Political Sciences from the Académie Française, Paris.

Innovation and the Swiss Vocational Education and Training System

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Summary: Internationally, the Swiss VET is considered a Dual System based on the apprenticeship model. Switzerland is seen as a variant of the German model of VET. However the Swiss System is more differentiated on the one hand and more flexible on the other. It is able to react to the demands of the users of the system and to adapt to new developments.

Keywords: Swiss Vocational Education, History

Introduction

Historically the Swiss VET system developed out of legislations concerning the recruitment of qualified workers. By the 1870s the concept of using a plurality of environments to support training had gained ground in order to put greater emphasis on the value of work-based training (Gonon, 2002). Vocational education in Switzerland begins after the completion of compulsory schooling, i.e. 9 years of primary and lower secondary education, most frequently at the age of 15 or 16. Vocational education in Switzerland has two principal goals: to impart vocational qualifications and general knowledge.

Switzerland tends frequently and over-hastily, to be classified as having adopted the German vocational training model, with no regard to the western (French-speaking) and Italian-speaking parts of the country (Tabin, 1989). As a result use is often made of the term "dual system", which itself in Switzerland is used mainly when different types of learning environments – school and firm – are combined in a vocational training system. At first glance this might seem to hold few problems but closer scrutiny demands clarification.

As in other countries, there is a never-ending debate about the future of Vocational Education and Training (VET)-system. A "Dual System" means a dominance of the apprenticeship form within the VET-System: youngsters work and learn about 3 or even 4 days in an enterprise and join school classes for 1, 1 1/2 or 2 days. In fact the Swiss system might be better described as a triple system in that it involves three sites for learning: the factory or business place for three or four days, the vocational schools for one or two days a week and the introductory courses (normally for 3 months in a special centre or workshop). Besides this, there are for certain branches full-time vocational schools. Apprenticeships last from one to four years. The most popular skilled occupations are commercial employee, electrician fitter, cook, polymechanics, hairdresser, computer scientist, car mechanic, carpenter and medical

assistants. The certificate obtained at the end of an apprenticeship is normally a solid basis to find a qualified work in industry and trade. It is also the basis for further education and training within the enterprise or a first step for higher professional education. Until recently apprenticeships were the foundation of quite long careers within the enterprise.

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However, there is no longer such a clear divide between school-based learning and learning in the enterprise. Whereas, historically, vocational schools were intended as a means of supplementing the training provided by employers, they have gradually increased in status. During the last years the importance of school-based learning has grown, due to the fact that work with much higher quotas of female apprentices, such as caring and social work, is now integrated in the VET-System, or due to new schemes which stress more theoretical work and offer chances of continuing to schedules at a tertiary level.

Methodology

The methodology of this paper is based on an historical approach. In this paper the focus is on two terms: innovation and system. To respond to needs of the society and also to the business world is one of the driving forces of innovation. In this sense we re-form our schools or apprenticeships. Innovation has to be accepted and taken forward by relevant partners. So we have a system in flux, which is dependent on the views and ideas of the actors. This is the concept of the historical, pathway-bound and actor-centred institutionalism (Thelen 2002).

In such a perspective I want to sketch in the following the Swiss Vocational Education and Training system.

Results

As Greinert puts it, a system of vocational training is not just characterized by one or several learning environments but as a somewhat more complex construct. For German-speaking countries – or in the Swiss case much better regions – we can speak of a state-controlled market model. It is a system which:

"... is not the outcome of conscious planning and development but has come into being as an integral whole by a complex historical process. For a long time on the job training and instruction provided by the vocational schools evolved more or less independently of one another, only becoming intentionally linked to form a systematic route to a qualification – (...) at a very late date" (Greinert 1993, p.19).

The road to reform of vocational training was long and arduous. In the late 1870s the "Schweizer Gemeinnützige Gesellschaft" (SGG), a public benefit organization, was already discussing social and political participation and integration and further training in what were known as "Fortbildungsschulen" (continuing schools – schools which provided a certain amount of general knowledge in order to keep alive the skills and literacy learned in primary schools). On the other hand, business and industry and local trade associations and the Schweizerische Gewerbeverein (Swiss Trade of Association) that was founded in 1879 were originally in favour of hard protectionism against the industrial products of other countries. Some years late, however, they became more open to training reform. This was due to an investigation of international comparisons and a nation wide recruitment examination of youngsters before entering to the army. This early kind of testing, similar like PISA today, made people aware of the fact that a well-educated workforce is important for

business, industry and society (see Gonon, 2008). On- the- job training was to be supplemented in the part-time further training schools, later known as vocational schools, and in some cases supplementing this by training by full-time schools.

In 1884 a funding law was enacted in Switzerland, which allowed the federal authorities to fund vocational schools and other institutions like public workshops. In 1930 the first legislation on a national level was introduced. The "Bundesgesetz für berufliche Ausbildung" defined the professions in arts and crafts in industry. It was now compulsory for every apprentice to frequent the school courses for one day. It was a board within the department of economy, which coordinated all activities on a national level.

However the "take off" of the predominant dual system in Switzerland and its role for most youngsters after the compulsory schooling occurred after the Second World War. In 1963 there was a small reform of the legislation of 1930. In 1978 a new "Berufsbildungsgesetz" was created. This law regulated the education in a majority of occupations. The most recent legislation was introduced in 2004 – each piece of legislation can be seen as the answer to perceived new challenges, by integrating more and more professions.

The amendments made were designed to underpin and expand vocational training while retaining its existing variety. The dual training model predominant in German-speaking Switzerland owes its existence to the efforts of a number of bodies ranging from occupational organizations and the government to schools, manufacturing firms, parents and apprentices. This kind of development proved to be successful in that it continued to exist with modifications and with an increasing amount of classroom instruction – well into the age of large-scale industry and services.

Moving beyond the opposition between school and workplace learning there is mentioned in the new legislation a third type of learning environment. The idea is a synthesis of learning and work. The new Swiss law on vocational education expressly refers to this third learning environment as a means of combining the advantages of on-the-job-training and classroom learning. In addition, for nearly all occupations there are now introductory courses for young people beginning their vocational courses.

Educational reform as innovation

An evolutionary perspective on educational reform is key to understand why the Swiss system requires stability and continuity but is at the same time surprisingly dynamic. A variety of models and solutions on a cantonal (regional) stage make it possible to view varying features as experiments being conducted in a sort of large laboratory as a basis for decisions on further innovation.

Generally speaking, a cautious attitude is adopted as regards innovation, so that far- reaching changes have little hope of realization. For example, during the 1960s the advocates of comprehensive schools and those wishing to increase the proportion of pupils obtaining the Matura equivalent of the German Abitur found progress hard. Plans announced for reform, therefore tend not to have the aim of radically changing the status quo but of improving the existing system.

Today Switzerland stand out as the European country with a low proportion of students going on to university in any academic year and one of the highest proportions of young adults achieving a vocational qualification. Upper secondary education is consequently divided into two streams a vocationally oriented one attracting most pupils and a general education stream, which, though expanding, accommodates only about 20 % of the Upper Secondary age group. Until 10 years ago general and vocational education were separate and this basic architecture, whose rigid separation probably makes it unique in Europe, has even today been little challenged.

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What has happened over the last few years is that the VET system has become more closely aligned to the education system itself. The main reason for this development is rooted in an attempt of political and economic actors, who seek to strengthen vocational education by establishing a "parity of esteem".

The future of VET in Switzerland

The Swiss education and training system consists basically of two distinct pathways of general and vocational education, which traditionally involved very few crossing points.

In 1993 a "vocational matura", today called the "Federal professional baccalaureate" was introduced. The central idea behind this innovation was to make available through the provision of supplementary instruction running in parallel with vocational education, a nationally regulated means of access to institutions of higher education, the so called "universities of applied sciences". The technical matura thus immediately entitles its possessors to admission to a technically-oriented, generally three-year-course of higher education; the business matura to a one-year-period of practical training in business or administration and then to a three year course in business economics. Alongside these two dominant types of vocational matura there also exist craft, art and design, social work, care and agriculture.

This Professional Baccalaureate was the starting point for a number of additional reforms in VET during the 1990s. This ended with the introduction of the New Vocational Education Law in 2004. The new legislation allows more flexibility in designing pathways and apprenticeships, and integrates further vocational education and also professions like health care and social work.

Despite all of the reforms, introduced over the last few years, the challenge for the Swiss vocational education is quite obvious: the apprenticeship market is in a crisis. There are simply not enough apprenticeship places being offered. Only 30 % of the enterprises run apprenticeship-schemes. Especially in occupations like computing or other prestigious work there is an inadequate supply of apprenticeship places. A lot of youngsters do not find immediately after accomplishing school an apprenticeship and have to stay for an additional year (or even two!) in a specific scheme, preparing them for work or apprenticeship. In addition, an increasing proportion of school leavers are opting for the academic track.

All these elements lead to a debate about the future of VET in Switzerland. Most policy makers and researchers however are (as in Germany) optimistic about the future. They believe that like every market the apprenticeships have their ups and downs but in the long run the market will reach anew equilibrium of supply and demand at perhaps a slightly reduced level.

Others, however, are quite skeptical that it is possible to maintain in the current industrial world and in a knowledge economy this model of two or three places of learning. Qualifications – they argue – are changing so quickly that it is not possible to provide them thoroughly apprenticeship-schemes. So general education is the best way to prepare for future labor market demands. This trend will be also reinforced through the choices of the youngsters themselves.



Perhaps it is wrong, however, to present these two alternatives as exclusive models. It is quite possible that both positions are right and that the future of VET is an integrated model in the educational system, with some sectors still providing apprenticeships and others being more strictly school-based. In this perspective dual systems and mainly school-based systems will merge to an integrated model, not only in Switzerland but also everywhere in Europe.

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Apprenticeship in the United States: Patterns of Governance and Recent Developments

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Summary: The share of US workers who undertake apprenticeship training is small compared to most other OECD countries and compared to the number of workers who undertake postsecondary education. However, the scale of the US apprenticeship is large compared with the training funded through the federal Workforce Investment Act. Historically, US apprenticeship programs have been highly concentrated in construction, manufacturing, and other selected fields, including public safety and some military occupations. In recent years, however, the Office of Apprenticeship of the US Department of Labor has funded efforts to establish apprenticeships outside these traditional sectors, in such occupation-industry clusters as nursing, information technology, geospatial, advanced manufacturing, and maritime occupations. This paper describes aspects of the governance of the registered apprenticeship system in the US, examines recent initiatives from the Office of Apprenticeship to expand apprenticeship, and analyzes new evidence about how apprenticeship sponsors view the system.

Keywords: governance, sponsors, training, industry, occupation

Introduction

The US trains only a modest proportion of its work force through apprenticeships. Under the registered apprenticeship program mandated by law and regulated mainy by the federal government, nearly 450,000 workers receive apprenticeship training. Although not recognized officially by the US Department of Labor (USDOL), some unregistered positions that involve coordinated work-based and school-based training may nonetheless be called apprenticeships by many workers and firms. In 2006, about 1.5 million individuals in the US National Household Education Survey reported having participated in "a formal program in the 12 months prior to the interview that led to journeyman status in a craft or trade" (O'Donnell 2005). Still, only a modest number of US workers are trained in apprenticeship compared to over 17 million who receive training and education in colleges and universities.

Apprenticeships in the United States have been increasing in recent years. Between 1997 and 2003, apprentices increased by 25 percent increase nationally (Bennici et al. 2004), and one state, North Carolina, has doubled the number of apprentices since 2000. Currently, the number of individuals receiving training in apprenticeship per year is about as high as the combined number of participants receiving training through the Workforce Investment Act's Adult and Dislocated Worker programs, the Job Corps, and the Trade Adjustment Act. Federal training outlays for these Department of Labor programs were about 70 times the total outlays of the Office of Apprenticeship (Mikelson and Nightingale 2004).

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This paper looks briefly at three questions about the US apprenticeship system:

- How is the system governed?
- What recent initiatives have been undertaken to expand apprenticeship?
- How do program sponsors view the current system?

Governance and Recent Initiatives

The Office of Apprenticeship (OA) within the Employment and Training Administration (ETA) of the U.S. Department of Labor oversees the U.S. system for certifying and regulating apprenticeships. Potential sponsors of apprenticeships may be individual employers, groups of employers, or joint union-employer groups. They design the content of the training, organize and manage the activities, and register the programs through the federal OA or with a state apprenticeship agency (SAA) recognized by the OA in 26 states. Unfortunately, some state agenices do not take much responsibility; they allocate few resources to servicing apprenticeship sponsors or expanding the program.

The OA requires that programs must meet a set of standards to qualify as a *registered* apprenticeship program, including:

- fair application procedures;
- a schedule for the apprentice to receive training and work experience in the field;
- organized instruction in technical subjects required for the occupation (usually at least 144 hours per year);
- a progressively increasing schedule of wages;
- proper supervision of on-the-job training with adequate facilities to train apprentices; apprentice's progress, both in job performances and related instruction is evaluated periodically and appropriate records are maintained; and
- no discrimination in any phase of selection, employment, or training.

The US system is highly decentralized. On average, the typical program has only about 15 apprentices, with perhaps four or five starting each year. In addition, program sponsors are usually not bound by externally developed industry standards for determining the skills taught, the nature of work-based learning, the specific content of classroom instruction, and the tests of competencies. Often, the content of the programs is developed by individual firms, with more or less coordination with the national office. This approach contrasts apprenticeship programs in other countries, which rely on representatives of industry, workers, and government to set minimum skill standards and to provide external tests of competencies. Even in the United States, however, apprenticeships offer minimum standards in apprenticeable occupations and occasionally use external competency-based assessments. The firm-based nature of programs is one reason apprenticeable occupations are narrower and more numerous (about 850) than is the case in countries with much larger apprenticeship systems. Another reason is the OA's lack of resources in

rationalizing the existing mix of occupations into a well-designed structure of modern occupations with the appropriate amount of breadth.

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Another aspect of skill standards is embodied in state licensing laws and regulations. About one in five workers requires a state license to practice their occupation, up from less than 5 percent in the early 1950s (Kleiner 2006). Some of this increase has resulted from rapid growth in traditionally licensed occupations, such as physicians, dentists, and attorneys. But, the number of licensing laws has been increasing as well. Licensing rules vary widely across states, with many states regulating occupations as varied as alarm contractor, auctioneer, manicurist, and massage therapists.

The responsibilities of the OA include issuing certificates of completion to apprentices, protecting the safety and welfare of apprentices, providing guidance and technical assistance to program sponsors, monitoring program equal opportunity plans to prevent discrimination against women and minorities, and expanding the use of apprenticeship by employers. Unfortunately, the budgetary resources are minimal in relationship to these responsibilities. As if 2007, only about \$20.8 million was allocated to the OA, almost all going for salaries. Changes in the budget reflect a sharp reduction in capacity. Between 1977 and 2007, the inflation-adjusted budget has declined by about 50 percent and the number of workers dropped from 462 to 139 while the U.S. labor force increased from 92 to 145 million.

Despite severe budget constraints, the OA has embarked on initiatives in selected industries and with selected national employers, and new approaches to certification. For four industries, nursing, information technology, geospatial, advanced manufacturing, the federal government funded projects to create new apprenticeship standards. The Council for Adult and Experiential Learning produced a Nursing Career Lattice Program that involves apprenticeship in Certified Nursing Assistants, Licensed Practical Nursing, and Registered Nursing. The Computing Technology Industry Association (CompTIA) received a grant to expand the National Information Technology Apprenticeship System (NITAS).

In proposed regulations issued in December 2007, the OA specified rules aimed at broadening the appeal of apprenticeship. The first involves widening the scope for using competency-based standards instead of relying only on standards that require a minimum number of hours of relevant work experience. The second is to recognize selected shorter apprenticeship programs by awarding "interim credentials." Currently, interim credentials are part of the nursing apprenticeship program already operating in a number of hospitals. A third change is to expand the role of reciprocal recognition of standards that have in the past varied by states. Under the proposals, all registered apprentices would have their credentials recognized throughout the US. A fourth effort is to expand linkages between apprenticeship and other parts of the job placement and training system.

A fifth initiative aims at improving data on apprentices and programs. Because of the federal-state structure, not all states are part of the federal data collection system. Nonetheless, information on apprenticeship registrations is increasingly up-to-date and usable for management decisions. Finally, the OA was able to obtain funding for a national survey of apprenticeship sponsors. The next section briefly describes the survey and summarizes key findings.

What Apprenticeship Sponsors Think

In early 2007, the OA sponsored a study of registered apprenticeship sponsors to learn about what motivates and troubles sponsors; what they value, dislike, or would like changed; what they see as the main benefits and costs of apprenticeship; the types of data they maintain on apprentices; and their contacts with the One-Stop Centers in regard to apprenticeship. To capture this information, the OA worked with contractors to design and field a nationally representative survey of apprenticeship sponsors. The survey took place in the spring of 2007 and yielded 947 completed interviews (Lerman et al forthcoming).

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About 42 percent of sponsors were in the construction industry. Apprentices from these construction programs made up nearly three quarters of apprentices in the sampling frame. About 60 percent of sponsors who participated in the survey had registered apprenticeship programs that served only one employer. Only about one-fourths of sponsors were joint union-management programs.

The results of the survey indicate a high degree of approval of apprenticeship. Nearly 87 percent of sponsors report they would strongly recommend registered apprenticeship and another 11 percent would recommend apprenticeship with some reservations. Only about 2-3 percent answer that they would not positively recommend apprenticeship. Nearly all sponsors report that the apprenticeship program helps them meet skill demands. Other important benefits of apprenticeship noted by sponsors include reliably documenting appropriate skills, raising productivity and worker morale, and reducing safety problems. Only 5 to 8 percent do not find these benefits of apprenticeship at all important.

Sponsors report high completion rates. For 44 percent of sponsors, completion rates for their programs are 90 to 100 percent. These high completion rates are especially common in the aerospace, automotive manufacturing, energy, health services, retail, and transportation industries. Sponsors (36 percent) often point to personal issues as a main reason for non-completion over other reasons in the survey. Performance problems are the next most commonly cited reason for non-completion. The dropout problem is viewed as significant by over 20 percent of sponsors. But only 11 percent of sponsors mention significant problems with other issues.

Almost 30 percent of the survey respondents say non-completion is due to apprentices earning a craft license and then taking another job before completing the program. Nearly 11 percent of sponsors see transferring to another apprenticeship program as a main reason for non-completion of their program. These factors are particularly important for sponsors in the construction industry.

Surprisingly, only about one-quarter of sponsors regard poaching as a significant problem. In fact, 46 percent of sponsors view poaching as not a problem at all and another 29 percent perceive poaching as only a minor problem.

The survey evidence reveals only moderate involvement with the broader public workforce system. Over 70 percent of sponsors report no interactions with local Job Service or One-Stop centers; only 17 percent said they use a One-Stop or Job Service to post apprenticeship openings and 16 percent report having applicants sent by the One-Stop or Job Service.

The provision of related instruction typically takes place through community colleges and technical colleges. These two institutions account for over half of all providers of related instruction. Sponsors generally give high marks to the quality of related instruction. Over 80 percent rank the instruction as excellent or near

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excellent (4 or 5 on a five point scale). Only 5 percent (or about 50 respondents) indicate that the instruction quality is poor or near poor (1 or 2) and about 13 percent viewed instruction as average (3). Higher quality of related instruction appears to lead to a higher percent completing apprenticeship.

Over 56 percent of sponsors say they were interested in learning about or how to use competency-based apprenticeship training. Middle sized programs are especially interested in these types of programs.

Implications for the Future

Sponsors of registered apprenticeship expressed great satisfaction with their programs. Over 80 percent view apprenticeship as providing a very important benefit of meeting demand for skilled workers, and over 65 percent think that raising productivity, strengthening the morale and pride of workers, and improving worker safety are very important benefis.

A common critique of apprenticeship is that firms have few incentives to provide general training because competing firms will bid away apprentices once they reach a high level of skills. Surprisingly, this theoretical problem is real and significant only for about one in four sponsors and not perceived as a problem at all for nearly half of all apprenticeship sponsors. Moreover, even among sponsors who perceived poaching as an important problem, about 85 percent still strongly recommend apprenticeship to others.

The data suggest that existing apprenticeship sponsors could be used to help market the program to organizations not currently sponsoring apprenticeship. Since nearly all existing sponsors say they would strongly recommend the apprenticeship concept to other employers, many could be used in marketing efforts undertaken by the Department of Labor, especially in industries with only a modest penetration of apprenticeship at this time.

Finally, developing evidence that apprenticeship is cost-effective is likely to assist efforts to market apprenticeship to employers and to persuade policymakers about the value of apprenticeship.

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The long winding road to Ireland's 1993 national apprenticeship programme

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Barry Nyhan

Abstract: This paper discusses the development of Ireland's national apprenticeship programme, introduced in 1993, against the backdrop of the country's changing social, and economic developments within which it was entwined. This apprenticeship programme came into being in Ireland as a result of the main socio-economic stake holders (employers, trade unions and government) agreeing to an historic 'social partnership' national framework Programme for Economic and Social Progress (PESP) in 1991 dealing with a range of economic, social and labour market issues. This social partnership agreement represented a radical departure for Ireland whose industrial relations climate up to then was characterized by infighting and defending sectional interests to the detriment of economic and social development. The PESP programme included a specific objective to introduce a high quality regulated apprenticeship programme.

Introduction

The key factor making for the success of the 1993 Irish apprenticeship programme, which received positive reviews internationally (Ryan, 2000) was the collaboration of all the actors (employers, trade unions, educational and government industrial and labour market bodies) in working together institutionally to implement a high quality system. In particular, in contrast to previous decades, a new spirit of cooperation came into being between employers and trade unions and between educational institutions (Institutes of Technology) and the main government labour market executive body, FAS (Training and Employment Authority).

The contribution of the government department dealing with labour market policy and FAS, which coordinated the design and implementation of the apprenticeship programme, but in particular won over the commitment of employers to sponsor the programme and ensured a substantial financial commitment from them to match that of government, deserves special mention (Boyle, 2005).

This paper which is based on secondary sources presents and discusses the events making for the successful introduction of this national regulated programme in 1993.

Social partnership – the basis for a successful apprenticeship programme

The 1987 Programme for National Recovery was the occasion for a dramatic change in Ireland when the government and main parties in the Irish Parliament came to a historical consensus about dealing with the enormous national fiscal deficit. This ended a period of massive public borrowing and issued in a period of fiscal austerity. Trade unions took the courageous step to go along with the government's proposal for a new way forward in agreeing to collaborate with government and employers in a 'social partnership' coalition to devise and implement

a recovery programme¹⁰. Thus began the Irish 'social partnership' model for steering economic and social affairs that continues to this day and is seen by many people as the key to the emergence of the Irish Celtic Tiger ¹¹.

