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Apprenticeship in a Globalised World

Premises, Promises and Pitfalls



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LIT

Dr. Blade Nzimande

Minister of Higher Education and Training

Declaration of: 'The year of the Artisan', 4 Feb 2013
"It's cool to be an Artisan"



We are here today with the Deputy Minister of Higher Education and Training, Mr Mduduzi Manana, to officially declare 2013 as "The Year of the Artisan". For South Africa as a country, one of our biggest priorities is to develop qualified artisans to support our economy, particularly when one considers the fact that to successfully deliver on the strategic infrastructure projects (SIPs), we need artisans. The SIPs were announced by President Jacob G Zuma in his State of the Nation Address (SoNA) last year. The SIPs include the building of roads, schools, universities, harbours, power stations and other social and economic infrastructure. The growth of industry as well as the strategic infrastructure projects announced by the President – some of which are already being rolled out – require quite a significant number of qualified and competent artisans. The launch of 2013 as "The Year of the Artisan" therefore seeks to bring into sharp focus the need for the production of artisans as part of the national strategy to deal with the shortage of critical skills in South Africa.

The launch today is in direct relationship to a number of interventions we have taken as a department in systemically addressing the shortage of skills in the country. One of those interventions was the National Artisan Development Conference that we held in July last year. Through that Conference, we established a platform that will annually review the state of artisan development in South Africa and allow for discussion and consultation on how to continually improve the National Programme for Artisan Development, known as: "Seven-Steps to Becoming a Qualified Artisan".

On that day, we started with a small, developmental conference, but we were nonetheless building on some important advances we had made over the past three years since the DHET was established. My intention was, and remains that we progressively expand this discourse across all the provinces so that when we meet again in another conference, we will have a much louder and clearer voice on national artisan development, as it is implemented in all provinces. Out of this launch here today, my colleague, Deputy Minister Manana, will lead the initiative in all Provinces where the option of Artisanry as a career option for the youth – and other out of school adults - will be widely communicated and promoted.

There is no doubt in my mind that we need to accelerate the process for improving the status and profile of artisan trades as inspirational careers for the large numbers of young South Africans. The provincially based discussions that followed our Conference last year, which will continue with the Deputy Minister's visits, require all our partners to commit to the "Seven-Steps" in support of accelerating the development of these key labour force skills. Another important development that is also linked to this is that last year in January we launched the Green Paper on Post School Education and Training. A White Paper is due out soon and I must commend the resounding response and support into that process from our stakeholders, because it has helped shape our thinking on the challenges, purpose, organisation and priorities of the post school system in South Africa. I trust the Media also made its inputs into those processes, and those of you who did would have noted that artisan training and other forms of workplace-based training are a central part of our strategy to expand education and training opportunities for our people, especially the

youth. Closely associated with the expansion of education and training opportunities is the question of raising the status of vocational training. The idea that trades and other vocational programmes are only for those who can't get into university is deeply ingrained in our society and has a detrimental effect on our ability to develop the skills required by our labour market, not to mention the status of those who make a very important contribution to our economy and society. With the launch of "2013: The Year of the Artisan", we are actively changing this misconception, and working towards making FET Colleges, and the artisan and other career-based training programmes that they offer, the option of choice for the majority of our youth - and other out of school adults - who take this route.

The National Artisan Moderation Body or NAMB that we had established in 2010 is responsible for coordinating artisan development in the country. Through this structure, we now have NAMB Offices in provinces, which are located in engineering campuses of public FET colleges. One of the key tasks of these offices was the coordination of provincial conferences with the purpose of raising the profile and impetus of artisan development in provinces, districts and local municipality structures. The brief was that this would be done in collaboration with the SETAs and FET colleges in their respective provinces. We instructed that these conferences should be held at FET College campuses so that we would continue to locate our public FET colleges at the centre of all national artisan development processes.

The "Seven-Steps – Becoming a Qualified Artisan" advocates the National Programme for Artisan Development and allows for a common national, cross-SETA and cross sector understanding of processes involved in becoming an artisan. To a large extent, institutional and general public knowledge of this process has been lost to South Africans. The conflated and confusing sector-based skills development system has created huge blockages to a simple and easy-to-understand artisan development system. Through the Provincial road-shows that will be led by the Deputy Minister, we will once again be re-emphasising the basic steps of becoming an artisan and how these steps can be efficiently and effectively implemented.

Following the launch today, Deputy Minister Manana, will go to all provinces throughout the year engaging the youth with the aim of:

- i. Promoting Artisanry as a career of choice within the Post-School Education and Training (PSET) system
- ii. Raise awareness about the professionalisation of Artisanry by skilling existing artisans through Recognition of Prior Learning (RPL) processes
- iii. Highlight skills development opportunities that are available in Artisanry to learners, and the youth in general In declaring 2013 as the "Year of the Artisan" we also wish to appeal to the Media as one of our critical stakeholders to work with us in putting into sharp focus the need for the production of artisans as part of the national strategy to deal with the shortage of critical skills in South Africa.