Boyle (p.32) states that " the startling outbreak of social peace amongst employers and employees and the end to adversarial party politics" provided the context for a new powerful active labour market policy coalition, including employers, unions and most political elites that introduced reforms in many areas including apprenticeship. Thus, the first all embracing social partnership 'Programme for Economic and Social Progress (PESP), agreed in 1991, and a direct result of the 1987 historic agreement, contained a commitment to introduce a new 'standards based' apprenticeship programme.

The social partnership PESP agreement gave the 'political' imprimatur and backing that ultimately led to the successful implementation of the recommendations of a 1989 report on apprenticeship. This report was highly critical of the lack of employers' involvement in apprenticeship training, giving rise to market supply and demand failure. Employers underinvested in training and preferred to poach skilled workers from other companies or cherry pick those coming off the state sponsored (FAS) first year off the job apprenticeship programme. (Boyle, p. 24) Since the mid 1970s about a third of all apprentices starting annually undertook the first year of their off the job training in a FAS (at that time AnCO) training centre. This training was funded by the state with substantial support from the European Social Fund (ESF). Very many of these apprentices did not have contracts with an employer. The government felt that it was pushed into running the FAS programme due to the reluctance of employers to train apprentices. They were able draw down monies from the ESF to finance this. In fact this was a mixed blessing as it allowed the key apprenticeship players – employers - to exempt themselves from the process.

The 1989 report stressed that this situation was totally unacceptable and that a sustainable apprenticeship programme by its nature must be sponsored by employers who are the main beneficiaries of the programme.

It made the following other recommendations :

- a) that apprenticeships be 'standards based' with precise specifications of the competence levels to be attained and the curriculum to be followed for each craft, rather than a mere specification of length of time to be served (although it did propose that this should be normally three years);
- b) that it be mandatory for all future craft workers to have a National Craft Certificate.;
- c) that there be a good balance between 'on the job learning' and formalised 'off the job' education and training following a modular broad curriculum.

In relation to the governance of the an apprenticeship programme, the report proposed that a National Advisory Apprenticeship Committee (NAAC) comprising

¹⁰ According to Boyle (2005, p.32) "social partnership secured a corporatist bargain"...that was the Irish equivalent of the Dutch 1982 Wassenaar or the Swedish 1938 Saltsjobaden Accords.

¹¹ The current Prime Minister (Taoiseach) of Ireland, Bertie Ahern, has stated many times that the major factor contributing to the success of the Celtic Tiger was 'social partnership'.

employers, unions, government labour market bodies and education institutes be established to design and steer a new programme..

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The new social-partnership climate and the improvement in the economy with the emerging Celtic Tiger in the beginning of the 1990s meant that these recommendations stood a good chance of being adopted. The PESP social partnership agreement in 1991 provided the impetus for action to be taken. A National Apprenticeship Advisory Committee (NAAC) was set up to act as a steering committee for the design and implementation of the initiative which included representatives of education, employers and unions. The NAAC made FAS responsible for drafting the plan. (Boyle p. 48)

However, there were many obstacles to be overcome before agreement on the shape of the programme was reached. The employer and education wings in particular fought hard to gain leadership of the programme in accordance with traditional battle lines. Basically while employers supported a standards-based apprenticeship system, they argued that the state should pay for it but that they (employers) were the best people to control it. The Education wing fought for an education-driven curriculum arguing that their academic credentials and superior scientific and technological knowledge would put them in the best position to lead the delivery of the programme if only they were provided with the resources that FAS was given 12. They pointed to vocational educational systems in countries such as France and Italy as a way to proceed. (Boyle p.49)

Boyle (p. 49) ascribes a major role to the part played by the Department of Enterprise and Employment) and its executive agency FAS in conjunction with the members of the active labour market coalition, in wining the battle with employers 13 and education to give control over the design and implementation of the programme to FAS.. A key role was seen to have been played by Kevin Duffy, the Trade Union representative of the FAS board.

In the end the following was agreed :

- a) a standards-based programme was to be drawn up for each craft with the agreement of all the stakeholders, that would normally take four years (200 weeks) to complete;
- a National Craft Certificate became a compulsory requirement for recognition as a craftsperson;
- c) employers would effectively sponsor the programme : they were responsible for recruiting apprentices, giving them an employment contract, undertaking and monitoring on-the-job training and seeing the whole process through ;
- d) educational bodies would have a major say in setting standards and would run the education block release ;

¹² However the government felt that education would 'over–academicise' the programe, did not have an adequate understanding of the key on the job learning phases and on top of that were too expensive

¹³ According to Boyle (2005, p.48) "FAS believed that employers would have to be cajoled, if not coerced, into supporting a system from which they would benefit in the long run".

e) A seven phase modular curriculum with alternating on and off the job training was adopted : phase one lasting about 16 weeks took place in the employer's work place; 20 weeks was allocated for phase two consisting of off-the-job training in a FAS training centre; phases four and six, each lasting for a 10 weeks block took place in an educational institute (Institute of Technology); phases three, five and seven consisted of on-the- job training at the work place, assessed at regular intervals by FAS and lasting in total about 144 weeks)

Successful implementation of the programme

Helped by the favourable economic condition in the early and mid 1990s, the programme took off with a bang in particular in the construction sector which had problems in supporting quality apprenticeships in the past. The programme attracted school leavers who had far higher qualifications that the minimum required with about 70 per cent of them having an upper secondary school academic qualification. The minimum entry qualification was a lower secondary 'pass' (ordinary level) qualification.

On successful completion of all written and practical assessments for both on-thejob and off-the-job training, a National Craft Certificate was awarded by the Further Education and Training Awards Council (FETAC) which is rated at 'Level 6' (equivalent to an Advanced Certificate or Higher Certificate) within the Irish National Qualifications Framework. ('Level 7' covers Ordinary Level Bachelor normally a university degree.)

Growth of programme

In response to demand by employers, the number of registered apprentices grew from 10,000 in 1996 to 14,000 in 1997, 17,000 in 1998, 21,000 in 1999, 24,000 in 2000, 25,000 in 2001 and 26,000 in 2002 and 26,659 in 2003 (FAS 2003). The breakdown in the five trade families which grouped together 25 designated trades are shown in table 1.

Trade Family	2003	Percentage
Printing	128	0.5%
Electrical	7,993	30.0%
Motor	3,060	11.5%
Engineering	2,435	9.0%
Construction ¹⁴	13,043	49.0%
TOTAL	26,659	100%

Table 1 : Number of apprentice	s by trade families in 2003
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About 10 to 15 per cent of a school leaver cohort follow a designated apprenticeship route. (FAS, 2005, p. 17)

¹⁴ Furniture used to be a separate family, but since 2001 has been subsumed under Construction

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To examine how the programme was being implemented, a follow up study of a sample of the 7,513 people 15 who started their apprenticeships in 1999 was undertaken in December 2006 and January 2007 (FAS, 2007). It was found that 74 percent completed their apprenticeships. Ninety two per cent of them were working in the trade that they qualified in but only 50 per cent with the same employer. Over forty per cent of the Construction craftspersons were self employed or owned their own businesses. The average net income of the respondents surveyed was Euro704 per week. Interestingly, just over half of those surveyed deemed it necessary to have a Craft Certificate to gain employment. This drops as low as 40 per cent for those in the Construction trades.

The level of satisfaction with all phases and aspects of the apprentice programme, without exception, was very high. Over half the respondents had no suggestion for improvement of the programme. The top suggestions among those who made a suggestion were to shorten the phases and to have more practical work and less theory.

Table 2 : 25 craft trades designated by FÁS:Aircraft mechanic	Metal fabricator	
Agricultural mechanic	Motor Mechanic	
Bookbinder	Originator	
Bricklayer/stonelayer	Painter/ Decorator	
Cabinet maker	Plasterer	
Carpenter/Joiner	Plumber	
Carton Maker	Printer	
Construction Plant Fitter	Refridgeration Craftsman	
Electrician	Sheet Metalworker	
Fitter	Tool Maker	
Floor/Wall Tiler	Vehicle Body repairer	
Heavy Vehicle Mechanic	Wood machinist	
Instrumentation Craftsman		

The 25 designated apprenticeships

Conclusion

While the modest 10 per cent participation of a school leaver cohort in the Irish apprenticeship programme is significantly lower than the German 60 per cent rate and the Danish and Austrian 40 per cent participation rates (Ryan, 2000), the implementation of a well functioning, relatively low cost and employer sponsored system, with a well functioning education input, is nevertheless a significant achievement. After decades of efforts by Irish labour market policy makers, a national

¹⁵ Almost 70 per cent of these had an upper secondary qualification. Forty percent of them were following apprenticeship in Construction and 30 per cent in Electrical trades.

institutional framework programmes overseen by a coordination body comprising all the stakeholders, now exists.

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This achievement can be put in context when one takes into account the view of Soskice (1993) that Ireland was institutionally unsuited to apprenticeship. Ryan's comment about the length of time (and political effort) that "it has taken for (Ireland's) culture to send economic policy in a different direction from that of the UK" also puts what has been achieved into perspective (Ryan, 2000, p.61). Ryan goes on to say that regarding Ireland's apprenticeship programme "institutional development in Ireland has moved towards a continental approach in three respects : the linkage of apprenticeship to the education system; the development of social partnerships for the design and administration of apprenticeship; and the adoption of a statutory framework to underpin the whole. The development has been consensual, taking the time necessary to win support and commitment from the social partners, helped also by generous public funding" (Ryan, 2000 p. 63)

Three factors can be singled out as enabling Ireland to introduce its apprenticeship programme along the lines outlined above. The first of these is the institutional learning by Irish government labour market officials, employer and trade union officials about continental social and economic policies. This took place through participating in European Union (EU) social dialogue and social fund policy making arenas before and since Ireland's entry to the European Economic Community in 1973. According to Prondzynski (1992) this learning led towards a "stronger social policy (in Ireland) in the context of what one may describe as a more Germanic' system of industrial relations" (1992, p.85). The continental European Union language of 'social cohesion' and 'social partnership' became part of Irish discourse. This saw reality on the ground in the various European Social Fund programmes whose regulations stipulated that they be steered by joint social partnership committees. EU Social Fund and vocational education programmes were the source of a growing awareness of the comparative strengths of social partnership steered training agendas including those of apprenticeships. In relation to the question of what kind of a economic model the Irish Celtic Tiger has followed in relation to the contrasting 'neo-liberal market driven' or 'coordinated market driven' archetypal models of Soskice, Boyle (2005.p.12) argues that instead of identifying paradoxes in the Irish model, one should look towards how different components of Irish society fit together in a unique way. Two concepts that might assist us in understanding the kind of reality Irish style social partnership has given rise to are that of 'competitive corporatism' (O'Donnell, 2004) and the 'flexible developmental state' (O'Riain, 2003).

The other two enabling factors were the favourable economic conditions during the 1990s in Ireland and the role played by the government department with responsibility for labour market policies and its executive agency FAS in building an active labour market alliance to push through the programme and counter the strong employer and education lobbies who wanted control of the programme. Thus while employers were leveraged to sponsor the programme, the education wing likewise was persuaded to play its key off the job educational support role.

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Summary: The paper presents a comparative qualitative analysis of governance structures in the dual VET systems of Austria, Denmark, Germany and Switzerland. First a theoretical framework for the classification of plural systems like dual apprenticeship training is discussed. It is argued that governance in VET can be described according to the coherence of the system on the one hand and the rationale of agency on the other, and that four ideal types of VET governance can be distinguished. We then present a methodology to implement this framework in data collection and analysis on the basis of desk research and an evaluation tool for expert workshops. In the final section some results of the comparative studies and the expert workshops are discussed.

Keywords: governance, evaluation, input orientation, output orientation

Introduction

The topic of the present paper is a comparison of governance structures in the dual systems of vocational education and training in Austria, Denmark, Germany and Switzerland. This study was carried out in the context of a project that aims to assess the performance of the German VET system with a particular emphasis on the optimisation of administrative structures. Part of this comparative analysis was the classification of the different VET systems within a theoretical model of educational governance that shall be described below.

In vocational education and training three ideal types of regulation and governance are usually distinguished as the dominant influence may come either from the state, the market or the professional groups. Therefore one can draw a distinction between state-controlled, market-driven or occupation-based corporatist VET (Clematide et al. 2005, p. 3; see also Greinert 1998, pp. 19–22). However, a characteristic feature of cooperative vocational education and training like the dual system of apprenticeship is that due to the pluralism of bodies involved there is always an overlap of at least two of these governance models. These systems in which the administration and implementation of VET takes place by means of a cooperation between state bodies, enterprises or employers' associations as well as trade unions or professional organisations may be referred to as "mixed" or "plural" systems of governance.

In practice the two most important examples of mixed VET systems are the models of alternance and dual apprenticeship training. In the case of alternating training the phases of school instruction and in-company training alternate in

relatively long periods, and the vocational school remains the dominant learning venue. Curricula are usually fixed by state authorities, and despite the involvement of enterprises the state has a dominating role in this model. In the dual system, on the other hand, the VET system is composed of two separate but complementing sectors, namely a sector of in-company training organised and administered by the enterprises and the social partners, and a school sector for which the state is responsible. Although at first glance this appears to be a combination of state-controlled and market-driven governance only, there can also be a considerable influence of corporatist governance by the occupations and professions.

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In general these mixed models of governance might be classified according to two principles that represent different dimensions of governance. The first of these is the degree of coordination between the various bodies involved in the process, i. e. the integration of the system. A system might thus be located within a continuum that reaches from a totally "fragmented" governance to a perfectly "coordinated" one. The other dimension is the rationale of the agents' behaviour or agency that forms the basis of the governance process. One can distinguish here between input orientation, which means that the process is mainly influenced by rules and by the available resources, and output orientation, i. e. the process is governed by the targeted products and services. Whereas the former is typical of the traditional bureaucratic model of public administration, the latter is a key feature of the New Public Management approach that claims to increase the efficiency of the public sector by means of management techniques adapted from the private business sector (Osborne & Gaebler 1993; Spicer 2004). These two dimensions allow for the development of a grid with four cells that represent the different versions of plural governance systems in VET (see figure below).

Figure 1: Governance types in vocational education and training

	low	high
of agency	Fragmented output-	Coordinated output-
Output	oriented governance	oriented governance
Rationale	Fragmented input-	Coordinated input-
Input	oriented governance	oriented governance

Integration

This theoretical framework was operationalised in a qualitative research design based on desk research and additional expert workshops. The details of the methodology are described in the following section.

Methodology

A number of indicators was defined to capture the two dimensions of integration of the system and rationale of agency. The first one is the consistency of the legal framework. Another indicator is the cooperation of the various bodies and especially

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the institutionalisation of a VET dialogue that includes all relevant stakeholders such as government, administration, vocational schools, social partners and VET researchers. The integration of the system can also be measured by means of the allocation of strategic and operational functions to the different levels of government. It is assumed that a systematic allocation with little or no overlaps indicates a high level of integration. The criteria allow for the positioning of VET systems within the grid discussed above by means of expert interviews. To this end seven criteria were formulated, of which five represent the dimension of integration and the other two represent the dimension of input and output orientation. The criteria are the following:

- 1. Consistent legal framework
- 2. Cooperation of the various bodies
- 3. Innovation strategies
- 4. Balance of relevant policy areas
- 5. Allocation of strategic and operational functions
- 6. Outcome orientation
- 7. Input orientation

In addition to the desk research carried out on the basis of the theoretical framework an evaluation tool was applied to obtain further information on the classification of the VET systems in Austria, Denmark, Germany and Switzerland according to the seven criteria. This evaluation tool consists of a questionnaire in which the seven main criteria are operationalised by roughly 30 sub-criteria. Respondents are asked to evaluate the sub-criteria on a scale from 1 (= criterion is not realised) to 10 (= fully realised). In addition they are asked to assess the relevance of the main criteria for the adequate performance of the VET system by weighting them in per cent. The tool was applied in four expert workshops in Berlin, Copenhagen, Vienna and Zurich in November 2007.

Results

A major result of the country studies and the evaluation workshops was that in Germany the fragmentation of VET governance is particularly strong while in Denmark and Switzerland there is a remarkable degree of coordination. Austria assumes a somewhat intermediate position.







Figure 2: Governance in dual VET systems in transnational comparison

Especially Switzerland with its pronounced federalism and language pluralism has a well-developed and coordinated system of dual vocational education and training. The responsibilities are allocated to the national, regional and local levels so as to ensure a good equilibrium of strategic and operational functions according to the principle of subsidiarity. The new Vocational Education Act that came into force in 2005 enacted a fundamental reform of the VET system, following a constitutional amendment in 1999 that concentrated the legislative power for the entire system of vocational education and training (except university education) at the federal level. The Swiss Federal Institute for Vocational Education and Technology (BBT) became the central institution for the coordination of the VET system. At the same time all stakeholders in vocational education contribute to the development of VET in accordance with the principle of subsidiarity.

In Austria the coordination of the various bodies in the VET system works better than in Germany due to the stronger responsibilities of the federal government.

After the reforms of the past decade Denmark can be regarded as the embodiment of coordinated output-oriented governance. This is illustrated by the fact that the political responsibility is concentrated in one body as it is exclusively with the

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Ministry of Education, which also ensures the coordination of general and vocational education (see Cort 2005, pp 13–16). The ministry guarantees that VET programmes comply with the guidelines of educational policy. The ministry supervises the vocational colleges that offer basic and main courses in vocational education and training. All strategic functions like the development of occupational profiles or the recognition of qualifications are located at the national level as an institutionalised cooperation of all stakeholders. This dialogue includes the Council on Initial Vocational Training as the main advisory body as well as eleven trade committees that collaborate in the preparation of framework curricula. At the local level, on the contrary, all operational functions are located, which include also the development of concrete school and training curricula as well as the outline of individual training plans. The main actors at this level are the vocational colleges, the training companies and the local VET committees (see Cort 2005, pp. 16–18).

The Danish system is also characterised by a strong outcome orientation. This is shown for instance by the autonomy of the vocational colleges and the absence of detailed regulation from the national government. The colleges are independent public institutions with their own budgets and a performance-based funding scheme, which have the power to develop their own curricula and training plans within the national framework. This means that the process of curriculum development starts at the national level and is continued at the lower levels as a process of increasing differentiation and individualisation, which ultimately leads to the formulation of individual education plans for the trainees. However, this principle of individualisation has little effect in practice, given that the local organisation of VET is still strongly influenced by the class structure of the colleges.

To some extent the German system can be regarded as the opposite model to the Danish system. A long tradition of decentralisation has led to a strongly fragmented governance system, as is already shown by the separation of the legislative powers for the two branches of vocational education and training. Whereas the school part of the dual apprenticeship training and the school-based programmes of VET are under the responsibility of the states (*Länder*), the federal government is responsible for the in-company training within dual VET. Finally, the domain of continuing vocational education and training is characterised by an uncoordinated multitude of both federal and state regulations.

A distinctive feature of the German system is therefore the distribution of virtually identical functions across different levels of government. In addition there is a heterogeneous involvement of government departments as the ministries of education are responsible for vocational schools whilst the supervision of in-company training is with the ministries of economics or the ministries of labour.

Like Germany and Switzerland, Austria is characterised by strongly developed federal structures. However, contrary to Germany the responsibility for educational policy is concentrated at the federal level, and this applies also to vocational education. The states are responsible for the implementation of education. The Federal Ministry of Education is the supervisory body for the entire system of education. In recent years a number of reforms were implemented that followed the modern principles of deregulation and decentralisation, but the dominant paradigm of administration is still juridical and bureaucratic. With some reservation the Austrian system might therefore be considered as an example of coordinated input-oriented governance.



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Workshop II

Chair: Peter Schlögl

Designing Optimal Conditions for the Development of Competence Through on.the-Job Learning



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Despite the growing use of Information and Communication Technologies for learning, there has been only a limited use of e-learning for work based learning. Whilst most large enterprises have installed some form of Virtual Learning Environment, empirical findings suggest little use of e-learning in Small and Medium Enterprises. Where e-learning is being used to support apprentices, this is usually for the formal school based part of the apprenticeship programme.

The ICT and SME project, which undertook 105 case studies in seven European countries found few instances of formal e-learning (Attwell ed. 2007). Yet computers were being used extensively in the workplace and the project found that computers were often being used for informal learning. The main motivation for such learning was problem solving but personal interest was also a significant driver for such informal learning. SME employees were not using educational software applications but common business application, email, web browsers and word processors.

This work led to further research into how to develop software applications to support such informal learning and to bring together informal learning in the home and the workplace together with more formal school based learning. This has led to the idea of e-Portfolios and Personal Learning Environments. Whilst Virtual Learning Environments are controlled by institutions e-Portfolios and PLEs are controlled by the learner. E-Portfolios can potentially include all learning, regardless of context and including informal learning. E-Portfolios can be developed over time, providing a record of not only an employee's apprenticeship development, but continuing education and training, both work based and in school and through formal and informal learning.

Our research has suggested that peer groups are an important source of learning, through social networking. Whilst some companies are trying to ban employees from accessing social networking applications in work, others such as Cisco and IBM are attempting to utilise social networking as a collaborative form of knowledge development.

Research has also pointed to the potential use of multi media and mobile devices for capturing work process knowledge directly in the workplace through the use of podcasting (audio), video and photographs. This may also be of help to vocational learners not used to extensive writing (Attwell et al, 2007).

Finally, our research and development work has pointed to the potential of using PLEs and e-Portfolios for developing common knowledge repositories through sharing the outcomes of learning and work. Thus apprentices can contribute to the development of organisational knowledge.

The research has led to the development and testing of Freefolio – a social e-Portfolio and lightweight knowledge management system (Attwell, 2007).

- Freefolio supports:
- Scalable social networking
- Knowledge construction

- imAc
- Information dissemination.

It is a flexible system based on Wordpress and can easily be customised to suit particular learner and organisational needs. At present Freefolio is being piloted for continuing professional development and for careers development planning in schools. In the next twelve months we are planning a major pilot with apprentices within companies and vocational schools.

The paper will review the research and development activities and seek to explain how Web 2.0 and social software applications and tools can support competence development and apprenticeship in the workplace.

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The relevance of the dual system to English VET

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Summary: This paper is about the relevance of other European vocational education and training (VET) systems to the current debate about 14-19 education in England and to the question of developing high quality and sustainable routes for those preferring vocational education to 'A' levels and subsequent entry into Higher Education. The Nuffield Review has already demonstrated many issues confronting English 14-19 Education. Some of these are longstanding, such as the excessive academic divide and the conceptual confusion between training, vocational education and academic education. Some, though in existence for a long time, are only now attracting concern because of their growing importance, such as the proportion of the age group who are NEET (not in education, employment or training) and the decline of work-based routes into vocational education (HM Treasury 2006, Hayward 2004). Others again are pressing policy issues, such as the inauguration of Specialist Diplomas for the 14-18 age group and the proposed raising of the age of compulsory participation in education to 18 (Nuffield Review 2008 a & b). The Review has done pioneering work in setting out the changing context of 14-19 education and the challenges that it faces. In addition, attention has been paid to the different situations in Wales and Scotland. There is, however, much to learn from the experience of neighbouring countries in north western Europe, in particular with respect to their different systems of VET and the ways in which these are articulated with the labour market. To substantiate our case, we draw on our Nuffield-funded research project, 'Cross-national equivalence of skills and qualifications', analysing how key concepts such as knowledge, skills, training and competence are understood and applied in particular sectors and occupations in the Netherlands, Germany and France.

Distinctness of English VET

At first sight, the English 14-19 situation is similar to that in many continental European countries. There is in England a mixture of college and work-based routes and, officially at least, a commitment to increasing the knowledge and skills of the workforce and to extending participation in education as a key means of achieving this. An 'outcomes'-based approach to qualifications - which lies behind English innovations such as the NVQ (National Vocational Qualifications), APEL (Accreditation of Prior Experiential Learning) and modularisation - has also been adopted as the basis for the new European Qualifications Framework. Such similarities suggest a degree of convergence.

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These surface similarities hide profound differences, which cannot be ignored, if the lessons offered by other European countries are to be heeded. The fundamental issue is that in England, there is little recognition that there is something of substance behind the term 'vocational education' (Ryan et al, 2006). Our research, together with the official explanation of the specialist diplomas, makes this clear. 'Training' and 'vocational education' are used interchangeably, but increasingly the meaning of 'vocational education' is being assimilated to 'training' in a guite narrow sense of that term. There has been a tradition in England of combining educational elements with on-the-job training, including day and block release for apprentices, involving - as a result of the 1944 Education Act - an element of civic education. There are also wellestablished awards, such as the BTEC National Diploma, which incorporate significant elements of theoretical knowledge relevant to the occupation for which the candidate is preparing. The historical problem has been, not that such programmes have not been successful, but rather that - with important exceptions such as under the Industrial Training Boards (e.g. the Construction Standard Training Scheme of the 1970s) - they have never succeeded in establishing themselves as major alternative routes from school to work, with sufficient prestige to gain widespread confidence and recognition from the government, parents, young people, trade unions and employers (Winch and Hyland 2007). This is reflected in the constant ebb and flow of new initiatives and gualifications in the area over the past 20 years, which the Nuffield Review has documented. The Diploma programme is expressly described as an educational, not a 'vocational educational', route to a prestige qualification.

At the same time, however, there has been a move away from the 'educational' and towards the training conception of non-academic 14-19 education. This is particularly true of work-based routes which are not only in guite a parlous state, but do not attract the attention and concern that they might. The continental experience has much to offer in enabling young people and parents to have confidence in solely education-based as well as education- combined with work-based routes. In contrast in England, the work of Ryan et al (2006) suggests that even those employers who are currently committed to high quality training discount the importance of an educational element on their programmes. This is even more the case for employers who take a more task-based approach to workplace training. One of the striking findings of our research in relation to the construction and logistics sectors is that, with some few exceptions, the predominant view from an employer and Sector Skills Council perspective of work-based learning in England is that it should be confined to the immediate requirements of acquiring the skills associated with a particular job or task. Not only is further learning regarded as superfluous, but a positive hindrance to effective working. It is not simply that these are ingrained positions but that they seem to be gaining in strength. This produces a tension between the government's stated aim of increasing the knowledge element in the economy and the view of most employers that what really matters is the ability to carry out ready-to-hand tasks in the workplace through training for immediate skill requirements.

The Apprenticeship programme is an example, remaining fragmented into different elements – the NVQ, Technical Certificate and Functional Skills – and frequently criticised for the narrowness of the knowledge and skills base. Theoretical and background knowledge provides an important part of the educational or 'Technical Certificate' element in the programme, but is not sufficient as there is currently no means of integrating it directly with work-based learning and practice. Continuing

general education is currently confined to Functional Skills, an unpopular element largely because it is perceived by both employers and employees as decontextualised and unnecessary. As a form of continuing general education too it is narrow and unduly utilitarian and hardly 'fit for purpose' as part of a continuing educational offer. The NVQ element too is associated with fragmented and narrow skill sets due in part to the limited scope of activities encompassed in a single qualification, which is itself constructed from a limited task analysis (Green 1998). With the Technical Certificate having been dropped by some sectors and NVQs as an integral structuring element and key output in terms of funding), the apprenticeship system in England is typically oriented towards acquiring a narrow range of skills with minimal underpinning knowledge.

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The result is that it does not really constitute a coherent vocational educational offer, although comprising elements of an educational nature as well as on-the-job training. Underpinning knowledge as recognised in Technical Certificates is also currently assessed separately from the workplace skills of the NVQ and from 'Functional Skills'; the NVQ may also be assessed prior to the Technical Certificate. This means that the theoretical and underpinning knowledge is, for assessment purposes, irrelevant to the ability to perform the prescribed tasks. As a result, it is not possible to gauge an individual's ability to apply theory to practice as this is not tested within the NVQ.

The educational component of work-based programmes such as the Apprenticeship is generally located in the local Further Education (FE) College. Of more critical and growing importance in terms of VET are those in FE colleges on non work-based vocational routes, including in areas such as construction or engineering. For instance, nearly two-thirds of construction trainees fall into this group, the remainder being attached to employment through, for instance, apprenticeships (ConstructionSkills 2006). Such vocational courses offered in FE are of a more 'vocational' nature than those currently available in schools to those without the requisite GCSEs to go on to 'A' levels or, indeed, than the planned school-based diplomas. FE colleges are also better equipped than schools in terms of workshops and equipment. However, though geared to preparing the student for work in a particular occupation, FE students on vocational courses, being collegebased, are unable to obtain the necessary work experience to obtain employment. As a result, many drop out and many more are unable to enter their chosen labour market field.

The distinctness of the dual system

One way in which the gulf between college-based routes (offering little prospect of employment) and work-based routes (offering little prospect of developing knowledge) might be bridged is through the combination of work and college that is well-established in Germany, Austria and Switzerland and known as the 'dual system' (Dubs 2006). Under the dual system young persons are, as apprentices, in employment but remain within the ambit of education and are offered a systematic programme of work-based development combined with simulated workshop-based training in a specialist centre, both of which are sequenced and integrated with a more academic and civic element. This is achieved largely because the system is developed and governed by all those involved – employers, trade unions, educationalists and government. Young people may be classified as employees and allocated places as vocational educatees (Auszubildene) while at the same time being employed by a firm and following, over a period of between 2 and 4 years, a combined programme of work and study that has as its aim the development of an integrated occupational capacity (berufliche Handlungsfähigkeit) of a broad nature. These employment places are related to one of 350 recognised occupations in Germany whose requirements in terms of knowledge, technical skill and social and individual characteristics are jointly negotiated by the industrial social partners (trade unions and employers) and clearly set out (Brockmann 2007).

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The complementary roles of the workplace, the training centre and the college are delineated and a division of labour between the three is understood. The classroombased college handles the underpinning theoretical knowledge for the occupation but also, and importantly, the continuing civic and general education. The workshop aims to apply and embed knowledge in a relatively safe, controlled, simulatory practical environment. The workplace, on the other hand, is responsible for context-specific knowledge and supervised work, gradually involving the young employee in more and more responsibility as he or she gains in experience and maturity and is better able to apply the theoretical elements of vocational education to the workplace activity. The goal is to develop an employee who is capable of independent action and judgement across a broad range of activities within an occupation and industrial sector, able to plan and evaluate his or her own work and to work with others in teams and across occupational boundaries (Clarke and Wall 1998). It is important to this conception of vocational education that the final qualification results from the assessment of this integrated ability in which the developed knowledge and personality of the Auszubildene are all engaged in extended work activity. Theoretical knowledge is assessed separately in order to gauge the Auszubildene's ability to work in a variety of hypothetically relevant situations. However, because the practical examination comes at the end of the period of vocational education, including the theoretical element, that element is presupposed in the final assessment.

However, whilst successful educationally and in terms of constantly improving both the knowledge base and productivity, the system is also confronted by a number of difficulties. It is, in the first place, vulnerable to individual employers being willing to offer places, and these have for a number of reasons become scarcer. The modern workplace may, for instance, be too hazardous for a young and inexperienced person to be exposed to, the equipment may be too valuable and the activities undertaken by any one firm may be too narrow to provide the grounding for an occupation. Similar difficulties confront the work-based element of schemes throughout Europe. One solution is that offered by the Dutch model, where vocational education is organised on the basis of groups of employers, responsible for group training centres and offering the student a range of activities not possible for the individual firm. But even this group system is vulnerable to employer reluctance and the tendency is for vocational education increasingly to take two routes, college and workshop based, as in the Danish model, where the student may initially spend up to a year based in the college. It is possible also in the Danish system for those unable to find an employer willing to offer a training place to undertake a programme of vocational education on a college basis, combining this with work experience at any time during the programme when a placement is found.

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In Germany, changing work organisation and accelerating technological advances, have resulted in major reforms aimed at enhancing the relevance and applicability of theoretical knowledge to workplace practice (Boreham 2002). The introduction of 'learning fields' in the 1990s in particular represented a shift away from traditional subject-based towards practice-oriented learning, based upon the needs of the occupation. Other didactic innovations include self-organised and project-based learning. These new 'action-oriented' forms of teaching and learning posit the apprentice/worker as an active producer of knowledge able to deal with complex and unpredictable work situations, thus enabling flexibility and innovation (Halfpap 2002). The emphasis is clearly on the development of holistic competence (Handlungskompetenz) by promoting autonomous thinking, learning and action-taking (Rauner 2004). This contrasts with the English model which lacks a notion of competence development through the integration of theoretical and practical knowledge by the reflective worker and instead focuses on ability to perform narrowly prescribed tasks.

These systems therefore offer important lessons for the English VET system with respect to:

- integration of the different elements of the VET programme and assessment of these;
- joint negotiation of the scheme with employers, trades unions and educationalists;
- the broad-based nature of the VET and the resulting qualification, including the range of activities encompassed by each occupation and the inclusion of civic education;
- the 3 locations VET school, training centre and workplace.

The possible relevance of the Dual System for the English context

The scale of the challenge facing England in raising the compulsory education leaving age and in obtaining the enthusiastic and productive participation of young people in education is enormous and will require major reform if it is not to lead to further disillusion and disaffection. A coherent system of VET, containing an important element of applied theoretical practice combined with systematic and guided work experience, as opposed to simply training for a narrow range of skills, could form the basis for a much expanded education route within the UK context, whether this be college or employer-based. Many young people are attracted to the idea of being educated and prepared for employment in a specific occupation or industry as opposed to an extended academic route (Archer and Yamashita 2003).

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The instrumental view of work-based learning has however become so strong that it will be a struggle to successfully advocate a work-based educational, as opposed to a training, route. This will nevertheless be necessary if the agenda to raise the aspirations of young people, combat disaffection, increase educational participation 14-19 and establish clearer and better accepted pathways from schooling into work is to be realised.

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Comparing two cases of trainers' practice – implications for professional development

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Summary: The aim of this paper is to present grounded thoughts about the principle dilemmas and challenges that appear when trying to formalise the structure and levels of trainers' work profiles and practical answers. The cases have been selected according to two criteria, they represent cases of good practice and two different company contexts, a large industrial plant on the on hand and a small enterprise that is rooted in a family owned crafts context. In that regard they represent two distinct typical examples of VET practice in the German apprenticeship system. Training practices were researched through a triangular approach that explores training practices through interviews with learners, trainers and training managers. The research presented is part of a larger European project that aims at the development of a framework for professional development for trainers.

Keywords: trainers, continuing professional development, empirical findings, case studies

Introduction

The TT-Plus project as the context

The European Commission, Lifelong Learning Programme funded TT-Plus project is examining the changing role and practice of training. This will feed into the formulation of principles that have to be taken into account when looking at continuing professional development of trainers. Whilst there are projects underway that look at profiles and qualifications of trainers from the perspective of how they fit into the schemas of the European Qualifications Framework, TT plus looks at patterns of training practice and tries to develop ideas on how to support trainers' professional development from this end. Therefore, a major challenge for the TT-Plus project is to develop a methodology for the trans-national study of the (changing) practice of trainers.

The cases studied

The research presented in this contribution contrasts two cases of trainers' practices and outlines the implications that empirical findings from these cases have on considerations about the support of trainers' professional development. The two cases that have been looked at have been carefully selected on the basis that they present examples of "good training practice", this was done based on the criteria that

had been developed for the selection of cases in the INAP project (Grollmann & Rauner, 2007), and that they are typical but contrasting cases of such practices for the German environment of in-company VET:

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- The company A (an SME based on the tradition of a family business) has consequently maintained the traditional German philosophy of *training <u>and</u> professional development* in crafts and trades. The staff development in the company is based on flexible cooperation between the masters of craft and trade ('*Meister*'), the advanced skilled workers ('*Gesellen*') and the trainees ('*Auszubildende*'). The role of the Meister is to allocate advanced skilled workers and trainees to different worksites and service visits. The skilled workers are at the same time considered as *advanced learners* and as worksite mentors who have a certain responsibility to promote the learning of trainees.
- 2. In the company B (a large industrial plant) the role of separate training workshops has been considered problematic. Although the workshops have certain advantages in supporting workplace-based learning' they tend to become buffer zones between school-based learning and real workplace learning. Therefore, pedagogic initiatives with 'working and learning tasks' and 'integrative projects' have linked the workshop-placed learning to cooperation with production sites. In this context the full-time trainers (Ausbilder) are supported by worksite tutors (Ausbildungsbeauftragte) at the production units.

An open but focused lens on trainers' practice

It has been argued at many places that ethnographic paradigms often do justice to the complexity of practice but eventually end up in a "doubling" of reality. "Practice" carries two meanings with regard to the reality of our target group. On the one hand the trainers themselves can be regarded as experts on learning and training at the workplace. On the other hand workplace trainers are experts on the "local knowledge" of work processes, tasks and functions. Training workers exhibit, develop, transfer and convey the knowledge useful at work, i.e. the so-called work process knowledge (Boreham, Fischer, & Samurcay, 2002). This double practice orientation makes it a valuable undertaking to take a deep look into trainers' practices. How far do existing "train-the-trainers" provision, policies and practices and the way of their recruitment correspond to the "internal logic of training" at the workplace? In principle it can be analysed according to different stages and with regard to different levels of analysis.

A generic model of stages would distinguish at least the following elements:

- 1. Pre-training biography/experiences;
- 2. Initial take-up of training functions;
- 3. The everyday practice of learning support;
- 4. Changes and developments with regard to this role (e.g. expansion in terms of content or time; promotion etc.).

Talking about professional development, it is eventually the individual trainers' competences, attitudes, skills and abilities to support the learning of novice workers that come into focus. However, since training takes place in the immediate context of work organisation and its constraints, it would be a wrong and unfair attribution to only look at the individual trainers' dispositions, skills and abilities. Thus, a look at organisational practices and the interaction with learners is also needed (Eraut, 2004). This is the context in which those individual determinants of training practice can be accentuated. The focus on the trainers' role and practice and its development



is necessary, since otherwise we might risk to just produce general findings on the quality and processes of learning in work processes or on organisational developments as regards to learning at work, where others already have done better (e.g. Argyris & Schön, 1999; Boreham, Fischer & Samurcay, 2002; Fischer, 2000; Hackman & Oldham, 1980).



Figure 1: A hypothetical framework on the dynamics of trainers' professional development and some findings

	Pre-training biography/experiences	Initial take-up of training functions-	The everyday practice of learning support	Changes and developments with regard to this role
Possible (hypothetical) problems, dilemmas etc.	workers that are trained to become specialists and lack the necessary skills to transfer their knowledge and competence to peers and novices; 	formal recruitment policies are not aligned to the actual needs of trainers' practices: they constitute a formalistic "pedagogisation" and do not take into account the specific conditions of learning at work responsibility is only based on the progression of technical expertise and promotion	The identity as a worker dominates the identity of a "learning supporter". Insufficient commitment to learning support The identity as the trainer dominates the identity as worker. "Instructionist" conception of learning at work	strong commitment to learning support leads to a "teacher-like" identity Can promotion and spatiotemporal expansion of the trainers' role be organised keeping his expertise in conveying "local" knowledge of the production process and tasks?
Case A (SME)	responsible for training based on the judgement of the departmental leader	expressed wish for knowledge on training rules, curricula etc.	(supervising) rotation of apprentices (as a predominant role of the training manager) evaluation of training in the departments through apprentices (supervisor interferes in case of problems) "bad reputation" of training workshop	introduction of the training manager as the supervisor for rotation
Case B (Industrial Plant)	"Learning support" and communication as a professional task is included as a natural feature of "initial" training in the company, apprentices are prepared to take over functions of knowledge and competence transfer recruitment of an external expert "Meisterausbildung" as formal requirement for trainers in the training workshop Rotating responsibility for training at the workplace		process orientation in the training workshop as well as in the work process ("mechatronics") Co-operation and networking with other companies in order to provide apprentices with the full range of learning experiences led to the establishment profile of a "professional networker" and the	Taking over training functions can be an important step and criterion for any promotion towards a profile that includes personnel responsibility ("Tagesmeister", process engineering/planning)

There exists a contradictory situation: on the one hand it can be observed that increasingly learning is integrated into work processes (Griffiths & Guile, 2004; Leney & The Lisbon-to-Copenhagen-to-Maastricht Consortium Partners, 2005). This trend is principally appreciated through theories and research into the potentials of learning in practical environments and communities of practice (e.g. Chaiklin & Lave, 1996; Lave & Wenger, 1991). However, at the same time we want to achieve that training functions are acknowledged more formally, that the building of the necessary competences is systematically nurtured and that it becomes a part of the organisation in its own right.

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In the two cases analysed in this contribution we found that this analytical framework helped us quite well to interpret certain empirical challenges and dilemmas that can be found in our companies (see Figure 1). Our research was accompanied by Master-Thesis that contributed to the gathering and first interpretation and sorting of the data (Martens, 2007).

Conclusions and Discussion

This will summarise the findings of the two case studies according to the different levels that have been pointed out in the analytical framework. Those levels can also serve as the dimensions for the further development of an open architecture and its design principles.

Organisational level

What we can see in our small sample is the general contradiction between a work process integration on the one hand and professionalisation measures on the other that we also could identify in the literature. Organisationally this demands a clear strategic view on how the learning of apprentices can be enhanced while at the same time avoiding frictions that will be pointed out below. This includes a clear profiling of training support functions and more important the orchestration of the rotation process of learners with the learning support through mentors, trainers and training managers.

Trainers' individual development

The two cases looked at here show that it is difficult to apply a straightforward and linear approach to the professional development of trainers (as qualification frameworks would suggest). Even though there is room for profiles that are specifically targeted to training, major parts of learning support are taken over by personnel that is doing this as an activity that takes place during the normal job activities and where the learner is a beginning peer worker.

This has different repercussions on the way how the professional development of "trainers" can be enhanced. One possibility – of course is – raising the formal status of trainers and putting special emphasis on their knowledge and skills as regards to learning and managing the training processes. This would indeed be organised as a linear concept of professional development that is rooted in the work process and increasingly specialises and expands into the training functions. However, the case of the industrial firm also shows that it can be regarded beneficial by the firm to employ someone from outside who takes over such functions because of the specific networking skills and broad knowledge that this person brings into the arena.



Interaction and Support for learning

Past experiences in both companies have shown that specialised trainers developed increasingly an "instructionist" conception of work that took not into account the immediate constraints of work anymore and therefore provided less authentic learning support. In both of our cases there were complaints about the work of training workshops that pointed into this direction. Trainers and learners then lost authenticity as peer workers. On the other hand especially the workplace trainers in the crafts based enterprise were complaining about certain problems that arise when trying to fulfil the training function embedded into work processes, such as time constraints and clients pressure to be served by senior skilled employees. Mechanisms that would be element of an architecture need to negotiate such contradictory demands. They can be tackling the organisational or the individual level. Certain instruments and practices can help to give feedback to trainers as regards to their quality such as learning support evaluation sheets as they are in use in either case. Such instruments need to take into account this dilemma. Possible downsides to a full process integration could be seen in our craft rooted case, where there was a demand expressed from the trainers' side for more support in terms of access to individual knowledge on formal regulations and training practices. Small companies might need support for this because of limited resources available for such strategic training that is not immediately connected to the everyday technical needs of work.

Another important way of tackling the support of learning and training on the individual level is the cultivation of learning support as a general assignment for (peer) workers during their induction into the work process as well as in later stages of their career. We have seen both cases in our industrial firm, where training skills were part of the later stages in the apprenticeship programme. Training was also seen as a benefit for the promotion into higher level technical positions such as process engineering.

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Facilitating learners' motivation and competence development in the workplace: the UK context¹⁶.

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Summary: The paper draws on the role and importance of motivational factors for learners/employees' competence development in the context of workplace learning. Learners' motivation is considered to be an important 'driving force' of the learning process in the area of work-based learning. The paper draws on the factors that may facilitate the links between the college and workplace settings. The paper considers factors that may stimulate learners' motivation towards competence development and workplace learning.

Keywords: adult learners, motivation, competence development.

Introduction

Factors facilitating the development of workplace competences through motivation of learners/employees have been discussed in a number of papers (Malone, 2005; Unwin & Fuller 2003; Fuller et. al. 2004; Avis 2004). There are a number of factors and conditions that may facilitate or undermine learners' motivation and skills development. Drawing on the previous research in this area (Evans et. al. 2006), in this paper we focus on two groups of motivational factors, namely (1) factors related to learners' personalities, backgrounds and learning environments; and (2) factors related to the development and use of new technologies (e.g. e-mail, internet, computer-assisted/on-line learning, educational software, etc) in the context of workbased learning. The paper discusses various factors and conditions that may facilitate the link between the college and the workplace in terms of supporting

¹⁶ The paper is based on the project "Supporting learners' motivation towards and through work-based learning in college environment: the role of the new technologies" carried out by the CENTRE FOR EXCELLENCE IN WORK-BASED LEARNING FOR EDUCATION PROFESSIONALS, Institute of Education, University of London.



learners' motivation as they move between roles and settings. The paper considers under what circumstances the factors may stimulate learners' competence development and what approaches may be employed by supervisors/trainers in order to facilitate this process. One of the central questions of the project has to do with the way the learning contexts can facilitate, support or undermine learners' motivation and competence development, particularly focusing on the following aspects:

- How (in what way) motivational factors are affected by various contexts and conditions?
- What factors could facilitate or undermine learners' competence development?
- What is the effect of the new technologies on learners' motivation and competence development?
- What approaches could be employed by or supervisors in order to facilitate the positive effect of motivational factors?

This paper summarizes the work in progress undertaken to date on the project and discusses emerging findings and conclusions.