Huge public investment was announced for infrastructure projects in the President's State of the Nation Address (SoNA) in 2012. At that time, the President highlighted the fact that the massive investment in infrastructure must leave more than just power stations, rail lines, dams and roads. It must industrialise the country, generate skills and boost much needed job creation, he said. Now in line with that kind of pronouncement from the Head of State, we as a department have also invested billions into the development of our FET Colleges. Our goal is to develop them into institutions of choice, so that we will not have to import skills from other countries in order to deliver on our Strategic Infrastructure Projects. We are saying to you today that Government views the production of artisans and other mid-level skills as a priority, and hence the official declaration of 2013 as "The Year of the Artisan".

I thank you.

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INTRODUCTIONS

Philipp Gonon and Erica Smith

Chairpersons of the INAP-Board



This volume summarises papers of the 5th International Conference of the International Network on Innovative Apprenticeship (INAP): Apprenticeships in a Globalised World: Premises, Promises and Pitfalls held on the campus of the University of Witwatersrand, Johannesburg, South Africa, on April, 23-24, 2013.

The INAP conference in Johannesburg is the biggest one ever held, with around 250 participants from all over the world. Beside renowned researchers, also distinguished policy makers and practitioners debate about the chances of apprenticeships in all parts of the world in order to improve the livelihood for young people but also countries' economies and the welfare of their societies. Previous conferences of INAP in Bremen (2006), Vienna (2008), Turin (2009) and Beijing (2011) had impacts on the discourse about reforms and prospects of apprenticeships particularly in Europe and Asia. The topical conference thus extends the network to a third continent.

For the first time, INAP has organized part of this conference in a joint programme together with the International Labor Organisation. This collaboration is very important for this year's conference, especially in view of the conference venue: With the move of the conference to Africa, it addresses key topics that refer to the African context. One of the most central issues here is "Upgrading Informal Apprenticeship" which plays a big role in different African countries.

A specific focus will be given at this conference in a workshop for the Memorandum „An Architecture for Modern Apprenticeships – Standards for Structure, Organisation and Governance“ which has been elaborated in 2012. This Memorandum is the result of a decision of the board in 2011 in Beijing, where a commission on Apprenticeship Architecture was set up.

Besides the conference organization and conference publications INAP is also active with further printed releases: The INAP Network's book ‚Rediscovering apprenticeship‘ published in 2010 and including chapters based on papers from the Vienna conference, has informed and contributed to the recent expansion of apprenticeship in many countries across the globe. Together with the European Network „VETNET“ we have published in 2013 "The Architecture of Innovative Apprenticeship" (Deitmer/Hauschildt/Rauner/Zelloth (Eds). Springer, Dordrecht).

The papers of this conference cover, among other related VET themes in an open stream, the following topics:

- Introducing apprenticeships: background, chances & difficulties
- Enabling learning opportunities in workplaces and informal contexts
- Apprenticeships and National Qualification Frameworks (NQFs): does VET fit into NQFs?
- Managing transitions from VET into the world of work

The papers were almost split up equally to the five streams. Many participants and presenters from different countries give the conference, as always, a cross-cultural and global dimension. All in all 67 participants submitted scientific papers which offer

insight in a variety of national contexts of debates around apprenticeships and give the opportunity for many fruitful discussions. The exchanges will hopefully also lead to collaborations after the conference.

Keynote speeches over the two days of the conference cover the full range of the conference topics: Apprenticeships from an South African perspective and the shifting discourses on skills development and apprenticeship in South Africa, overcoming the work-inexperience gap through quality apprenticeships, apprenticeships in global, national and local contexts and how INAP can help to bridge these gaps. The attention given by the local organizers and the authorities of South Africa confirms that our focus on modern apprenticeships is not only of intellectual interest but reflects a global perspective and an urgent need of reforms in the field of VET.

The next INAP conference will be held in 2015, and due to various research areas of INAP members, we expect that the forthcoming conference will be as stimulating as this one was.

Finally we would like to express our thanks to our hosts and partners. The Manufacturing, Engineering and Related Services Education and Training Authority (merSETA), the University of Witwatersrand, the National Skills Authority (NSA), the International Labor Organisation (ILO) as well as Bremen University's TVET Research Group (I:BB) and the University of Zurich.

Raymond Patel

*CEO, The Manufacturing, Engineering and Related Services
Sector Education and Training Authority (merSETA)*



On behalf of merSETA, I take this opportunity of welcoming you to this 5th International INAP Conference held for this first time on African soil. South Africa and merSETA is proud to host this event together with other international and national organisations. I therefore take this opportunity of welcoming the ILO, ETF etc etc

This is indeed an opportune time to host this event in South Africa. Our National Development Plan 2030 which serves as our guiding light to where we as a country need to be is aptly titled, 'Our Future: make it Work'. The NDP, It provides the roadmap for South Africa on how to respond to historical inequities. The Plan is an effort to reduce inequality and to strive to eliminate poverty. Importantly, education and skills development is considered one of the key priorities in achieving the objectives of the development that we seek. Under the perspective of raising employment through faster growth and ensuring that the state plays an active role in development, the need for "Improving the quality of education, skills development and innovation" has been considered critical. It is imperative that the merSETA's role is therefore in developing a skilled and capable workforce. As a skills development entity, the merSETA's major focus in respect of new skills development and the alleviation of skills shortages is the development of artisan skills. The merSETA's core business is artisan development, and apprenticeships represent an important part of the process. To this end, the merSETA has a wide spectrum of registered learnerships and apprenticeships in place. In the 2012 financial year alone, the merSETA registered 5 168 apprenticeship contracts, 6 051 learnership agreements and 5 808 skills programme learners. In the same period, 4 194 learners obtained full qualifications and 2 559 skills programme learners obtained statements of results towards various levels on the National Qualifications Framework (NQF). The merSETA has therefore provided an important opportunity for many South Africans to be appropriately skilled and have the opportunity to engage the national challenge.