Methodology

The study combines both theoretical and empirical research. At the first stage a literature review related to factors motivating learners' competence development in the context of work-based learning, has been undertaken. The second stage of research involves undertaking fieldwork in both college-based and workplace contexts including interviews with both learners and tutors/practitioners. The fieldwork was undertaken in a college of further education and workplaces. The college aims to facilitate a wider access to HE for adult students, particularly women. It offers a range of courses for students seeking (1) to return to learning, (2) to access HE or (3) to make up for missed opportunities in the past. Twenty learners have been interviewed about the (1) way they use the new technologies (e.g. e-mail, internet, computer-assisted learning, educational software, etc) and (2) how this enhances their motivation and reflects to their learning outcomes and skills development.

The respondents include adult learners who are undertaking HE level 'Certificate in Management' courses linked to their workplaces. The courses are structured to respond to the students' own needs and starting points. There is a strong emphasis on support for the individual learner, both within the subject modules and in an extensive programme of additional learning support. Many of the students were not able to take up educational opportunities in the past due to financial, personal or social barriers. Some of them had difficult experiences at school which damaged their confidence. We have been conducting semi-structured interviews with learners who have experience in both workplace and college environments in order to reflect on the factors motivating their attitudes in various contexts including the use/role of the new technologies within for their learning. Interviews and further collaboration with tutors are being carried out in order to develop appropriate methods and approaches for facilitating learners' motivation

Learning at work: developing competences in the workplace

Developing competences has become a significant issue for facilitating success in the workplace (Eraut 1994; Hodkinson 1995; Oates 2004). Workplace learning is a term that is open to wide interpretation. There is no singular definition or one unified approach to what 'workplace learning' is, what it should be, or who it is or should be for (Lee et. al. 2004). In this paper we will draw on the definition of workplace learning given by Unwin and Fuller (2003), which provides a good insight into the nature of the workplace learning:

The term 'workplace learning' is used to embrace all types of learning which are generated or stimulated by the needs of the workplace including formal on-the-job training, informal learning and work-related off-the-job education and training (Unwin and Fuller, 2003, p.7)

This definition was adopted in Evans et al (2006) as that learning which derives its purpose from the context of employment (i.e. learning in for and through the workplace). In this context learning is perceived as something that '[...] you do continually whilst at work, both out of choice and by necessity (Gray et al, 2004, p.vii)'. Similarly, Malone (2005) describes workplace learning as any learning that takes place in the workplace:

Most of what we learn takes place at work rather than on formal courses. Work activities, the workplace, the supervisor, other workers [...] are the key learning resources for workers (Malone, 2005, p.67).

What employees learn as 'learners in the workplace' leads to the development of certain skills or competences, e.g. job-specific, occupational or personal, etc. Our data support the view that learners' motivation is considered to be an important 'driving force' of the learning process in the area of work-based learning.

Aspects of acquisition and development of work-related competences: the role of motivational factors

The fieldwork allowed us to draw on two groups of motivational factors such as (1) those related to learners' personalities, backgrounds and learning environments; and (2) those related to the development and use of new technologies in work-based learning. The fieldwork indicates that such factors that may either stimulate or undermine learners' attitudes and motivation towards workplace learning.

(1) Factors related to learners' personalities/backgrounds/environments

Significant factors related to learners' personalities/backgrounds/environments and their skills development are associated with their previous educational experience/previous workplace experiences as well as with their attitudes and dispositions. The research has shown that learners/employees with previous workplace and/or educational experience feel more confident within their current workplace settings. The interviews undertaken within our fieldwork suggest that learners are able to employ their previously acquired skills in their present workplace



or learning environments which ultimately may facilitate their motivation and confidence at work. What is more the interviews have shown that adult learners' individual biographies, depositions and attitudes may further facilitate or undermine their motivation and learning success within their workplaces. In addition, their family circumstances and financial situation. may significantly facilitate or undermine learners' motivation.

Our interviews allowed us to draw on a group of motivational factors related to the issue of a learning environment at a workplace. It has been drawn on in a number of interviews that a stimulating 'learning environment' in a workplace may considerably facilitate learners' motivation and skills development. In this context the 'workplace is perceived as an environment in which people learn because it provides opportunities for them to deploy and develop their skills. The extent to which employees' motivation and competence development at work is influenced by how they experience their working environments has been underlined by our research. Building on definitions by Fuller and Unwin (2004) of expansive and restrictive workplace environments and our previous research (Evans et. al. 2004) we argue that workplace environments experienced as expansive facilitate learners' motivation and further development and deployment of their skills whereas environments experienced as restrictive are found in workplace settings that do little to encourage their motivation and further professional training or development of new skills. Our date suggest that expansive and restrictive environments are considered to be two types of a leaning context. So called 'extrinsic' factors (Malone, 2005) associated with a learning context, may include the following:

- fear of redundancy;
- promotion prospects;
- managerial pressure;
- peer competition.

Our date suggest that such factors also play an important role in facilitating or undermining learners' motivation. However, motivational factors such as, for example, fear of redundancy or any kind of a negative pressure, may work as a short-term motivator, but are unlikely to be effective in the long term.

Another important benefit associated with a stimulating learning context is that of engagement of learners (Evans & Kersh, 2006). Avis (2004) argues that the workplace learning environment may contribute to the re-integration of those who are disaffected and disengaged by drawing on an interest in work. What is more, workplace learning seeks to address the interests of those who, while academically able, feel out of kilter with schooling and are seeking practical experience alongside the acquisition of qualifications which offer the progression to higher education (Avis, 2004, p.211). An issue of addressing learners' individual needs has also been associated with a stimulating learning environment. Unwin and Fullers' (2003) research suggests that the needs of different types of learners should be taken into account and addressed within their workplaces. For example, the authors note that it is crucial that organisations consider the long-term needs of their younger employees who should be given the opportunity to gain qualifications that can help them progress within and beyond their current workplace. Furthermore, sensitivity will need

to be shown when creating opportunities for those employees who lack basic skills and for those with learning disabilities.

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The project's data suggest that retraining as a kind of learning environment may actually help the learners to recognise the importance of their prior experiences through making their tacit skills and personal competences visible through employing these skills in a wide range of various educational and social activities. Tutors may employ a number of methods and approaches to help the learners to make their skills visible. Team work, one-to-one tutorial help and encouraging learners to help their fellow-learners have been identified as the methods that may help to uncover tacit skills.

(2) Factors related to the use of the new technologies

The motivation factors related to the use of new technologies may be contextually specific and they can take different roles in different learning or workplace contexts. What could facilitate students' motivation in a college environment might actually hinder their progress in a workplace environment. For example, factors related to the use of modern technologies could encourage learners towards skills development in a college environment. However, in a workplace environment they could be perceived differently by learners or employees. The use of new technologies in workbased learning includes, for example, the following:

- Teaching/learning associated with the use of electronic delivery methods such as CD-ROMs, video conferencing, websites and e-mail;
- Learning that that is taking place over the Internet, a computer network, via CD-ROM, interactive TV, or satellite broadcast;
- A process of learning that facilitates education using a network (e.g. Internet).
- Computer assisted earning.
- Using software created to teach the user new skills or/and evaluation their skills

Preliminary Results

This paper considers the work in progress undertaken to date on the project and discusses emerging findings and conclusions. Our fieldwork data support our findings that both tutors and learners considers motivation as an important factor that facilitates recognition and deployment of learners' skills and competences. Under the current demands and requirements of the labour market, the challenge of demonstrating and making tacit skills visible is being faced by adult learners/employees moving between various roles and settings. The project's findings suggest that providing adult learners with the opportunities "to be motivated" or facilitating their motivation may enhance their learning success. Tutors may employ various methods and approaches to facilitate learners' motivation including facilitating teamwork and group discussion, providing feedback and support for learners etc. To develop appropriate approaches the project is collaborating with a college of further education in London. Our evidence also indicates that the motivation in different learning or workplace contexts. What could facilitate students' motivation in



a college environment might actually hinder their progress in a workplace environment. For example, factors related to the use of modern technologies could encourage learners towards skills development in a college environment. However, in a workplace environment they could be perceived differently by learners or employees. Interviews and further collaboration with tutors is being carried out in order to develop appropriate methods and approaches for facilitating learners' motivation

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Relations between characteristics of innovative learning environments and competences in secondary vocational education

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Keywords: innovation, vocational education, competence

Introduction

Recent technological and economical developments as well as changes within the labour market enforce changes in vocational education. One particular problem in apprenticeship systems is a mismatch between requirements of companies and qualifications of applicants, leading to (few) vacant apprenticeship training positions and an increasing number of youngsters without apprenticeship training position at the same time. Therefore vocational schools have to prepare these youngsters for future jobs through providing the required competencies in learning environments. This contribution focuses on the development of innovative learning environments for youngsters without apprenticeship training. The central question addressed in this contribution is: What characteristics of learning environments lead to the development of required competencies?

Theoretical Background

Competencies as learning goals

Competencies can be defined as a complex of abilities, including knowledge, cognitive and practical skills as well as attitudes, emotions, values and motivations (Rychen & Salganik 2003), that are required for carrying out specific activities and solving problems in complex job situations (Ellström 1997; Onstenk 1997). Therefore they represent a personal capacity. Here we distinguish occupational, meta-cognitive and social-communicative competences (cf. Sonntag 1992).

Occupational competences consist of knowledge and skills about job specific processes and products. Meta-cognitive competences concern being able to react in a systematic and systemic manner to difficulties that may arise during work performance, to find the solutions themselves and to be able to apply the experience gained in a meaningful way to other problems encountered at work. For instance, it comprises skills for problem solving and evaluation of job specific actions. Social-communicative competences contain knowledge and skills with which communication and co-operation is possible, to display group oriented behaviour as well as empathy and to manage occurring conflicts. One crucial aspect is that the components of competences can only trigger competent action when they complement each other, and when they are context bound.





The basic assumption is that the characteristics of learning environments in vocational education should be derived from the learning goals defined by the needs of the students and the needs of the training companies. In this context learning goals can be described as competences that enable students to successfully enter or run through apprenticeship training.

Learning processes

Characteristics of learning environments should also be consistent with the way learning processes of students take place. The theoretical framework of this study consists of an instruction model, based on ideas of constructivism and situated learning (e.g. Savery & Duffy 1995; Lave & Wenger 1991). Learning processes are considered to be internal processes of an individual, where motivation plays an important role. Individuals make representations of their own reality and reconstruct them as a result of new experiences. Learning is an active process, whereby new information is integrated and connected to prior knowledge, and changes the prior knowledge. New information has to be understood as well (Perkins and Blythe 1994). Cognitive conflicts stimulate understanding, and therefore social negotiation of meaning stimulates learning processes (Savery & Duffy 1995) as well as multiple representations and multiple perspectives do (Jones, Knuth & Duffy 1993). Furthermore, although learning is an individual process, it is a context bound process (Lave & Wenger 1991). And because knowledge and skills need to be used in different settings, learning also needs to take place in a variety of different settings. Transfer of competencies can be stimulated by certain conditions as for instance acquiring them in a certain context, then decontextualising them, before again contextualising them in a different context (Simons 1993).

Innovative learning environments

Required competences and learning processes are taken as the two pillars of the development of an adequate learning environment. Therefore the development of students as well as the job specific practices are the basic elements. The assumption is that learning environments lead to all required competences when the different components of these learning environments, namely 'content', 'method', 'assessment', 'teacher behaviour' and 'the context' are consistent (Mulder 2005).

The content of a learning environment has to consist of issues that are related to students' own experiences and to issues considered to be relevant by students, as well as specific characteristics of students such as age, ethnical and cultural background, and their motivation (e.g. Mulder 2004). Learners need to see the meaning of what is learned, which stimulates motivation and therefore learning.

In respects to the method, the notion that multiple representations, multiple perspectives, cognitive conflicts and social negotiations stimulate learning, lead to the opinion that collaborative learning (cf. CTGV 1993), but also a variation of working methods is required (Mulder 2004). Concepts as problem-based learning (e.g. Barrows 1985) provide opportunities in this respect. With collaborative learning not only social competences can be acquired, but also the other required competencies. For solving complex tasks teachers can play an important role. Characteristics that are consistent with other features of this learning environments are for instance coaching and scaffolding (Collins, Brown & Newman 1989).

Assessment influences learning (e.g. Van Til, 1998). Therefore it has to be concurrent with the other components of learning environments. The implication of

the mentioned learning goals is that process as well as product assessment and formative as well as summative assessment are required.

Finally, the context of learning has to be considered. Constraints and affordances of the context of action have to be taken into account (Greeno 1997) when designing a learning environment. Learning is socially and culturally mediated and embedded in a specific domain of action (cf. Billett 1996). In the context of a vocational school this can be in school and on the job.

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Methodology

Intervention

In accordance with this theoretical framework a complex learning environment has been developed in a German vocational college. A development strategy building on the Design-Based Research approach (e.g. Brown, 1992; Collins, 1992) has been used: Teachers of this school developed the learning environments together with the students, school board members, and other relevant actors. The researchers' role was to participate in the development, as well as take care of objective and systematic data collection, in order to successively improve the design.

Instruments, design, sample and procedures

Data on background characteristics, learning environments and competences have been collected and analysed, using a control group design. For measuring students' competences they had to solve real working life problems in a paper and pencil test. This problem solving gives insight in components of occupational competencies (about 'processes' and 'products'), meta-cognitive competences ('evaluation' and 'problem solving') and social-communicative competences ('cooperation' and 'conflict management'). For assessing characteristics of learning environments students' the opinion of the students was collected with a questionnaire, which contained 22 variables containing components of the five dimensions (content, method, assessment, teacher behaviour and the context).

The research has been carried out within two school years, comprising two samples of N=107 in 2005-2006 and N=123 in 2006-2007, with three measurement moments per school year: at the beginning (T0), in the middle (T1) and at the end of each school year (T2). The sample consisted of students without apprenticeship training, divided into two experimental groups, in which the innovative learning environment was developed, and one control group with traditional education. In addition the sample contained two apprenticeship groups that are used as control groups too.

To find out the relations between characteristics of learning environments and student competences correlation analyses have been carried out. In addition, descriptive analyses and analyses of variance were calculated for these variables. The latter were run to control for differences between groups and measurement moments.

Results

In the analyses of the data of the first school year (2005/2006) the competences at T2 are taken as dependent variables. The scores were reasonably high. In the correlation analysis (T2) we found negative relations between 'process' competencies and 'feedback' and 'support of teacher', between 'problem solving' and



'work in basic groups', 'mixed methods', 'assessment fitting the tasks' and also between 'conflict management' and the 'variation of tasks'.

For the second school year (2006/2007) group comparisons showed significant differences for competences 'evaluation' and 'problem solving'. For 'problem solving' the apprenticeship group one scores higher than all other groups. All scores on competences were reasonably high. Results showed only few negative correlations between characteristics of learning environments and competences. For instance between 'process competences' and 'mixed methods', 'transparency in results and goals', 'feedback' and 'assessment for stimulating learning' and between 'evaluation competences' and 'transparency in goals results'. In the presentation we will elaborate on the (interpretation of) the results of the study

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Coaching and collaborative work based learning in Dutch VET: the 'TEAMstages' project

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Summary: In the Netherlands work based learning has become a substantive part of vocational education at all levels. The availability as well as the quality of workplace learning is of crucial importance. The paper gives a short overview of developments with regard to coaching and new learning arrangements in workplace learning in Dutch school based VET. Different and more intensive interaction patterns between employers and vocational schools as well as between teachers and workplace coaches are developed to improve the connection between learning in school and in the workplace.

The main part of the paper focuses on an innovative project TEAMstages ('Team traineeships') where students of different levels in the VET system work together as a team of trainees in a company assignment. This involves intensive guidance by school and company coaches as well as peer coaching.

Keywords: team learning, coaching, multilevel teams

Introduction

The paper gives firstly a short overview of recent developments with regard to coaching and new learning arrangements in workplace learning in Dutch VET, especially in school based VET. Secondly, the main part of the paper deals with first results from a recently started research project in the experimental project TEAMstages ('Team traineeships').

Work based learning in Dutch VET

Workplace learning is an essential part of every senior secondary vocational education and training course. There are two 'learning pathways', a school-based pathway and a work-based pathway. Both pathways combine learning in school and in workplaces, but in different quantity. The school-based pathway includes workplace learning (traineeship) for 20–60% of the total curricular time. The actual amount is rising: in 2005 the average over all courses was more than 50%. Background for this is the growing value attached to workplace learning, both for motivation of students and for attainment of objectives with regard to problem solving and work process knowledge (Onstenk, 2004; Onstenk & Blokhuis, 2007). The work



based pathway includes apprenticeship in a company for at least 60% of the time, as well as a one or two day school release. In both strands, regional VET Colleges are delivering the school-based part, but bear responsibility for the whole learning process as well as for awarding the qualification.

Apart from quantity, pathways differ with regard to the responsibilities of companies. In the school-based pathway, participants are students enrolled in college. They participate in workplace learning (traineeships) in a couple of shorter and longer (between three months and a whole year) periods in a number of different labour organisations. In the work-based pathway, apprentices are as a rule employees who combine part-time education with an apprenticeship in a company.

Since the introduction of new VET legislation, different and more intensive interaction patterns between employers and vocational schools as well as between teachers and workplace coaches are developed to improve the connection between learning in school and in the workplace. In order to improve the knowledge and competence level of the working population and to reduce drop out without a starting qualification, there are also attempts to strengthen links and pathways between the levels of vocational education, from pre-vocational secondary education through VET to higher professional education (Onstenk, 2004).

Work based learning has become more important also in prevocational secondary education, as well as in higher professional education.

Governments as well as schools and companies are attempting to uphold the quality of learning in traineeships and apprenticeships on all levels. There are two main issues in dispute: the quality of workplace learning (content, guidance, assessment) and the quality of the connection between work-based and school-based learning, despite attempts to make VET more practice oriented and to improve connections between school and work. There is agreement that (although not necessarily on how) VET innovation at all levels should pay more attention to quality improvement as well as connectivity of work-based learning by establishing quality criteria for work-based learning places, by enriching workplace learning and by designing curricula which integrate learning places as well as learning experiences (Onstenk & Blokhuis, 2007).

Methodology

The paper gives first results from a developmental action research project on and in cooperation with TEAMstages ('TEAM traineeships'), a recent new form of traineeship in the Amsterdam region. The research, running from November 2007 to July 2010, has several aims: description, improvement, tool development, evaluation and transfer to regular VET. So far we have accomplished the descriptive stage, based on documents, self reports and interviews with stakeholders. Also results from the first year of TEAMstages are available, based on observations, interviews and questionnaires with students and coaches, as well as some test scores.

Results

The project

Teamstages is an initiative of the Regional Vocational College (ROC) of Amsterdam in cooperation with the Van den Ende-Foundation, funded by a famous Dutch theatre, musical and television tycoon. The project resulted from contacts that oringinated when a new theatre was planned next to a new campus of the regional college in the bursting new Amsterdam city and business area The South Axe (Zuidas).

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The goal of TEAMstages is to realise hundreds of extra traineeship places. This innovative project is planned to run as an experiment for four years. A growing network of companies and (pre)vocational schools in the region of Greater Amsterdam is participating in the program. The objective is that a growing number of students will get the opportunity to participate at least once in this kind of traineeship in TEAMstages. School year 2006-2007 was the pilot year, in which the basic idea has been tested by 53 (mbo, pre-vet and hbo) students in ten companies, ranging from a theatre, event organization, bicycle factory to a elderly home. One of the first projects was a team of students participating in the stage design of a new musical. In the three following years the number of participants and the number of teams that work this way systematically will be extended to 500 a year. The working method will be further developed. After these four years - from 2010 - it is expected that anchoring in the participating schools and companies has taken place. The visible role of a commercial company, funding a public traineeship has potentially (and proves to have) a very positive impact on the involvement of employers and availability of quality placements.

The slogan of the project is: `Let talents grow'. TEAMstages aim for powerful learning surroundings for talent development, work process knowledge and work place socialization. Making competence development of student the central issue implies important changes from traditional vocational education: more demand-oriented and more focus on stimulating students to reflect more on their own possibilities and choices.

Next to the assignments themselves, there is a strong publicity strand in the project, both local and national. There are a lot of meetings (organised by teams of students with professional support of the TEAMstages office) where students and companies tell about their experiences. A television show draws attention to the issues around work based learning and traineeships. Experiences of students and coaches in company projects are shown on national television as a real life 'docusoap'.

Organising work based learning in multidisciplinary, multilevel teams

The core of the project is learning in challenging real company assignments for multidisciplinary teams of students of different levels in the vocational column: prevocational (vmbo), vocational (mbo) and higher professional (hbo) education. Competences are developed by working together in a team of trainees (so not in a 'normal' job with regular colleagues). Within each project agreements are made between the student, school and enterprise concerning the tasks, coaching and responsibilities. During the TEAMstages period a strong appeal is made to talents



and competencies which participants have not (yet) developed. All parties are stimulated to trace talents of young people in the team, to connect and (further) develop them and hereby create new chances for them on the labour market.

The didactics of TEAMstages is build around a PDCA-cycle: Plan - do – check – act. The central element is working and learning together at challenging and realistic tasks. The participants must cooperate in a team with each other and experience how they need each other to complete the task successfully. The team makes a plan, carries this out and checks if results are as wanted and expected.

Students are prepared before their projects. There is organized preparatory training, focusing on

- group dynamic processes (what does it mean it for you to be part of a group and to effectively cooperate on a task),
- team building;
- give and taking effective feedback
- learn to handle successes and disappointments.

During the traineeship there is collaborative coaching by both school and workplace coaches. Coaches (both company and school) are supposed to be available at least one whole day a week. Coaching takes place in dialogue with the student. This asks other competencies of the coaches, competencies that are developed and trained within the TEAMstages concept. Also there is an emphasis on peer coaching. Higher level students (mbo and hbo) got a chance to practice management and leadership talents. In the process students and employees from both educational institutions and companies give each other systematically feedback.

There is constant and systematic reflection on the process, both on student and on group level. At each stage a number of evaluation themes is presented. Development of students is stimulated by helping them focus on their own learning questions, competences to develop, and by making them conscious about learning results: `What have you as a student/participant got out of it'? Students get a new view on their possibilities.

Roles of stakeholders

In the cooperation between TEAMstages and schools the affinity between the competence oriented educational concept and the philosophy and practice of TEAMstages became clear. The way students are approached in TEAMstages contributed actively to the educational renewal addressed at the VET schools with regard to competence oriented learning.

TEAMstages is an interesting project because it redefines the roles of the different stakeholders. Students are committing themselves to an assignment to be executed in a team of (heterogeneous) students. Companies redefine specific needs and tasks as assignments that can be executed by teams of students. They also commit themselves to an intensive amount and quality of coaching. The school commits itself to deliver more coaching than in regular apprenticeship or traineeship, and also to support students in integrating their learning experiences in the regular courses. As the evaluation of the first year shows, this was difficult to achieve for the schools. In the project school coaches are coach of a whole team, so they have to deal with students not only from their own school (and level) but also from other schools and levels. Also they were supposed to take more time for coaching than usual. Both

turned out to be difficult to realise. Nevertheless schools are enthusiastic about the project and are determined to solve these problems. Also all companies continue their participation in the project with new assignments.

Learning results

In the first year all ten projects ended successfully (the assignment was fulfilled), but sometimes after a difficult starting period. 7 students (of 53) dropped out.

Students as well as company coaches report good results with regard to competence development and work process knowledge. Students were in general very enthusiastic and scored high on some specifically designed competence tests. Students became aware of the fact that they do not learn (only) for a diploma, but for a career and most got motivated to develop themselves further by means of continuing vocational education.

The 'docusoap' shows very touchy and heavy scenes where coaches and peers trying to convince students to be on time or to take the assignment seriously. But also proud students when there product worked, their performance was a success, of when they were thanked by clients.

But it turns out that even in this experimental situation, with relatively large investments in coaching time by both school and company, establishing a connective relationship between workplace learning and learning in school is difficult, especially with regard to conceptual vocational content knowledge as tool to interpret and change the work environment. Although students and coaches agreed that a lot was learned, this was not necessarily connected to the courses students were in. Partly this is a result of the multidisciplinary character. Improving this connection is an important aim of the second stage of the innovative project.

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Introduction

Various meta-studies on organisational and occupational commitment coincide on employees' commitment to their organisation steadily declining since the 1970ies, while at the same time other forms of commitment like commitment to one's occupation became stronger. These findings may have to do with changing in work organisation as well as a changing role of the employees in this organisation. What has been neglected in this context is the role of vocational education, i.e. the development of vocational identity. We currently analyse the relation of different forms of commitment with the process of apprentices' development from novice to expert.

From the vocational pedagogy point of view, one should analyse various interrelations in this field. We developed a model of four interrelated factors, that themselves are influenced by a variety of context variables. Regarding *identification*, we look at organisational and occupational commitment, their varying strength and their relation (degree of influence, mutual reinforcement or constrain etc.). Regarding *identity*, we analyse vocational identity and other attitudes towards work like protestant work ethics. Furthermore, we analyse the relation between these two dimensions. Finally, our study aims at identifying various factors that play a role for these processes – the way the profession was chosen, an apprentice's motivation to learn the chosen profession, the apprentice's relation to her instructor, the general climate in terms of mutual learning at the company, the profession's esteem, pay etc.

Methodology

To test the dimensions of commitment and vocational identity, we developed a psychometric scale that was tested and refined two times using a sample of 300 apprentices each. To accout for the complex nature of commitment, we developed a set of four different scales: 'Organisational Commitment' measures identification with the company an apprentice works in, and 'Occupational Commitment' measures identification with the profession. Both are inspired by existing scales, but had to be rewritten in order to make them fit to the characteristics of VET in the German dual system. For example, as apprentices cannot decide about staying in the company after the apprenticeship and are not allowed to work longer times, many existing items had to be rewritten or skipped and even whole concepts to be reconsidered. The scale 'Professional Identity' models traits the apprentices develop while leaving novice status and becoming experts in their profession: oncerns on quality, active shaping of work conditions etc. Finally, 'Work Ethics' represents attitudes towards



work that are not related to the profession and rely on motivations that abstract from the object of labour. These are traits like accuracy, reliability etc.

Results

By now, the main results still concern the possibility of using these scales as an index of commitment. Internally, the scales are acceptable or even good, showing values for Cronbach's Alpha between 0.76 and 0.86. This holds even for the quite heterogeneous scale on 'professional identity', that consists in the diverse aspects of striving for quality, being able to reflect on the labour and active shaping of work conditions. Here, a value of 0.757 is surprisingly high.

Being all dimensions of commitment, we expect these four scales not to be independent. But the items of the scales should represent clearly different aspects of commitment. On the dimension of identification with the company or the profession, the scales occupational commitment (OccCom) and organisational commitment (OrgCom), this is quite clearly the case (figure 1). If we analyse the scales' items together, exactly these two factors emerge. The explained variance is about 59,466%. Graphically, the items are building clearly visible clusters.



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These two forms of identification should be in interrelation with the development of professional identity and work ethics. Here, too, a factor analyses points towards the adequacy of the items chosen. Again, the two expected factors emerge and explain 52.589% of variance. Both scales interact higher than the first two, but still are sufficiently powerful.



Figure 2: Factor diagram of items for professional identity (BerID) and work ethics (PWE)



Komponentendiagramm im rotierten Raum

In terms of apprentices' commitment, one main result by now has been the effect of the profession the apprentices learn on the different dimensions of commitment (figure 3).

Figure 3: Dimensions of Commitment for Apprentices (3rd year) from the Metal, Electro and Food Branches

Work Ethics



Organisational Commitment



Occupational Commitment

Professional Identity





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Promoting Competence Development of Apprentices through Combined Workplace and Workshop Learning

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Summary: Both on-the-job and off-the-job learning situations are crucial to provide high quality apprenticeship training, so that training workshops can also fulfil a crucial role in providing modern and effective training of apprentices. The shape of such training workshops needs to be revised, however, changing from the pure training of basic manual skills towards promoting the acquisition of work-process knowledge. Three case studies were carried out in large-scale companies and the results show how each has designed appropriate learning environments for their apprentices.

Keywords: Appropriate learning environment, training workshop, case studies.

Introduction

A fundamental element of the dual system is that the workplace takes a major role as a learning environment for apprentices. There is, however, the question of whether the workplace can be seen as an adequate environment for learning. This question is raised all over Europe, when researchers (Ellström, 2001; Van Woerkum, 2003) and educational authorities discuss innovations and improvements to the initial education pathways. When managers have to establish priorities, production and productivity will usually outstrip learning, because the return on investment plays a minor role in the considerations of the responsible actors. Another problem is integrating work-based learning and school-based learning. Brandsma and Nijhof (1999) propose that a transition stage between education and labour as a 'guided familiarisation period' at the beginning of a job, in which the school no longer plays a substantial role, could help to solve the problem.

Primarily large-scale companies in Germany and Austria tried to find another solution by setting up a third learning environment for apprentices besides the vocational school and the real workplace: the training workshop. This formal learning environment is intended to train vocational skills and competences, but isolated from the existing pressures in front-line business. Mainly in the 1970s and 1980s, more and more training workshops were built by industrial companies, and it looked as though the appropriate solution had been found. In recent years, however, the value and status of the workplace as a learning environment have increased, not only for apprenticeship training, but also for learning activities in general (Severing, 1997).



Moreover, through the increased application of the line management concept, both initial and further training costs are increasingly being evaluated by cost-benefit analyses and, as a consequence, both the extent and numbers of training workshops have been reduced (Buck, 1996).

New learning concepts like the organisational knowledge creation strengthen the importance of sharing the tacit knowledge of experienced workers, which induces an increased meaning of learning in practice and learning while working (Nonaka and Takeuchi, 1995; Van Woerkum, 2003).

Collins, Brown and Newman (1989) have elaborated the cognitive apprenticeship model (see also Brown, Collins & Duguid, 1989; Collins, Brown & Holum, 1991) and define the following criteria for turning learning environments into effective and successful learning situations:

Any learning experience should be meaningful and motivating for learners;

Any learning experience should take prior knowledge into account;

Learners must be actively involved in their own learning. Learning professionals are therefore required to coach their students intensively at the beginning of their learning sequence. Gradually, coaching and error correction should decrease, with the aim of making the learners more autonomous;

Learning sequences should become more complex over time;

Learners should concentrate more on the general nature of a task before attending to its details;

Learning experience should go beyond domain-specific knowledge in order to train learners in ways and opportunities to control their own performance and strategies for acquiring additional knowledge.

These conditions are valid in principle to any learning environment, i.e. also for workplace and traditional schools (Brandsma & Nijhof, 1999). Based on the model of cognitive apprenticeship, Mulder (1997) developed a three-dimensional configuration of increasing complexity for vocational courses. In this model, complexity refers to the dimension of the content of the learning tasks, the dimension of teaching behaviour and a contextual dimension. Nieuwenhuis and Mulder (1999) conclude that vocational education should consist of a mix of different instructional models. Part of the required qualifications can be acquired in problem-based learning settings like school or training workshops, whereas other qualifications should be acquired in authentic learning situations. For qualifications such as job attitude, it is important to experience real work situations. Summing it up, on-the-job as well as off-the-job learning situations should be used complementarily to design vocational education (Nieuwenhuis, Mulder & Berkel, 2004).

When reviewing the list of conditions for successful learning environments, one element is missing: planning and structuring the learning phases of apprentices with respect to both learning environments. When companies offer two 'learning sites' for apprentices (workplace and training workshop) managers of apprenticeship training must ensure that the learning periods within both settings complement and harmonise with each other and that the cooperation and coordination between both sites follow the conditions described above (Nijhof, Heikkinen & Nieuwenhuis, 2002).

Given the different concepts and considerations above, a key question of our research study was (Stöger, 2007):

How could an appropriate learning environment for apprentices in large-scale companies look like?

We believe that both on-the-job and off-the-job learning situations are crucial to provide high quality apprenticeship training. We, therefore, advocate the use of training workshops as a complementary part of vocational training at real workplaces. In order to increase the variation in apprentices' experience, it would be useful to alternate the learning sequences at the training workshop and in the front-line business (see Table 1). Another benefit of such sequences would be the promotion of the apprentices' reflection phases on the experience acquired.

One important issue with regard to the interconnection between both learning sites is the formulation of an effective design, how to match the different learning settings. To this end, it is important that there is close cooperation between the VET department and the Training department.

Another crucial factor is the expansion of the key tasks of the training workshop. Usually, training workshops are separate, off-the-job training institutions, which mainly impart basic manual skills. To provide successful learning conditions, a training workshop is required to extend its function to various areas. For instance, it should strive to combine the delivery of declarative knowledge, procedural knowledge and strategic knowledge, which could be realised by training generic skills in the frame of real work commissions. Another opportunity is the conducting of further training activities in order to foster cooperation between HRD and apprenticeship.

Indicators	Clarifying issues
Alternate training sequences in front- line departments and training workshop	In order to foster reflection on and control of the apprentices' expertise, the learning sites 'front-line business' and 'training workshop' should continually change during the apprenticeship period.
Close collaboration between front-line departments and training workshop	In order to adapt the learning processes in both learning sites, the company promotes close cooperation between the training workshop and the front-line departments.
Multifunctional tasks of the training workshop	In order to reduce the separation of apprenticeship from front- line business and HRD and to raise the added value of the training workshop, it should conduct more tasks than the training of basic skills, for instance, the conducting of concrete work commissions or offering further training activities.

Table 1: Crucial conditions of appropriate learning environments for apprentices

Methodology

We decided to conduct a particular survey with the exclusive aim of selecting three ideal cases. 'Ideal' means that these companies have reached the first stage of the growth process towards a learning organisation, because they perform proactive HRD and apprenticeship training. Hence, they are called 'learning-oriented



organisations' (LoO). Two different questionnaires were developed for the areas of apprenticeship and HRD, and two 'scaling' lists, which relate the indicators to the questionnaire items. A target population was defined on the basis of two criteria: the training of apprentices and the size of companies. The latter was chosen because it is mainly the large-scale firms that have adequate financial, structural and personnel resources to conduct proactive apprenticeship training. Moreover, it allows some comparisons between the different cases to be made. In total, questionnaires were sent to 150 companies, and 30 firms returned completed questionnaires. The subsequent analysis indicated that ten companies scored more than 50% of available points in both fields (HRD and apprenticeship training) and could be regarded as LoO. Finally, we were able to secure three companies as case study objects, which held the first, second and eighth positions in the companies' ranking.

Multiple Case Study Research

We had four reasons to choose a case study approach (Hamel, Dufour & Fortin, 1993; Johnson & Christen, 2004; Stake, 2000; Yin, 1994). First, both organisational and learning activities in the field of apprenticeship training are 'real-life phenomena', which primarily demand a holistic and naturalistic research methodology. Secondly, case study research takes a specific role among the various qualitative research approaches, because researchers can develop theoretical concepts about the reality (e.g. from literature review) before the empirical research takes place. Thirdly, case study research allows the combination of understanding the specific cases in detail and searching for something universal beyond the single case. Fourthly, a focus of this research study is the corroboration of the theoretical concept in the business reality. More attention is therefore paid to the identification of common settings than to pointing out the differences between the cases.

The research plan aimed to interview seven people belonging to the VET department, the HRD department, the front-line business and the management, which could be realised in one case, while in two companies six interviews were conducted. The research methods used were focused interviews and document analyses.

Results

Case I

Case I is a private construction company and belongs to a worldwide enterprise group which develops, manufactures and markets products for professional customers in the construction industry and building maintenance. The plant in Austria mainly focuses on manufacturing certain units and components for drills, chipping hammers and direct fastening. The plant employs about 400 people and trains 48 apprentices. The company runs a training workshop for apprentices, in which three full-time apprenticeship trainers are employed.

All the interviewees from this company agreed that the training workshop is an essential prerequisite for the successful training of apprentices. Some of them emphasised that a key factor of the high quality of the apprenticeship training provided is the alternation of training periods between the training workshop and

front-line business. Another important feature seems to be the fact that the training workshop fulfils tasks which cover more duties than the pure training of apprentices in basic manual skills, for instance, the conducting of practical commissions or the further training of employees.

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Case II

The selected case is a private steel company. The company employs 7,800 people and trains 323 apprentices. About 60% of the apprentices are trained in the field of metalwork and the rest serve electronic apprenticeship trades. The VET department employs 22 full-time apprenticeship trainers, who work in the training workshop.

The transformation of the training workshop into a multifunctional service facility is an outstanding example of how such a learning site can become an integral part of the company's business life. The conducting of several services, for instance, the training of internal and external employees has increased both the economic value and the internal status of both the apprenticeship training and the training workshop. In our view, the VET department has found remarkable answers to the economic and organisational challenges which are even more massive for those companies that finance a training workshop for apprentices.

Case III

Case III is a multi-utility supplier and represents a holding company which is the property of a large city. It has one servicing subsidiary and four operative subsidiaries: Electricity, Gas/Heat, Community Services, Public Transport and Management Service. The whole company (including the holding and the five subsidiaries) employs 2,600 people and trains 77 apprentices. About 55 apprentices are trained in electronic apprenticeship trades and the other apprentices serve commercial apprenticeship trades.

All interviewees emphasised the necessity of a training workshop for providing high quality apprenticeship training. However, the challenges and requirements for being a modern and effective training environment have considerably changed in the last decade. Now, a training workshop is required to carry out more tasks than the training of basic manual skills.

The training workshop we analysed fulfils nearly all these requirements; for instance, it closely collaborates with the front-line units by conducting practical commissions. Another measure is the permanent rotation of apprentices between the front-line business and the training workshop, which promotes both the reflection phases on the experience acquired and control of the learning progresses. Finally, we want to refer to a very important initiative, which underpins our thesis regarding the usefulness of a training workshop. In the last few years, the VET department has followed the overall trend to gradually extend the practical training periods of the apprentices in the front-line business. Recently, some front-line units have started to hold introductions to the particular working tools in use for the apprentices assigned there. After a while, both the VET department and the craftsmen in the front-line units recognised that the procedure was ineffective, and agreed to assign these preparation courses to the training workshop.



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Workshop III

Chair: Lorna Unwin

Costs, Benefits, and Outcomes of Apprenticeships



Quality and impact of a new apprenticeship approach in the Italian Region of Marche

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Summary: In Europe, all states are seeking to flexibilise their VET systems. This development goes also for Italy, while this country is in a restless process of change. This is due to looking for a new role in the global economy for example the inequalities between North and South Italy and the opening of the eastern market economies.

One political answer is the recent introduction of a new apprenticeship model as an instrument to reduce rather high unemployment for young job seekers. Also due to competition in the global market broader and more flexible competencies are needed on the workers level. Based on a new apprenticeship training act the local companies have the chance to deliver apprenticeship like training arrangements by providing alternating training between work based learning at the enterprise and a set of training courses at regional training centres or accredited further training enterprises.

Based on own empirical studies we will analyse whether these recent developments are providing the quality they should. By studying three company cases who take part in this new apprenticeship programme we like to raise the following questions:

What are the reasons for the companies to recruit apprentices in the framework of the new training model? Do the companies think that the new state support and measures to sustain formal apprenticeship is sufficient for their training needs? Does the new programme foster work based learning? Do the external courses provide a new quality of learning for the apprentices? Does the new model support interaction under trainers and teachers? As far as this question can be answered, does the new apprentice model change the competence development process for students and for the labour market? These questions will be analysed under three aspects: *Work based learning; Institutional consequences for companies and VET schools as well the Consequences of the new provision for apprentices, trainers or teachers.*

Keywords: New Apprenticeship system, Learning partnerships between companies and VET providers, Effects on students and VET stakeholders, Future challenges

The European Countries have agreed in 2000 on their Lisbon summit to a new strategy to make Europe more competitive. This in order to create a more dynamic knowledge-based economy in Europe that will deliver sustainable growth, generates more and better jobs and create greater social cohesion. The Lisbon deceleration places a clear emphasis on the role of VET, in order to equip people with more and better skills and competences that can be used in the labour market not only today but also in the future. VET is regarded as the intersection between educational, labour market and economic policy which is seen as "means of up-skilling the workforce, changing work practice and as a motor of innovation. Governments see VET as a means of increasing competitiveness, employment and growth by securing the supply of skills to the economy" (Leney et al. 2005).

In terms of the structure of initial VET, it is different from country to country. Italy has introduced a new apprenticeship model besides their school VET

The question araises why we find different structures of VET when looking to Europe. The national Vet-systems seem to be much rooted in different economical and cultural traditions. VET is shaped by the national innovation system as well as regional/ local circumstances, by the interest of more or less powerful social partners. Therefore we can say that VET is of dynamic nature, which makes it different to steer from one central European standpoint. We therefore can summarize that the given European VET systems are diversified and it seems to be that it is quite impossible so far to harmonize all these different structural settings. Leney and others expressed in their Maastricht study: "Thus there may be some convergence arising from common underlying pressures but national, regional and sectorial contextual aspects of VET are likely to drive national VET systems in different directions" (Leney et.al. 2005).

One idea seems to be in coherence under all member states: there is need to institutionalise regional/local learning partnerships under companies and VET schools on the regional level and to structure this in sectoral fields, like e.g. the building or the automotive industry. This development is triggered on one hand by the needs of the learners to learn practical and theoretical skills at different learning venues. These industries have changed guite considerably over the last centuries to better develop their human resources, which in most cases is the strongest asset of the organisation. The concept of the learning organisation can be understood as a continuous process of learning in practical work place arrangements and at other external training sites, where more classroom styles of learning take place. Argyris & Schön, (1999) and other authors define the learning organisation as a key competitive factor in modern economies. There is a link between learning organisations, VET system and individual competence development for the apprentice. Nyhan et al. (2003) argues: "One of the keys to promoting learning organisations is about building workplace environments in which people are motivated to think for themselves so that people are learning from their work - they are learning as they work."

Such a learning concept supports a learning culture, which links systematic learning with practical learning. While focusing stronger on such a culture a certain local environment is needed. This may offer different learning possibilities at industrial and school based learning venues in order to promote creativity, autonomy, responsibility and a sense of belonging to a community of practise (here the company) (EC 2003). The issue of work-based learning is coming here into play,

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challenging the question how an interactive transfer between the different learning sites can be organised (Fischer et. al. 2002).

The characteristics of the learning methods can be defined as (a) work-based and 'real world' driven (as reflected in the emphasis placed on competency development), and (b) situated in real working environments, i.e. integrated working and learning.

In Europe, the resurgence of the notion of "region" can be seen as a political strategy to deal with the development of a multi-cultural and economically divergent European Union. A regional or local focus can also be seen as offering a practical cooperation framework for the business development of small enterprises and of developing the learning environment and infrastructure for the regional industries (Deitmer& Attwell 2000).

VET is playing a strategic role in regional development. Innovative communityoriented schools and enterprises are creating a more strategic partnership. These regional networks are acting as catalysts for the production of new ideas. The community can achieve goals, which could not be achieved by the different bodies working alone. A theoretical model for this kind of education-led arrangement has been called a "learning region" in the EU.

Giving new answers to labour market and economy by introducing a new apprenticeship model in Italy – the example of the Marche Region -

From the initial apprenticeship law 196/97 - art.16 (Treu) training takes place in the companies and externally at VET schools and accredited training organisations. The registered apprenticeship contracts follow a growing trend in the Marche Region from 17.106 units in 1998 to 31.120 units in 2006.

With the new apprenticeship law (called Biagi Law), the apprenticeship contract has been redefined in order to answer to new and diversified needs of the labour market and the economy. The new law defines the apprentice contract according to the following three typologies:

- Initial apprenticeship to carry out the right for education and training;
- professionalizing apprenticeship to obtain a qualification through training in the work place and external training provider(s);
- apprenticeship to obtain credits for a diploma or certificate in higher education.

Therefore, to hire an apprentice with a professionalizing contract there is a need for two essential elements: National Working Contract (CCNL) which should discipline the professionalisation towards competencies, duration, salary, etc.. The regional authorities have to approve the training profiles for that specific sector. The regulations define the following training variables:

- *formal training* is carried out by commissioned regional training organisations or under certain conditions on the job.
- *non formal training* is typically carried out by the employer at work in the company, it is described as the practical method to reach the professional competence outlined in the qualification profile for each sector.
- *Training Profiles*: are the training goals and the abilities to acquire within the apprenticeship contract, both through formal training and non-formal training conveyed on the job.



Training effects in apprenticeship: The model adopted by the Province of Pesaro and Urbino

At a national level the testing launched in all the regions, have provided valuable indications, both for the organisational processes and the working methods to be implemented as new apprenticeship model.

The emerging weak points can be summed up as follows:

- Lack of knowledge on behalf of the actors belonging to the innovative legislative system which reforms the apprenticeship contract in general and in particular external training that becomes compulsory.
- Logistic difficulties because of the excessive distance between the working location of the apprentice and the external training centre.
- Difficulties represented by some employers in conciliating the production needs with the planned training agenda.
- Participation and involvement of the company tutor is to be pointed out. His role is of strategic importance for a successful training activity
- Heterogeneous background of the apprentices groups (class) concerning age, previous education and work experience.

On the basis of these considerations, the Province of Pesaro and Urbino, initiated the following training activities:

- In the year 2000; 55 courses (1st year) for apprentices and 40 courses for company tutors, involving about 900 students and equally company tutors belonging to the different productive sectors of the province and 15 courses (2nd year) for apprentices, which involved about 240 students
- In the year 2002; 30 courses for apprentices which were in compulsory education age and equally courses for company tutors
- In the year 2004/2005; 125 training courses for apprentices and company tutors, which involved about 1800 apprentices and company tutors
- In the year 2005/2006; 130 training courses for apprentices and company tutors involving about 2000 apprentices and company tutors

Such experiences have been a valid opportunity to test and verify management and organisational methods of the activities, practical for users that show particular needs, in a certain way unexpected.

The intervention plan which supports the innovative actions introduced *with the new model of supplying training activities in apprenticeship*, replies to the aim of creating in the territory a conscious network of actors belonging to the apprenticeship system, in a sharing point of view, cooperation and involvement among the different subjects interested. The main innovative aspects, which support the specific actions concerning the training activities, are:

- Modular training courses available and chosen on the base of achievable objectives (catalogue of modular training)
- Integration between formal and informal training (trainer or tutor in the company)
- Information and dissemination activities all over the territory
- Permanent updating of the data base with apprentices and company tutors (records)
- Pre-course interview carried out on the premise of each single company
- Training activity for the company tutors (12 hours)



- Activities to support training
- Training agreement between apprentice, training organisation and company
- Selection of aimed training modules (personalized training course for each apprentice)
- Flexibility in days and time in attending training classes.

The working model for training is sort of a "dashboard" useful for decision makers, in order to tune up and improve, constantly, the apprenticeship training offer in the Province of Pesaro and Urbino, so to make it more effective in the development of the territory.

The current running evaluation of results and the quality of the training offers, are based on the following key variables:

- The role of the apprenticeship within the planning of the province
- The level of the organizational and didactic models innovation
- The transfer of competences within the sector
- The apprentices and the distance from working sites
- The apprentices and their achievements on professional development (Competences)

To return a picture of a system, which progressively consolidated during the last few years, it has expanded the capacity of responding to the needs of the apprentices and companies; furthermore it has strengthened the liaison with the territory through the definition of specific solutions.

Some open questions derived from three company case studies involved in apprenticeship activities

Interviews have been conducted in 2006 to owners of three companies taking part in the new apprenticeship training programme. The small and medium sized companies are located in the Province of Pesaro and Urbino. These small and medium sized companies operate in textile, plumbing and related building works, high tech and electronics. The summary of the interview is a clear indication that the innovative programme is accepted. Most companies have already introduced an internal apprenticeship training system which is based on an individual contract between trainee and training company. This makes apprentice training duration rather long: electronic company up to 5 years: Heating, ventilation and air condition companies even up to 10 years. The companies have many wishes for improvements. The comments are:

- Companies need stronger external support/training specific to their production needs e.g. like technical subject knowledge to supplement efficiently their own in-house training activities. With the new apprentice system a first step is done; but it is still regarded as weak in volume and in specific regarding occupational profile standards. Therefore a lot of what has been offered so far is seen as to general. The subject related aspects of learning should be strengthened.
- The cost of external training because of loss of productivity is rather too high comparing to the benefits given to the company in hiring the apprentice.
- Companies prefer apprentices from the local community to take advantage of short distance.





- Training styles at the three companies are following the traditional three steps method: preparation of work by viewing the master; own repeating action by apprentice and control of the work done. With an extended external support also more advanced learning method like project learning should be strengthened.
- Every company is developing on-the-job training programme, too isolated from their Associations. Associations shall get more active in supporting the whole process. This could mean the development of a regional network of trainers and teachers, with the objective to learn about more advanced training methods. This means that from the side of the companies there is a wish to practise a regional dialogue (ideas for this in: Deitmer&Gerds 2002) between the local stakeholders on training needs and teaching/Training methods.

The Italian apprentice system exists more likely as a 'grown-up employment' instead of introducing a 'skilled occupation' pathway. The apprentices (target of the training process) follow an 'organisational picture' set up by the functions of the individual company. In this respect the informal in-house apprenticeship pathways seems to work sufficiently but is too dependent on the will and resources of the individual company to invest into their apprentices. The cases showed that the companies are delivering rather good cases and are doing a lot on their own. More effort and resources are needed from the associations, the local government and the training providers. On the structural side well defined occupational definitions (or occupational standards like in the German system while following the concept of Beruf for a deeper understanding of the concept see: Deissinger 2001) are missing. They could be governed by state statutes and would allow overcoming the limitations of the individual firms. State-standardised 'skilled occupations' could deliver a gualification framework which tells us what to be taught in the training courses. Trough this, the apprentices' acquired skills and knowledge advance can be supervised and validated through intermediate and final examinations as well as certified so to be accepted on the market.

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Investigating the Quality of cooperation of learning venues in Countries with little History of Cooperation - the Case of China and Malaysia

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Summary: The article investigates the quality of collaboration between the school and industrial work practise in VET Countries with little history of cooperation of learning venues. China and Malaysia are recently improving their VET systems. China is developing VET in a way of introducing competence developing programmes aiming at VET teachers and schools (CDP Programme 2007). Malaysia is implementing specific structural changes by introducing a dual training system (NDTS) (CDP Programme 2007, Malaysian Government 2006).

We want to investigate the potential success criteria that could develop a better integration of learning at work and learning at VET schools. We will analyse why there is a trend of re-discovering the collaboration dimension in the learning process of VET students. Our assumption is that this is related to a change toward more flexible production. Product quality has to improve and is shifting towards more customized products. Such innovations are on better skilled workers. The competence profiles of workers in the studied countries are enriched in terms of multi-skilling. This development forces the regional actors from companies and schools to cooperate much stronger as before and to ensure work process learning.

The analysis is based on an evaluation tool which tries to finds out key success factors for better cooperation. The evaluation follows a double function: First analysis the weak points in the cooperation and second supporting the cooperation partners in their decision making (Deitmer et. al. 2003, Deitmer & Rashidi 2007). The results from our research show that there is still just coexistence but rarely to be seen good co-ordination of the learning programmes in the school and the enterprise in the two countries. What is missing is active communication between trainers and teachers which are supported by well proven evaluation and support tools.

Keywords: market demands, skilled workers, evaluation, work & learning partnerships, development of trust, cooperation management





Increasing demand for skilled workers

The demand for skilled workers has substantially increased over the last years. The production of technical products as well as services in this relation increasingly demands a new production concept. This implies that job demands are also converging. Qualification and skill needs are increasingly driven by globalised markets. These market developments follow a track to more advance and customer driven product solutions. But by contrast, there is a difference between national VET systems in providing skilled workers and that of the requirements from the markets. Therefore we can state a gap between work and production demands and that of the provided skills by the current VET measures.

In fast developing countries like China and Malaysia it can be studied that the concept of work process learning gets into trend while this not only includes class room leaning but also builds also on tacit and experience based knowledge by learning at the working places either in industry of service sectors (DCCD 2007, Rashidi 2007a). What is learned in the classroom shall get into closer contact with what is learned in practice, or in other words, learning in the classroom shall enable the VET students to take a much closer relationship to company's real work tasks and business processes. Good practice would mean that the learning processes at school should deepen the concurrent or in future developed practice learning at the work place in industry, service or the craft trade company. Systematic and theory-based knowledge should help to better understand the practical dimension of learning at the workplaces. Improving the curricula, developing work place learning partnerships hat to be embedded in a regional VET dialogue can be noted as priorities for better learning at work as well as at the side of the VET school. (Rauner 2004, Spöettl 2004, Deitmer & Heinemann 2007)

Cooperation of learning venues in China and Malaysia

China is missing skilled workers because only a small percentage of the workers perceive proper skill training (only 4 % of the workforce has a degree as skilled workers). The image and attractiveness of VET is problematic. In China vocational education and training is mainly school based and is perceived as a 'second class' education. For a long time the vocational schools did not have the necessary resources to provide an appropriate VET. Since they traditionally cannot provide sufficient practical experiences, the real preparation for working in production is done by on-the-job-training in companies in phase after the schooling process. A major step in improving the image and attractiveness of VET was the establishment of a system of vocational universities since the late 1990s.

The recent status of the Chinese VET system may my hinder the move from a purely mass producer with large scale production terms to a more sophisticated producer of higher quality products. By following our afore mentioned argumentation on new production means that this is based on better qualified workers and technicians. They need to be more flexible and innovative. The recent policy developments in China show that this is well understood after years of not investing into VET. This might be the reason while Chinas central government decided on a VET reform in 2005. The reform intends to overcome the lack of qualified and skilled staff. Throughout the country different measures in all regions and cities on school and company lever are undertaken. On first step towards reform of VET in China was the upgrade of the status of the Chinese VET system. This should be

understood as the third column beside academic and general education. Secondly the vocational education curricula should be re-directed by the qualification needs of the enterprises which have to be defined on regional level. This means that local administrations and the corresponding vocational institutions begin to cooperate with local industries. The characteristics of the curriculum is emphasising on competencies based on work experiences as well as enterprises' requirements and on optimizing teaching styles and procedures according to action orientation (Handlungsorientierung).

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These activities lead towards new forms of collaboration under VET schools and enterprises in order to install the concept of integration of work and learning. In every bigger region (like for example for the governmental VET system in Peking) VET teachers trainers projects (CDP) have been installed. This programme covers a financial volume of 150 Mrd. RMB (ca. 1 Mrd. Euro) until 2010 to overcome the shortage of skilled workers..

This investment is based on the fact that Chinas urban regions in the West of the country are requesting every year 24 Mill. new employees. These quantities are to be provided by the rural population. Different measures are undertaken (e.g. organising school by teachers teams; school as a training base; Teachers training) including the move of qualified personal as trainers from industry into schools as well as work placements for VET teachers in companies. This in order to strengthen work orientated learning in schools and to define work orientated learning projects between the school and company partners. The new target are to overcome the disjoint between theory and practice, the problem of inadequate equipments and conditions and improving teachers' practical teaching ability. (Rauner & Zhiqun 2007, CDP 2007).

Malaysia recently introduced a new dual training system (NDTS) which is based on dual structures by teaching in colleges and of industrial training in companies. This decision on Malaysia's human capital development has received national priority in the Ninth Malaysia Plan, 2006-2010, stressed by the Prime Minister on March 31, 2006 (Malaysia, 2006). As an element of that also here there is need for a new kind of cooperation under enterprises and VET colleges.

Malaysia describes as one of the main problems the weak relationship between industry and VET institutions (Malaysian Government 2006). Industries are embarking on training of not relevant skills by the VET schools. The training institutions on the other hand, are blaming the industries for not providing enough information and assistance to their VET teachers especially in preparing the appropriate VET curricula (Rashidi 2007).

Why is the cooperation of the learning venues so important to develop the VET systems?

Collaboration between industry and VET institutions is a key element to train workers in practical and theoretical terms. This kind of cooperation needs to be based on trustful and well organised partnerships. This could be strongly sustained by the development of work based curricula. But work based curricula require a close interaction of industrial trainers and school teachers. This is a problem for VET countries where no dual apprentice tradition is given.

In the two countries the school to work transition is still rather traditional. The students leave school, look for a job and try to make use of what they have learned



so far. But this transition model is not working anymore. The quality of school leavers in terms of employability is to low and the skills are not yet developed the companies wish. Leavers suffer severely from deficiencies in skills (e.g. missing multi-skilling) and practical knowledge (e.g. action orientation). Co-operation programmes between vocational schools and local industry might support the solution of this "practice problem". It can be studied in these countries that there is a need for better cooperation between enterprises and schools

Method

Potential criteria that could lead to effective collaboration are investigated. Identification of criteria and issues impacting on collaboration between industry and VET can inform policy and help to monitor the implementation of initiatives in Malaysia and China by the staekholders.

The ERC Tool (Evaluation of Regional Cooperation between VET school and local companies to enhance work process related learning and cooperation) is to be used in focus group discussions. These meetings encompass representatives from schools and local companies. Two major goals are followed by this evaluation instrument: First, the trainers and teachers reflect about their actual cooperation practice. Secondly, the trainers and teachers shall try to do an assessment of their cooperation. This is based on a discussion process which is making clear the convergent and divergent views about the collaboration activities. As a key element of ERC the discussion is focused on individual and collective weightings and scoring of a set of 5 main and 11 sub criteria.

The assessment is following five main criteria: (1) goals of the cooperation under local VET school and companies, (2) the quality of the partnership in terms of trust and communication under trainers and teachers, (3) the management of the cooperation, (4) for competencies achieved by students, teachers and trainers and last nor least on the (5) dissemination of the cooperation practice. The criteria can be understood as reference points for assessing the performance of the actual cooperation practise (Deitmer & Rashidi 2007).

The layout of the evaluation method as a formative evaluation grew from experiences within regional and national R&D programme evaluations (Deitmer et. al. 2003, Deitmer 2008). The potential of this tool is, that it can accompany processes where learning and working meet and mesh, helping to identify learning potentials of work tasks as well as supporting the collaboration of actors with pedagogical and work backgrounds. (Deitmer 2003, Deitmer & Heinemann 2007, Deitmer & Rashidi 2007).

Results

While investigating the cooperation practise in Malaysia in 2007 several stakeholder interviews, one evaluation workshop was held to investigate the cooperation practise in Malaysia. By referring to the documented discussion outline (Rashidi 2007), we can state, the following problems and dysfunctions within the introduction of the dual system (NDTS):

• The industrial partners, especially the small ones, have the perception on NDTS that they benefit too little from the apprentice model; they see they return of their human investment into apprentices as too little. The problem

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could be the NDTS contract duration of two years while deliver bad cost benefit ratio. This may be better in three year apprentice contracts.

- Companies outside NDTS see the objectives for their participation into the dual model as not yet clear. Promotional campaigns by government are not functioning well; because the dual system expert are missing skills; the impulse should be better come from the local VET school. Truly there is lack of good information for all companies in Malaysia.
- The problem for not trusting onto the new state offer on apprenticeship training is seen also in the general status of the SMEs. This in their other management dysfunctions. SMEs lack general management knowledge in other important areas of management: finance, production management, product improvement. Management of VET is another requirement.
- The companies fear misconception between what is learned in the college and what can be learned in the enterprise: a good swing between theory and practise. This insofar, that the learning possibilities at the working place are not yet as rich as they could be.
- For the small companies the participation of bigger companies in NDTS has a lead function. When they say yes to dual learning model SMEs are much more forced to follow. Because the than better trained employees trigger them not to fall behind. Also they might acquire skilled workers from bigger enterprises who are trained through NDTS.
- Partnerships between VET College and companies require a set of different development tools to develop, plan and to evaluate cooperation. There is a need for a regional VET dialogue. To enable school and business partners to specify their cooperation concerning common goals, cooperation management etc..
- The participants of the evaluation tool workshop gave full support and recommendation for the ERC Tool. This should be used as an instrument to assess the collaboration process between public and private institutions in other cases.
- In the evaluation workshop not only the cooperation was assessed but also suggestions for improvement were made. As most important criteria are seen: development of trust under partners, learning and competence achievement for students, achievement of cooperation goals as well as a well working swing between learning and work at learning venues. The scoring shows that that averages score between 4 and 6 gives an indication that the current situation on partnering in dual learning delivers many potential for improvement.

For China the investigation could not be finalised yet, while the evaluation process is under way. It might be noted that the Beijing Academy of educational science (BAES) and herein the Research Institute for Vocational and Adult education (IVAE), which is responsible for the competence development project for the over 180 VET school in Beijing, intend to foster research on cooperation questions. They authorized studies on this topic to give advice the local government as well as the stakeholders from VET schools and companies. The cooperation between vocational school and enterprises is seen as a critical factor for enhancing the Quality of VET. They are a lot of obstacles. Beside the reservation of the companies for cooperation due to weak qualification offers from the VET schools the laws and regulations are



seen as insufficient. They understood that the model of cooperation in terms of management, pattern, content and effectiveness needs improvement. As a whole what concerns Beijing is very similar to the situation in these terms throughout the country. A model for more balanced interest has to be found. This should also induce a more stable motivation for willing to cooperate. This needs joint efforts of the government, enterprises and the educational institutions (BAES 2007).

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Costs and benefits of apprenticeships in the lowest track of VET

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Summary: In Flanders apprenticeship systems combining training in a training centre with employment in a company are situated in the lowest track of the vocational system and has a rather negative image. The question is how to motivate employers to employ apprentices from these apprenticeship systems, as it is very uncertain that benefits will compensate the costs. A quantitative and qualitative research (using a postal survey, in-depth interviews and focus groups) among employers was carried out to answer this question. All analyses point in the same direction: the investment in training and supervision is large, immediate returns are limited and long-term returns are very uncertain. This paper illustrates that in cases where apprentices come from the lowest vocational track, financial compensations are not the way to stimulate employers to hire apprentices. Policies promoting apprenticeships for vulnerable young people should focus on measures that enhance successful outcomes of the apprenticeship training.

Keywords: cost-benefit analysis, employers, survey, qualitative research

Introduction

In some countries (e.g. England, Germany), apprenticeship systems are a valued part of the educational system, attract a considerable share of pupils and lead to qualifications valued by the employers. In Flanders however, apprenticeship is mainly situated in the lowest track of the vocational system and has a rather negative image.

At the age of 16 (two years before the end of compulsory education) young people can opt for part-time vocational education in one of the two existing systems. The oldest apprenticeship system (existing more than a century) provides training to about 5000 trainees, employed mainly in small enterprises. One day a week, trainees go to a training centre; the other four days they are working. Trainees not having a contract with an employer are not admitted to the system. Until recently, this system did not belong to the formal educational system. The second apprenticeship system dates from the eighties, when compulsory education was prolonged from the age of 16 until the age of 18. It was created within the formal educational system in order to give pupils for whom a combination of learning and working would be more appropriate the chance to be trained part-time within the educational system. In this system more than 6000 trainees are trained in a centre for part-time vocational educational education two days a week. The trainees are supposed to complement this training



with employment during the rest of the week. However, compulsory education law did not make the employment compulsory.

Both apprenticeship systems mainly attract young people with a sometimes very problematic school career and a disadvantageous background, who are often not motivated to work and lack the attitudes required by employers. Half of the pupils in the second apprenticeship system do not combine their training in the training centre with employment. Moreover, in both systems many employed trainees fail to complete their training in the enterprise. Partly, these problems are due to the pupils themselves, but partly also to the difficulty of finding employers who are willing to hire apprentices from these systems.

The question is how to motivate employers to employ apprentices from apprenticeship systems situated at the lowest end of the vocational track, as it is very uncertain that benefits will compensate the costs.

Methodology

In order to gain insight in the opinions, motives and experiences of employers with regard to engaging apprentices from the lowest vocational track, a survey was carried out, in combination with in-depth interviews and focus groups.

Survey among employers

A survey using a standardized questionnaire was conducted among 648 employers (this equals a response rate of 29%) employing at least one apprentice in part-time vocational training in the Flemish part of Belgium¹⁷. The questionnaire included the following topics: basic features of the company and the presence of trainees, motives for hiring apprentices, training activities, time invested in training and supervision, training outcomes, financial costs and benefits. Part of the questionnaire was based on other research (Smit 2005; Hogarth & Hasluck 2003; Hogarth & Hasluck 2002).

In-depth interviews and focus groups

The quantitative data were complemented with data from interviews and focus groups with employers, further exploring the topics dealt with in the questionnaire. The aim was to gain more insight in the way employers weigh the pros and cons of training apprentices against each other, in measures that could make apprenticeship training of higher quality and in measures the government could take to enlarge the number of apprenticeship positions. Contrary to the survey, the interviews and focus groups regarded not only the companies working for profit but also nonprofit organisations (local governments, health and cultural sector, ...), who are nowadays still not a big provider of apprenticeship positions.

The group of interviewees was diverse: employers who hire apprentices and employers who do not, employers having little and employers having much experience with training apprentices, employers who once hired apprentices but decided not to continue with it, ... Two focus groups were organised with

¹⁷ This research was commissioned by the Flemish minister of Employment, Education and Training (within the framework of the VIONA research programme) and was supported by ESF.

representatives of organisations who are involved in the creation of apprenticeship positions and who support employers wanting to train apprentices, and who collaborate with the centres for part-time vocational training. Organisations such as sectoral training funds, sectoral bodies, the government (local/regional) and sectoral organisations in the domain of culture and health care were represented.

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Results

The analysis of the financial costs and benefits included the following elements: wage or allowance paid to the trainee, labour cost of the mentor of the trainee, extra training paid by the employer, material and tools, insurances, other costs, productivity of the trainee during the apprenticeship, subsidies from the government, sectoral training funds or other sectoral bodies. The study made clear that employers hiring apprentices from the lowest educational track do not focus on the direct financial costs (e.g. the allowance for the apprentice) and benefits (e.g. subsidies). Many of the respondents did not answer the questions in the questionnaire related to the financial aspects of training apprentices. Although this can be due to time constraints or lack of information when filling in the questionnaire, the in-depth interviews with employers confirmed that they do not focus in the first place on the costs directly related to the trainee. A general attitude is that an apprentice is very expensive in the first period of the training (because of the low productivity), that halfway the training cost equals productivity and that by the end of the training the productivity outweights the allowance. The biggest problem here is that many apprentices drop out: they never reach the stage where the financial costs equal the productivity, let alone the last stage. And although the government and sectoral training funds provide subsidies for employers training apprentices, only a small number of employers benefit. Mostly, the big enterprises (who probably need these subsidies the least) take up to money, not the smaller ones. That could indicate that the subsidies are not known enough and the application procedure not clear or complicated. What we also do not know is whether these subsidies create some kind of surplus value? Do they create more apprenticeship positions? Are they used to invest in the quality of training?

The time needed for training and supervising the apprentice is considered to be the highest cost. Usually texts refer to 'the' mentor of the trainee, as if no other people would be involved in the training. This research clearly shows that in a company on average 2.6 people are involved in the apprenticeship training, also in smaller companies. (But it is true that usually a distinction can be made between primary and secondary mentors.) Moreover, a considerable number of supervisors follow two or more apprentices at the same time, especially in bigger companies. The time investment is substantial: the primary mentor spends on average one third of the working hours on supervision and guidance. In the smallest enterprises (no more than 5 employees), the biggest amount of time is spent on the trainee by the primary mentor. This is in one respect consistent with another research finding, namely that in the smallest enterprises the trainees spend a bigger share of their time in the company on learning than in medium or big enterprises. For another this fact can be due to the smaller number of employees who can share the supervision and training activities. Other employees who are involved spend on average eight hours a week on supervision. Probably this explains why time for contact with the training centre is kept to a minimum. For half of the employers, contacts with the training centre take



up at the most four hours a year, which leaves little room for developing a training programme, discussing the progress of the trainee, planning remedial activities etc. . Employers also do not often invest time and money in the training of the employees supervising and guiding trainees.

A crucial question is whether the investments of the employers lead to the desired outcomes. In the quantitative part of the research, we studied the following outcomes:

- the apprentice obtains a certificate;
- the apprentice wants to be employed in the company after the completion of the training;
- the apprentice will make a good employee after completion of the training;
- the apprentice is offered a job in the company after completion of the training;
- the duration of the employment of apprentices who are engaged by the employer.

Positive training outcomes appear to be not at all guaranteed. A remarkable result is that employers already doubt that the apprentices will leave training qualified (which is justified by data on unqualified school leaving). The survey results also show that according to the employers only one out of two apprentices will make good employees and will be offered a job in the company. Three out of four employers who contribute to the apprenticeship system already long enough to have had trainees who completed their training, actually hired an apprentice. Half of these hired apprentices remained in the company for more than 36 months (which is not a bad result taking into account that many people change jobs, especially in the beginning of their career).

The qualitative research confirmed that the employers' main concerns are the apprentice's low levels of ability and learning potential, and the moderate return on investment, especially in terms of recruitment.

If investment is high and returns are not guaranteed, why would an employer hire apprentices from the lowest track of the vocational system? The analysis of the activities of the trainee (as an indicator for the employer's motives), made possible by the survey, showed that employers certainly provide learning opportunities (tasks have a certain degree of complexity, room for formal instruction and supervision, ...) so productivity is not the main, let alone the only concern. Employers themselves emphasize very much the motive of recruitment (both the survey and the qualitative research). In addition, social motives were mentioned: some employers see it as their social duty (mostly in the nonprofit sector and in government organisations), some want to help the children of acquaintances. In some firms it fits in with diversity policies, and the government wants to set a good example.

When employers decide to stop hiring apprentices, their decision is most often related to the low quality of the trainees in these apprenticeship systems and the fact that expected outcomes are not attained. In their opinion the training centres do not offer quality training, the competence levels of the trainees are too low or the trainees do not have the right attitudes or motivation. In many cases the employers just didn't know the investment would be so high and the return that low.

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Conclusion

All analyses point in the same direction: the investment in training and supervision is large, immediate returns are limited and long-term returns are very uncertain. This paper illustrates that in cases where apprentices come from the lowest vocational track, financial compensations are not the way to stimulate employers to hire apprentices. Policies promoting apprenticeships for vulnerable young people should focus on measures that enhance successful outcomes of the apprenticeship training: 1) supporting the employers in providing training of good quality in a powerful learning environment, 2) enhancing the quality of the training provided in the training centre and 3) better collaboration between employers (individual employers as well as associations of employers) and training centres. The study of the training outcomes has shown that there is a significant margin to increase the performance of apprenticeships.

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Quality of apprentices and training strategies of firms in Switzerland

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Summary: The aim of this paper is to analyse, with data from the 2nd cost-benefit-analysis for Switzerland, the consequences of varying academic levels of apprentices on the firms' training behaviour, dropout rates and productivity levels. We then simulate the changes in the cost-benefit-ratio by means of the estimated coefficients. The results show clear differences between the two sectors "basic commercial training" and "technical-industrial training", as one could expect from theoretical considerations.

Keywords: cost and benefit, apprenticeship training, quality of apprentices

Introduction

The question we are examining in this paper is, what consequences the academic quality of apprentices has on the strategies used by training firms regarding the amount of training provided per apprentice and what these strategies' impacts are on drop-out-rates, productivity levels and net costs. The data for this analysis come from the 2nd cost-benefit-analysis of apprenticeship training for Switzerland (Mühlemann et. al. 2007). It contains detailed information on firm characteristics and the cost and benefit elements of the firms' apprenticeship training. A unique feature is that detailed information on the academic background of the apprentices (such as school type before apprenticeship, school grades...) is available.



Theory

There are at least three possible strategies used by training establishments in dealing with apprentices with varying qualification levels:

- First, firms can treat all apprentices equally.
- Second, firms can give special encouragement to academically weaker trainees so as to enable them to catch up with the others. The literature refers to this as the 'compensation strategy' (Becker 1981).
- Lastly, firms can give particular encouragement to (academically) stronger apprentices because they can expect a greater return on their training investment. This strategy is referred to as the 'efficiency strategy' (Becker 1981).

It is also fair to assume that firms do not happen to select the best training strategy just by chance: For firms that expect a net benefit from training over the course of an apprenticeship, the compensation strategy is more advantageous, whereas firms that expect to experience net costs over the course of an apprenticeship will be more inclined to choose efficiency strategy. The latter firms are only then prepared to accept net costs from training if they are later likely to take the apprentices they have trained into their regular workforce. It is therefore easy to see why the incentive mainly lies in investing in the best trainees. This hypothesis is confirmed by the results of the study.

Data

The 2nd cost-benefit-analysis was conducted by the Centre for Research in Economics of Education at the University of Berne by order of the Federal Office for Professional Education and Technology OPET and was the successor of the first study with data from 2000 (Schweri et. al. 2003). The data was collected in 2004, the sample size for the main study is 2413 training firms and 1863 non-training firms. The results are representative for Switzerland and show that about two-thirds of training firms in Switzerland can expect net gains during the training period already. In the third of cases where apprenticeships resulted in net costs, short and medium term revenues cover the training expenses in the majority of cases:

- Short term revenues resulting from the avoidance of costs related to recruitment and induction training of new staff.
- Medium term revenues resulting from firm-specific training, which enables firms to retain qualified specialist staff that could not be found on the external labour market at the same wage levels.

For this paper we used a subsample of firms with on the one hand apprentices in the commercial field and on the other hand firms with apprentices in four-year apprenticeships in the technical-industrial sector. The sample sizes for the two groups are 527 and 290 firms, respectively.

Methodology

We have particularly four dependent variables of interest: 1) the amount of training hours invested by the firms, measured as the mean amount of training hours per year. 2) Productivity levels of apprentices. Here, the effects concerning training quality are estimated for each apprenticeship year separately. 3) Drop-out rates, measured as the mean drop-out-rate over the past few years. 4) Results at the final exam. We use a dichotomous specification in the sense that our variable equals 1 if the firms' apprentices have better

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results at the exam than the average of apprentices from other firms in the same profession, or equals 0 if they are below the mean.

As quantitative empirical methods, we used ordinary least squares-regressions (OLS) to estimate the first two points. For the drop-out-rates, we used tobit-regressions which take into account the fact that we have a concentration at zero¹⁸ and for the exam grades we used probit regressions for dichotomous dependent variables. All estimations are conducted separately for the two groups of interest and results are compared.

With the structure of our data, we are not able to estimate effects on an individual basis, but on firm level. Based on three observations, we assume a large homogeneity concerning the academic quality of all apprentices in one firm and thus a justification for our approach: 1) Item-non-response in the questions concerning the academic quality of apprentices was clearly lower than for other questions, meaning that firms were able to give indications about mean school grades of their apprentices. 2) Firms have remarkable costs of recruitment and try to occupy their open training positions with apprentices who fit a certain profile. 3) We found significant results in our estimation that correspond to expectations derived from theory.

By means of the OLS and probit coefficients and marginal effects, we estimated possible influences of these effects on the cost-benefit-ratio in a ceteris-paribus-simulation.

Results

In order to render the empirical findings comparable, two apprentice occupation groups were compared with one another: On the one hand, basic commercial training, which usually generates a net benefit for a training establishment by the end of an apprenticeship, and on the other, four-year training programmes in the technical-industrial sector, which usually result in net costs. It is possible to demonstrate that in basic commercial training, firms that take on academically weaker trainees invest significantly more training hours than comparable firms with academically stronger trainees. In technical-industrial occupations the exact opposite holds true. It is also possible to observe consistently that in basic commercial training the apprenticeship drop-out rates could be lowered significantly through higher training input, while this was not the case in the technical-industrial occupations as it is likely to be firms with above average trainees that invest more in training.

The picture is different in terms of the final apprenticeship exams. Here it is the additional training hours for particularly good trainees in the technical-industrial occupations that have a positive influence on the exam results, while the compensatory encouragement of weaker trainees in basic commercial training appeared to have no significant effect. The latter does not necessarily mean however that the trainees receiving additional attention would have achieved equally good results without that encouragement. Instead the findings would seem to indicate that without the additional attention they would not even have passed the exams.

Concerning the productivity levels, we can show that academically weaker trainees in commercial apprenticeships are able to raise their, a the beginning of the training period significantly lower, levels more than stronger trainees and that they don't face a lower level at the end of the apprenticeship anymore. By contrast, in the technical-industrial field, the difference in productivity levels between weaker and

¹⁸ About 50% of the firms in our sample have a drop-out-rate of zero.



stronger trainees increases from year to year, as one could expect from the fact that the amount of training provided differs significantly.

Conclusions

These results have implications for vocational training policy: If a firm is expected to have net gains from apprenticeship training, it is likely that weaker apprentices are promoted. In other words: If policy makers create conditions which guarantee a positive cost-benefitrelation, this is a contribution to the promotion of academically weaker apprentices. On the other side, the quality of the compulsory school is essential for the number of supplied apprenticeships in demanding professions in the industrial sector.

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Costs – benefits – quality: the specific profile of Austrian apprenticeship and its future potentials and drawbacks

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Summary: The paper makes an assessment of the costs and benefits, and further aspects of quality of the Austrian apprenticeship system based on available empirical data and studies, most of them performed by the author and his fellows, by firstly focusing on the position of apprenticeship within the overall Austrian education and training (ET) system, and secondly by comparing it to other systems.

The following aspects are considered: the apprenticeship market; the costs and benefits; the achievement; qualitative traits of training enterprises; selected performance data; projections about employment, supply and demand; reform options and policy measures.

The results show the prevailing profile of Austrian apprenticeship in a comparative perspective. Overall, the profile lies in between the German and the Swiss system, with a strong bias towards traditional sectors and practices. More recently a substantial debate about future reforms has started among the key stakeholders.

Introduction

This paper gives an overview of what we know on an empirical basis about the profile of Austrian apprenticeship, and indicates the main issues for further development, as recently discussed among the key stakeholders. As in other systems too, the Austrian apprenticeship system is a very complex building, which includes various regulatory systems and stakeholders in its governance. The main actors in the governance system are the social partners. The main actors of course are the training enterprises and the apprentices themselves, which are also dependent on their parents because they are mainly starting training at an age of sixteen.¹⁹ Apprenticeship is one part of the initial education and training system, which comprises also an about equally strong part of full-time vocational school and colleges at the upper secondary level, and two layers of higher education (Universities and a new sector of Fachhochschule, which is very different in its construction to the German and to the Swiss Fachhochschule).

¹⁹ In Germany 79% of apprentices are of full age (above 18 years), see Berufsbildungsbericht 2007 <u>http://www.bmbf.de/de/10891.php</u> "Während 1970 nur etwa jeder Fünfte (22 %) 18 Jahre und älter war, sind gegenwärtig mehr als drei von vier Auszubildenden (79%) bereits volljährig."; the average age of apprentices in Germany has risen from 16,6 in 1970 to 19,5 in 2005, see <u>http://www.bmbf.de/ media/bbb pdf/bbb2007 ueb21.pdf</u> 2007-12-23.



Austrian apprenticeship contains a quite dense regulatory system, which covers the various aspects in terms of minimal standards. That means that there are many regulations in place about different aspects, however, the regulations are not very strong in themselves. Thus the actors, and particularly the enterprises have wide room for manoeuvre, particularly concerning their activities in the core business of apprenticeship, the learning and training process, and also in the recruitment of their apprentices.

Because of the strong involvement of the social partners in the apprenticeship system, conflicting interests between the both sides have time and again led to guite contradictory policy strategies. However, more recently a new era seems to have started, with the employers' organisation proposing perspectives towards a guite fundamental change of the system. One element in this development is a concept of modularisation, which might change the basic structures guite fundamentally. During the period of conflicting positions the weak discussion was accompanied by a low level of research about the problems in Austrian apprenticeship.

Methodology

The paper summarizes available research due to a conventional scheme of an economic assessment of the performance of an education and training system, using the categories of input - process - output - outcome, and allocating the available empirical accounts to those categories. Using this scheme, we can also see, about which aspects we have some empirical information, and about which aspects we don't have information (see Table 1 for a summary).

Figure 1:	Categories for evaluation, and available empirical information

Categories	Basic criteria	Available data	Not available / gaps
Input	- Recruitment	- Apprenticeship market, quantity	- Quality of applicants
	- Infrastructure	- Some information about training enterprises, trainers	- Quality of infrastructure
	- Financing	 Some information about investment by enterprises, information about part-time schools 	- Information not up to date
Process	- Delivery traits	- Some information about training time, kinds of trainers, working and learning	- Information not up to date
Output	- Completers, drop-outs	- Some information about drop- outs	- Partly contradicting accounts
Outcome	- Benefits	- Some aggregate information about returns	

Results

Stylised results from empirical data

The empirical data in total show a picture which can be sketched as follows: The apprenticeship system has a specific position within the overall ETsystem, situated at the lowest level of a tracked and layered system, comprising roughly three levels of achievement at the upper secondary cycle. The level of competences is widely distributed among beginners of apprenticeship according

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to the PISA-results, however, a considerable proportion of apprentices (measured by attendants in the compulsory part-time school) show the lowest levels (in PISA 2000 reading below level 2: about 32% of male and 27% of female apprentices, as compared to about 15% of lower level of VET full-time school; Schneeberger & Petanovitsch 2004). Thus, to a considerable degree, the apprenticeship has been a kind of "gathering place" for young people who have failed in the other parts of schooling; similarly, the part-time vocational school for apprentices is a quite separate institution from other VET, and considered low profile in comparison to the full-time VET schools. The individual economic returns to the different types of education and training show the same layer as the PISA results, the workers holding an apprenticeship degree being at the lowest position compared to workers without a formal gualification (returns in terms of net hourly wages are 12-14% above the reference group, as compared to about 30% of completers of lower level VET schools or about 40-45% with upper level academic or VET schools, and 65-70% with graduates from tertiary education (Steiner, Schuster & Vogtenhuber 2007).

- Since more than a decade there are problems to provide enough places for young people seeking an apprenticeship. The apprenticeship market is driven mainly by the supply side, and particularly by demographic by changes – on the demand side there is a stagnation of the training places, driven to some extent by the economic cycle; the number of training enterprises also is on decline (about 15-20% since 1990; see Schneeberger & Nowak 2007). Since the second half of the 1990s several measures have been taken, to subsidize training enterprises for taking up apprentices, and for providing alternative training options for young people who cannot find a training enterprise. There were also measures to make training easier (e.g., by lowering some criteria for trainers) and cheaper (e.g., by reducing social security costs). The transition process is comparatively favourable in Austria, youth unemployment being at a low level.²⁰ However, problems are still increasing , and a high proportion of young people is in various subsidised measures.

- The profile of Austrian apprenticeship is different from the German and Swiss systems, by starting at early age (74% of apprentices are of age 15-16, only 14% are above 18 years old, as compared to 79% in Germany). The proportion of training enterprises differs from 11% in Austria, through 17% in Switzerland, to 24% in Germany.²¹ The size of training enterprises might be quite similar to Germany, except probably with the very big enterprises. The distributions of the size of training enterprises, and of apprentices to different enterprise sizes and to different group sizes of apprentices are extremely uneven. In Austria half of apprentices are trained alone, and further 20% are trained with only one colleague – only with 30% of apprentices we can expect a

²¹ See <u>http://www.ams-forschungsnetzwerk.at/downloadpub/Lehrlingsausbildung_Angebot_und_Nachfrage.pdf</u> 2007-12-23;

²⁰ See: <u>http://ec.europa.eu/education/policies/2010/progressreport_en.html</u> 2007-12-22 and http://ec.europa.eu/employment_social/employment_analysis/employ_2007_en.htm 2007-12-22

 $[\]underline{http://www.vwi.unibe.ch/unibe/wiso/vwi/content/e2071/e2251/e3044/e3045/e3258/panorama0104_ger.pdf\ 2007-12-23;$

<u>http://www.bmbf.de/ media/bbb pdf/bbb2007 ueb52.pdf</u> 2007-12-23; the comparability of those figures is not quite clear, however, they indicate quite different practices.



group of 3 or more, which would indicate a continuous recruitment and training process. In 15% of cases apprentices are trained in groups of five or more, where we can expect some economy of scale, and some continuous experience with the full training process. Training in bigger groups of apprentices with 10 or more colleagues is experienced only by 5% of Austrian apprentices, clearly a small minority. This distribution is reflected by indications for the main practice, which can be inferred from the availability of a personal and material infrastructure for apprenticeship training: In Austria 60% of training enterprises provided mere on-the-job-training without any specific investment in the training process. In those cases, the trainers do not even report any reduction of their productive capacity for training. Among the remaining 40% of enterprises, which invest in some infrastructure, about 30% report some reduction of the productive capacity of trainers through their supervision activities, and the remaining 10% of enterprises invest in some infrastructure, i.e. full-time instructors or some material investments, as workshops and the like. This distribution corresponds to the distribution of apprentices per enterprise. (however, being much more dispersed to small enterprises with only one or two apprentices, and including much less infrastructure, and much more direct work-based learning.

Nevertheless, comparisons of costs and benefits of the different systems show considerable costs of apprenticeship training (depending on the concepts of analysis, particularly the assessment of the productive contribution of apprentices). According to a previous study, the net costs in Austria are below Germany, however, there are on average small net costs, whereas in Switzerland there are on average net benefits. The distribution of net costs and net benefits differs to Switzerland, as the proportion of enterprises with net benefits has been about 33-40% (whereas this proportion is about two thirds in Switzerland). The proportion of successful examination to applicants is slightly below the German one (84% vs. 86%, and seems to have slightly decreased since 1990. The retention measured by successful examinations three years past beginning has markedly increased and has risen above 100% in the mid 1980s, indicating that increasingly flexible applications for the final examination are taking place. There are no comparable measurements of Drop-outs available. In Germany an Indicator is measured by relating the Drop-outs to the new contracts, that rate is about 20%. In Austria a rate of those apprentices, who have not finished their apprenticeship to the total number of guits of contracts is calculated, which is about 35%. Lietz (2001) has calculated dropout-rates between 7% and 8% of beginners, which is low, as compared to the upper secondary schools.

- The demand for apprenticeships has been increasingly concentrated on specific economic trades representing traditional sectors. High rates of training enterprises are in construction (32%), manufacturing (28%), retailing and mixed services (15%), tourism (12%). Detailed studies in the 1990s have shown that the weight of apprenticeship has increased in the traditional areas of apprenticeship, and decreased in the overall economy. Actual forecasts expect a rather stable development, with a slight decease of active enterprises in construction and manufacturing, and a slight increase in services.

- The Austrian policy has been firstly to develop new trades, secondly to subsidize apprenticeships, and thirdly to lower the demands on both sides,

young people (by creating less demanding profiles) and enterprises (by reducing some criteria and by releasing social security payments. Very little has been made at the level of the basic pedagogic profile of training provision. Overall a high rate of subsidies has been created, with an average stock of about 5.000 training places in a safety net, and about 13% of apprenticeships subsidised.

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Tentative conclusions about current problems and future challenges

The particular Austrian system, comprising three layers of VET has lead to a development, where the economic innovation has been taken up rather by the upper level VET colleges, and there has been little pressure for innovation in the apprenticeship system. In terms of the distribution of costs and benefits this process may lead to a long term shift of costs from the private to the public sector: Apprenticeship is financed partly by the firms and apprentices (net-costs and training-wage), whereas full-time schooling is financed by the public budget.

In the course of this development the potential strengths of apprenticeship cannot be fully exploited, so major changes in policy seem necessary to bring about the future potential of apprenticeship: First, the hierarchy of the different tracks could be changed by providing apprenticeship at every layer of the system, and moreover, the hierarchy should in itself been compressed toward a higher average level of competence; second the quality and performance of apprenticeship training at the enterprise level could be monitored, developed, and systematically supported; third the sector of full-time VET schooling could be more organically integrated, taking the compulsory part-time school for apprenticeship more closely on board.

An alternative solution could be, to increase the selectivity of the competing tracks, in order to provide a broader basis of applicants for apprenticeship. There are some policy proposals in the direction of an even deeper split of the Austrian education and training system towards a general academic part of the system, and a VET oriented part, each of which would build on one of the tracks of lower secondary education. The two systems should be made equal in demands, and cooperation and networking among the different types of school should be strongly increased, due to this proposal from a reform oriented group within the conservative party. This proposal is not supported, however, by the representatives of the employers at the moment.

Some more specific issues, concerning the future development of Austrian apprenticeship are the following:

- The vast area of training with only one apprentice should be emphasised more thoroughly, e.g., as we know from studies about work based learning, it presupposes qualifications of trainers. Good qualifications of the trainers should be a main ingredient of quality in those cases, and occasions of contacts among apprentices, those opportunities should be expanded e.g., by networks of enterprises, or by other forms of additional collaborative learning.

- The current debate is very much influenced by ideas of a reduction of the employment protection of apprentices. Social partners have already agreed, to make it possible to dismiss apprentices at the end of year of training, however, a compulsory mediation procedure has to be followed during this process.

- According to the current results about costs and benefits of apprenticeship in Switzerland, the basic route of thinking about the involved interests might be put under scrutiny. In Austria the debate is very much influenced by ideas, first of net



costs and increase of quality by increasing costs, similar to the school system, and second of a kind of social or moral commitment in order to provide apprenticeship training. Discussing quality of training is therefore a difficult issue (which nevertheless has been taken up in more recent policy proposals). Economic interests are basically expected to work against quality in apprenticeship. However, the Swiss analyses about costs and benefits indicate a very different path of thinking: First, the results indicate that net benefits and quality must not be a contradiction. Second, if it is right, that the bottleneck for providing training are not the costs, but missing benefits, and that benefits arise often from the duration of training because of the higher productivity in the later years, then ways should be found to increase benefits. The current debates around the modularisation of apprenticeships to three kinds of modules (...) is rather bound to ideas of occasions of shortening the overall period due to the transition between modules. This way might threaten the commitment of trainees, as well the rising of benefits on the side of enterprises.

In any case, a strong shift in attention to quality issues, particularly at the employers' side, seems to be a main necessity for the viability and sustainability of apprenticeship in Austria.

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Summary: The QEK (quality, returns, costs) self-evaluation tool allows companies to assess the cost-effectiveness as well as the quality of apprenticeships. Analysing the results of more than 100 companies taking part, we found that on average, apprenticeships produce net returns. Furthermore, there is a positive correlation between quality and cost-effectiveness. The higher the quality, the better the cost-effectiveness.

Keywords: Quality, Cost, Benefit

Introduction

Not only, but especially in countries where VET is carried out in an alternating system between school and enterprises, the issue of costs and benefits of carrying out apprenticeships is important to know for all stakeholders concerned. Different research has already been undertaken at the Bundesinstitut für Berufsbildung (Germany) as well as Bern University (Switzerland), developing methods to collect data on cost and monetary returns of workplace-based apprenticeship and using them in different national surveys. On this basis, the project "Innovative Berufsbildung 2010" (Innovative Apprenticeship 2010) in Bremen developed instruments for companies to self-evaluate the cost-effectiveness and quality of in-company phases of VET. The QEK-Tool (*Qualität, Erträge, Kosten – quality, returns, costs*) allows the companies to assess their costs and returns as well as the quality of the training they provide. It was tested and implemented in a representative regional study in the Bremen region. Currently, more than a hundred companies make use of the self-evaluation tool.

Methodology

QEK is first of all an instrument of self-evaluation. Companies use it out of their own interest and the tool has been designed in order to fulfil their needs.

Calculating costs of VET, we used established criteria. Major cost factors for apprenticeships are apprentices' and trainers' wages. Furthermore, materials

To assess the benefits, we expanded and modified existing methods. Benefits are measured according to productivity during the times the apprentices are actually incompany and carry out work tasks. This productivity itself is measured as a percentage of a skilled workers' productivity.



Apprenticeship quality is evaluated on the basis of six indicators, derived from vocational pedagogy:

Learning based on experiences, Professional level of vocational education, Independent learning and working, Work process related learning, Professional competence, and Occupational commitment.

The first four indicators represent characteristics of the training process itself. The latter two are relate to effects the process has on the apprentices, his or her commitment to the occupation as well as the professional competence, that is seen as an outcome of the training process as a whole.

In the instruments, graphs visualise the results for each company. The companies are able to easily identify the major indicators on costs, returns and quality of the apprenticeships they carry out. Furthermore, the figures allow a etailed comparison with other companies of the same economical branch or occupation.

A complementary survey was carried out on enterprises which produced selfevaluation results that represent good or best practice. Using interviews, we identified factors specific to the companies in order to ascertain which specific characteristics enable the companies to produce these results.

Results

Analysing the results of the self-evaluation instrument for the Bremen region produced evidence that in our sample, quite contrary to previous studies, the companies in average do not have net losses because of carrying through apprenticeships. in fact, some 55% of the companies that took part in the self-evaluation realised net returns. The companies' actual values diverge quite widely, some companies investing or gaining more than 10.000€ per apprentice and year (see figure 1).





Figure 1: Net Costs and Returns per apprentice per year



Numerous possible factors have been analysed to explain this result. As in previous studies (e.g. Schwieri et al. 2003, Beicht, Herget & Walden 2004), we, too found out only a small effect of the companies' economic sector. In general, companies from the trade sector are doing better than commerce, industry and civil service being sectors of net losses. According to size, there is another small effect: apprenticeships at larger enterprise tend to be more cost-intensive and less productive than the apprenticeships caried out by smaller companies. A major effect, though, is determined by the occupation. For this effect, one factor is the wage of a skilled worker – the higher this wage, the higher the productivity of the apprentice as this productivity is measured as a percentage of a skilled worker's productivity. Still, it looks like another factor is accounting for the occuption-specific effect as well. Different occupations are traditionally learned in specific ways. Thus, the possibilities for carrying out an apprenticeship in a way that the apprentices learn through work and learning tasks and are embedded in the companie's productive activities differ accordingly.

Still, our evidence suggests that another important factor influencing costs and benefits is the company itself and thet way the apprenticeship is organised at company level. In the same occupation, there are quite considerable differences between the companies. Thus, companies themselves are able to influence to a certain degree, to what extent carrying out apprenticeships is worthwhile economically.

In terms of apprenticeship quality, the analysis of the self-evaluation results shows that major differences between the companies occur first of all in the first two years of apprenticeship. An 'average' apprenticeship reaches acceptable quality standards as to professional competence and independent learning and working in the third year. But precisely in high-quality apprenticeships, the apprentices are carrying out demanding work and learning tasks that support the development of autonomy already at the beginning of the apprenticeship. The result is a relatively fast growth of



competence, going together with higher occupational commitment as well as faster achieving higher levels of professional competence. Additional specialised external courses during the apprenticeship do not have any measurable positive effect on the quality of apprenticeships. Nor does a higher amount of time dedicated to in-house instruction, if these measures constrain the amount of time used for learning in productive as well as qualifying work processes. Here, a good portion of the copanies taking part in the self-evaluation still show potential for development.

In terms of relation between quality and cost-effectiveness of apprenticeships, one result of our analysis may be especially intersting: we found a direct connection between apprenticeship quality and cost-effectiveness. The higher the apprenticeship quality, the higher the cost-effectiveness.

Figure 2: Costs/Returns and Quality of Apprenticeships



Zusammenhang von Kosten/Nutzen und Qualität

Lineare Regression

Already an older survey in the German autocar sector showed that raising the prenticeship quality did not have any negative influences on apprenticeship cost the short day to the sector showed that raising the sector showed that raise sector showed that raise sector showed the sector showed that raise sector showed that raise sector showed the sector sector

apprenticeship quality did not have any negative influences on apprenticeship costs (Wirthschaftsgesellschaft des Kraftfahrzeuggewerbes 1998). The QEK results do not only support this evidence, they even suggest a positive correlation between quality and cost-effectiveness. High-quality apprenticeship does not only benefit the apprentice, it is even worthwhile for the company in purely economic terms. And this effect does not only result from the relation between cost-effectiveness and the quality criterion 'work process related learning' (which relies on productive work and learning). Rather, correltaions between competence development, occupational commitment and the ability to carry out work tasks independently combine to a higher degree of performance capacity. If during the course of the apprenticeship, this capacity is used for training by work and learning tasks, good results arise for costs and returns as well as for quality.



Figure 2 shows that many companies still have to catch up regarding the development of quality as well as cost-effectiveness. Factors that play a major role here and can be influenced by the companies are e.g. the amount of specific internal and external training courses, the amount of time to prepare the examinations, and the amount of time for these examinations themelves.

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Certifying Professional Competence within Workplace Learning: Preliminary Suggestions of the Project MOVE PRO EUROPE at EADS in Germany

mAn

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Summary: The project MOVE PRO EUROPE in cooperation between EADS Deutschland GmbH and the Institut Technik und Bildung at the University of Bremen (2004-2008) analyses industrial working processes in order to tap their full learn potential for the design of a workplace based apprenticeship. Besides the analysis of enabling factors, we also try to grasp the outcomes of workplace learning and make them transparent and 'readable' for further use in learn or work contexts. MOVE PRO EUROPE focuses on the vocational domain of aircraft mechanics and aircraft electronics. In our approach the competences of an individual learner are not assessed according to different competence level descriptions, but by means of describing the individual work performance of the learner. Trainers and skilled workers should certify their confidence in the work of the apprentices in a qualitative, performance-orientated scheme.

Keywords: quality approach, competence certification, apprenticeship

Introduction

In various aspects transparency and certification of learning outcomes is of relevance for the training enterprise. First, the enterprise is obliged to document that the apprenticeship program is in accordance with the legal regulations of the German apprenticeship system (though this can be done by reference to input factors of training). Second, for an efficient, i.e. individualized training program everybody in charge of an apprentice has to have a clear view of the apprentice's current level of knowledge, skills and competences to be able to adapt the next training step to this individual level. Third, enhanced national and international learn and work mobility increases the need for valid certification of individual learning outcomes. Of special interest for employers are learning outcomes which are not covered by official certificates but enhance the employability of the employee. Last but not least, getting an immediate feedback of one's progress in terms of competence development is a great source of motivation for the individual learner.

Model

This leads to the question of how to operationalize professional competence. The typical professional tasks (TPT) identified for a specific occupational field are considered to be a valid point of reference for describing and assessing vocational learning outcomes. These tasks represent the skilled labour in the respective occupational field and are described in terms of complete jobs including planning and



controlling aspects. TPTs are performed at workplaces within concrete work processes, which are organized in consecutive work cycles. Within the work cycles different actions (which may recur within the complete production process) can be distinguished. Again, these actions are describable in terms of knowledge and skills. The possible levels of operationalization can be illustrated as in figure 1.

The ellipses used to symbolise parts or facets of professional competence in figure 1 are overlapping indicating that they are not isolated. Furthermore they cannot be interpreted as single parts which in sum form a whole. The mastery of a certain amount of facets on a lower level can be read as a necessary but not sufficient precondition for a higher level.



Figure 1: Levels of operationalization of professional competence

Our Approach

First we determined typical professional tasks (TPT) for the two occupational profiles under examination (aircraft mechanics and aircraft electronics technician). For details of our method (expert workers workshops) see Kleiner 2004. The workshops took place in five German EADS plants (Augsburg, Bremen, Hamburg, Manching, Nordenham) and three additional European Airbus plants (Broughton, Getafe, Toulouse). We identified 11 TPT (see table 1) of aircraft mechanics (12 of aircraft electronics technicians) which are performed at least in three of the participating plants.

As can be seen in figure 2, the descriptions of the TPT's are rather general and are not easily to operationalize. So the next step was to analyse the real work processes at workplaces in all participating plants following the guidelines of the learn station analysis method (LSA, Ledl & Saniter 2006). Primary goal of this step was to clarify the real work processes that represent a TPT and find suitable learn stations

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for apprentices. After analysing dozens of workplaces it became clear that work processes and work cycles (see figure 1) are heavily determined by the product and the production method respectively. Therefore a description of competences at this level of complexity is not feasible for an instrument to describe and certify competences in a transparent way. Even expert workers from another plant with different products and production methods would not be able to comprehend the knowledge skills and competences behind the description. But we found a set of very clear work steps (complete actions as in fig.1) for each TPT which are repeated in almost all workplaces related to the same TPT. Depending on the TPT the amount of these steps varies from 5 to 15. Now we were able to develop an instrument that allows certifying professional competences.

- 1. Production of metallic components for aircraft or ground support equipment
- 2. Production of components of plastics or composite materials for aircraft or ground support equipment
- 3. Operating and monitoring of automated systems in the aircraft production
- 4. Joining and disjoining of structural components and aircraft airframes
- 5. Assembly and disassembly of equipment and systems in/at the aircraft airframe
- 6. Functional checks and tuning at the aircraft
- 7. Maintenance and inspection of the aircraft
- 8. Analysis and reconditioning of malfunctions at system components
- 9. Analysis and reconditioning of damage on structure components
- 10. Reconditioning of accessory equipment
- 11. Independent quality inspections

Table 1:TPT's for the profession Aircraft Mechanic

TPT 1. Production of metallic components for aircraft or ground support equipment Aircraft mechanics produce components for the structure of the aircraft (e.g.: stringers, cuts, skin plates) including the equipment (e.g.: Hydraulic lines) according to the valid construction specifications, standards and rules. In addition, they produce components for ground support equipment. Input materials for the production of varying components are plates, steel strips or semi finished products. After careful planning, processing takes place predominantly by means of cutting or (re-)forming procedures (e.g., sawing, filing, cutting of interior or external thread drills). Manual and mechanical manufacturing procedures are used. Manual procedures rely not only on engineering drawings but also on technical devices such as jigs. The processing of large plates requires a heat treatment of the plates in order to improve their physical forming characteristics and therefore the forming results. Heat treatments additionally are used for changing material properties. Since for aircraft construction weight is a critical factor the metal gauge is optimized for a lot of components (e. g. by chemical abrasion of material or surface milling). The marking of components as well as the quality inspection and the production documentation are integral parts of this typical professional task. Quality inspections take place during the production process (e.g. search for cracks after forming). Damaged parts are repaired or replaced – depending upon the degrees of damage. Recurring faults, that are not yet documented, are reported to the responsible design department. The



task ends with the further transport or the preparation of the further transport of the finished components.

Figure 2: Description of TPT 1

The Instrument

An example for our instrument can be seen in table 2. In the first column short descriptions of the work steps which are part of the TPT are listed. Usually these descriptions should be understandable for an expert (trainer, worker). Is there a need to have a closer look at the underlying knowledge, skills or key competences the hidden rows can be displayed. In table 2 this is visualised for the step "Metal forming by means of ACB/ABB press". Though the wording of the steps sounds rather skill-orientated, these underlying rows show that we do not have simple operations but complete and complex actions in mind including cognitive and key competence aspects.

The essential point of these sheets is the mode of assessment: expert workers are asked to evaluate the performance of the apprentices in terms of the guality of their participation in the work process (compare columns 2-5 in table 2). The expert confirms that a trainee has only observed the respective work step, has worked under (close) instruction, has worked under surveillance or has worked independently. This mode of assessment guarantees the instrument's competence orientation: Confirming that a trainee has worked independently means that he or she has reaches a certain level of expertise in all sub aspects of the respective work step. No expert would rate a candidate as "independent" when he or she is drilling very well but does not know what to do before or afterwards – and vice versa. The last 3 columns indicate the department where the apprentice has worked, the assessment date and the signature of the expert. For each step several rows are provided to make clear that the step is not only of relevance in a chosen department - the trainee will perform most of the steps at least twice during his apprenticeship. This transparent description of what was assessed, where, when and by whom is one of the major advantages of this instrument: Coordinators of later departments see at once, what and where the trainee already worked and how well he performed.


Certifying competences of TPT 1:

Production of metallic components for aircraft or ground support equipment

	Assessment						
Work Step	Has observed	Has worked under instruction	Has worked under surveillanc e	Has worked indepen- dently	Dep.	Date	Signat ure
							-
Drilling and milling with NC-machines					-		
Deburring workpieces							
			Γ	[]	_		
					-		
Canting workpieces					-		
						1	
Tempering							
Workpieces							
						_	J
Metal forming my							
meands of ACB / ABB							
press							
Using different moulds							
Knowledge of different characteristics of the presses (ABB / ACB)					-		



			_	
		_	F	
		-		

Table 2: Competency sheet for TPT 1

As mentioned above (overlapping ellipses in figure 1) we do not see these work steps as single parts which in sum form a whole. So the sheet in table 2 might not be used as a checklist with all "independent" boxes filled the trainee masters the TPT. Rather, our proposal to certify the competence for a TPT is to perform a kind of evaluation task (Bremer 2005). When a candidate reaches at most of the steps of a chosen TPT at least the level "worked under surveillance", the trainer should give him a complex, holistic work order that deals with most of the steps of the TPT in context. Regarding the TPT 1 this could mean that the trainee is in charge of the complete production process of a workpiece from the first milling to the final quality control. The whole process should be under surveillance of the trainer and an expert-worker. Together they decide if the apprentice passed the evaluation task – if so, he gets a "TPT-certificate". These certificates are useful not only during the training period, but also when the young worker has finished his apprenticeship and starts to work: When he stays at the same plant, his certificates might help to find an appropriate place for

him. When he applies for a job with another company, the certificate might be a surplus: It proves not only that he is allowed to work in a profession, but also for what exactly he is skilled for.

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Annex



International Network on Innovative Apprenticeship

Situated Competence Development through Innovative Apprenticeships

The Role Of Different Stakeholders

01/02 February 2008 in Vienna

Location: Fachhochschule des bfi Wien Wohlmutstraße 22 1020 Wien

http://www.fh-vie.ac.at/

Co-Organisers

Austrian Institute for Research on Vocational Training, ÖIBF Bertelsmann Foundation, Gütersloh VETNET, European Association of Educational Research (EERA)

Conference Programme

Programme committee

Prof. Felix Rauner, University of Bremen, Institute Technology and Education
Peter Schlögl, Austrian Institute for Research on Vocational Training
Prof. Erica Smith, Charles Sturt University, Wagga Wagga
Dr. Philipp Grollmann, University of Bremen, Institute Technology and Education
Dr. Ludger Deitmer, University of Bremen, Institute Technology and Education
Prof. Lorna Unwin, University of London, Institute of Education



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Helmut Zelloth, ETF - European Training Foundation, Agency of the European Union, Torino, Italy

Conference Programme

Arrival at Thursday Evening

Friday, February 1st, Morning

08.30 Registration at the reception of the Fachhochschule des bfi, Wien

Room: E 01 (ground floor)

09.30	Peter Schlögl	Welcome
09.45	Clemens Wieland	Apprenticeship: Activities of the Bertelsmann Foundation
10.00-10.30	Felix Rauner	Introduction
10.30 -11.15	Erica Smith	The 'Crowded Market': Agencies Dealing with Apprenticeship in Australia
11.00 - 11.45		Coffee Break and Exhibition
11.45 - 12. 30	Thomas Deissinger	Apprenticeship Systems in the German Speaking Countries: Different Logics and Policies with Respect to Full-Time VET and Higher Education
12.30 - 12.45	Philipp Grollmann	Introduction into the Workshops
13.00 - 14.00		Lunch

Lunch

There will be the opportunity to have lunch in the restaurant "Apartment02". The restaurant is located in the immediate neighbourhood of the conference location (across the street).

The price of the lunch buffet will be 6,80 € per Person.

http://www.apartment02.at/



Friday, February 1st, Afternoon.

Paper sessions

There will be a coffee break during the sessions

Coffee breaks will take place in the restaurant Apartment02.

Friday, February 1st, Afternoon

Room: 101 (first floor)

Workshop I

14.00 - 17.30 Chair: Erica Smith Interventions by Government and other Stakeholders in Apprenticeships

Apprenticeship is important to countries' skill formation and also to sound career development among young people. Therefore governments at many levels, from national to local, undertake many interventions to maintain and improve apprenticeships. Other stakeholders such as employer associations, trade unions and industry advisory bodies also have roles to play. Papers in this topic will describe, discuss and critique the roles taken by governments and other stakeholders.

Bob Lerman	The Apprenticeship System in the United States: The Evolving Roles of States, Firms, and Industries
Felix Rauner, Wolfgang Wittig Ludger Deitmer	Plural Governance in Dual Systems in Selected European Countries
Graham Attwell, Philipp Grollmann, Eileen Lübcke	Towards an Open Framework for Continuing Professional Development for Trainers in Europe
Trine Deichman-Sørensen	"Flexi-VET" in the Making. Norwegian VET System Reform Adaptations, Including Curricular Remodelling Objectives, to Aims, Measures and Instruments Rooted in the Copenhagen Process
Philipp Gonon	Innovation and the Swiss Vocational Education and Training System
Magdolna Benke	Towards Innovative Apprenticeship? The Evaluation of the Development of Integrated Regional Vocational Education and Training Centres in Hungary

Conference Agenda: Designing Conditions for Situated Competence Development through Innovative Apprenticeships, 01/02 February 2008

Room: E 06 (ground floor)		Workshop II
14.00 - 17.00	Chair: Peter Schlögl	Designing Optimal Conditions for the Development of Competence Through on.the-Job Learning
While most app	renticeshins involve	some off-the-iob training the majority of

While most apprenticeships involve some off-the-job training, the majority of the learning time is spent on-the-job. Employers may create optimal conditions by attention to appropriate organisation of work processes as well as by attention to the training process itself. Important levers for the design of such quality learning processes are also educational policies, the educational system, its graduates and their learning histories. Papers in this topic will report on research and/or theory about optimal conditions for on-the-job learning.

Eduard A. Stoeger	Promoting Competence Development of Apprentices Through Combining Learning at the Workplace and in the Training Workshop
Jeroen Onstenk	Coaching and Collaborative Learning in New Apprenticeships
Natasha Kersh, Karen Evans	Facilitating Learners' Motivation and Competence Development in the Workplace: the UK Context.
Graham Atwell, Raymond Elferink	Developing Tools to Support Work Based Competence Development
Felix Rauner, Lars Heinemann Rainer Bischoff Dorothea Piening	Occupational Commitment and Vocational Identity



Room: E 08 (ground floor)

Workshop III

14.00 - 17.00 Chair: Lorna Unwin Costs, Benefits, and Outcomes of Apprenticeships

The literature on apprenticeship contains many arguments about the costs and benefits of apprenticeships to employers. Depending on the type of analysis used, it can be argued that employers bear a net cost when employing apprentices, or alternatively that employers gain considerable benefits. These arguments are of particular importance in countries where unemployment is high and employers need to be persuaded to employ apprentices. Training providers also need to consider ways to maintain the quality of off-the-job training while keeping costs within reasonable bounds. Papers in this section add to these debates, especially through the reporting of empirical research and through the presentation of instruments, methods and tools measuring costs, benefits and outcomes.

Lorenz Lassnigg	Costs - Benefits - Quality: the Specific Profile of Austrian Apprenticeship and its Future Potentials and Drawbacks
Katleen De Rick	Analysis of Costs and Benefits of Apprencticeship in Belgium
Marc Fuhrer, Stefan C. Wolter, Samuel Mühlemann	Quality of Apprentices and Training Strategies of Firms
Elmo D´Angelis, Ludger Deitmer	Quality and Impact of New Apprenticeship Approaches in Italy

February 1st, evening: guided city tour, 18.15

The meeting point for the city tour is the **Bar** of the **Hotel Post**, Fleischmarkt 24, 1010 Vienna.

social event, 20.30

12 Apostel Keller Sonnenfelsgasse 1010 Wien

http://www.zwoelf-apostelkeller.at/

Saturday, February 2nd, Morning

Room: E 01 (g	round floor)
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09.30	Ludger Deitmer	Introduction into the day
09.45 - 10.15	Helmut Zelloth	Apprenticeship and Enterprise-based Learning in the Mediterranean (MEDA) Region (Comparative Analysis + Regional Network of policy makers)

Papers sessions continued:

Room: 101 (first floor)			Workshop I
10.20 - 11.45	Chair: Erica Smit	h	Interventions by Government and Other Stakeholders in Apprenticeships
Sandra D'Agostin	0	Apprentice Future Cha	eship in Italy: Distinct Features and allenges
Barry Nyhan		Reflections Educationa Ireland's A	s on the Socio-Economic and al Developments Giving Rise to Apprenticeship Programme
Benedicte Gendro Pascal Varnier, Cecile Gendre, Jean-Claude Flout	on, ard	Competen Learning: t Baccalauré Familiales	ce Development through Workplace the Case of the French Vocational eat from the Lycée and the Maisons Rurales



Room: E 06 (ground floor)			Workshop II
10.20 - 11.45	Chair: Peter Schl	ögl	Designing Optimal Conditions for the Development of Competence Through on the Job Learning
Philipp Grollmanı Pekka Kämäräine	1, n	Comparing Implication	g Cases of Trainers' Practice - ns for Professional Development
Regina H. Mulder Gerhard Messman	, nn	Relations I Learning E Developm	Between Characteristics of Innovative Environments and Competence ent in Secondary Vocational Education
Linda Clarke, Michaela Brockma	ann	How to Pro a Vanishin Changing Based VET	ovide Meaningful Work Experience with ng Employer?: The Implications of the Employment Relationship for Work-

Room: E 08 (ground floor)		Workshop III
10.20 - 11.45	Chair: Lorna Unwin	Costs, Benefits, and Outcomes of apprenticeships

Lars Heinemann, Felix Rauner Rainer Bischoff Dorothea Piening	Costs, Benefits and Quality of Apprenticeships - a Regional Case Study
Barbara Burger, Andreas Saniter	Certifying Professional Competence within Workplace Learning Preliminary Suggestions of the Project MOVE PRO EUROPE at EADS in Germany
Ludger Deitmer, Ramli Rashidi	Investigating the Quality of Collaboration in Countries with little History of Cooperation under Industrial and School Partners in VET - the Case of China and Malaysia

Room: E 01 (ground floor)

11.45 12.00		Coffee Break
12.00-13.00	Chairs of the workshops	Apprenticeship research - current state and needs
13.00		Lunch

Saturday, February 2nd, Afternoon

14.00	INAP Members	Open Network meeting: outlook on further activities
16.00		End