Challenges within the public basic education and FET systems have impacted on the availability of engineering skills, as well as on the generic skills levels within the existing workforce. Also, low levels of labour productivity not only drive down capital - intensive growth within the sector, but are also considered one of the major factors undermining South Africa's ability to embrace new technology and innovation and thus compete internationally. Economic growth, massive infrastructural development, government policies and global advances in manufacturing technology have also increased skills demand. Engineering qualifications now generally equip graduates with skills in new technology. However, for the existing workforce, skills gaps in these areas must be filled with additional training.

We are therefore clearly focussed on developing in preparation for work in our sector. The importance of apprenticeships therefore cannot be ignored. What we strive to achieve in 2030, we need to start building now: that holistically capable workforce that our National Skills Development strategy has identified as a key target for an inclusive society responsive to the myriad challenges of the 21st Century. Thus while much has been done, much more still needs to be achieved.

Rouksana Osman

Faculty of Education, University of Witwatersrand



The conference this year is entitled Apprenticeship in a Globalized World: Premises, Promises and Pitfalls. We are honored to be hosting this conference at Wits University.

My hope is that this conference will open the door to lively and progressive debate around apprenticeships, and, in particular, around the relationship between apprenticeships and innovation. If the delegates of this conference can leave with some progressive ideas around apprenticeships and perhaps a thoughtful agenda for boosting apprenticeships world wide, then I think that the conference can be deemed a success. In the same vein of progressive thinking around apprenticeships and innovation, I would like to briefly introduce all of you to some of Wits Education Policy Unit's projects, which we believe are on the cutting edge in the sense that they are actively trying to push our thinking about skills and skills development in South Africa, broadly, not to mention the development of important thinking around the role of apprenticeships and learnerships in skills development. Crucially, EPU has actively sought to make the links between the realm of skills and skilling and the labour market. This agenda has been crafted as such, so that we begin to get a holistic understanding not just of skills or of merely mapping the institutional arrangements that promote skilling, but of understanding the relationship between skills and the labour market. We contend that skills and skill provision do not exist within a vacuum. Within the context of this conference, that of discussing apprenticeships and innovation, there must be a necessary linking of skills debates with labour market debates. If this connection is clearly made, we can begin to conceptualise what we might call a 'skills ecosystem'.

I think that the EPU's research agenda and related projects tie in well with the overall theme of this conference and I am delighted that the EPU is a part of proceedings over the next few days. I am certain that over the next few days, some inspiring thinking around apprenticeships and innovation will emerge, and an agenda for apprenticeships globally can begin to be realised. While this is not to suggest a one-size-fits-all approach to apprenticeships, my hope is that the debates that will occur at this conference will help to reinvigorate debates worldwide, about the importance of apprenticeships for the economic and social development, the creation of employment, and the alleviation of poverty. At a deeper level, the importance of reinvigorating and growing apprenticeship programmes can help to reconstruct the idea of apprenticeships being the first step toward creating vocation. I mean vocation here in the older sense of the word, that is, a vocation as a life calling.

Allow me to conclude by thanking the MerSeta for bringing this conference of international repute, not only to South Africa, but also to Wits. We value the relationship that we have with MerSeta – supporting us with research and development. We hope that this relationship can be replicated with many other Setas in the future. We also thank MerSeta for contributing a variety of resources to make this conference possible.

Thank you for allowing me the opportunity to speak to you today. A warm Wits welcome to this conference, and do enjoy the next few days.

KEYNOTES

Overcoming the work-inexperience gap through quality apprenticeships – the ILO’s contribution

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Summary: The ILO works with constituents on improving transitions from school and training to decent work. Apprenticeship systems in the formal and informal economy are important means to smooth transitions and provide quality skills that are of relevance to labour markets. Work on upgrading informal apprenticeship focuses on building on local traditions and practices, improving the quality of training, skills recognition, decent work and the participation of women. Increased international attention to and demand for quality formal apprenticeship has led the ILO to expand its work on apprenticeship with research endeavours and ensuing practical applications in member countries.

Keywords: ILO, skills development, formal apprenticeship, informal apprenticeship

Introduction

After a period of fading interest in apprenticeship systems internationally, the aggravated global youth employment crisis has brought apprenticeship back to the policy agenda. It is recognized that countries with well-established apprenticeship systems tend to be better at managing school-to-work transitions for youth, and enjoy lower ratios of youth unemployment rate to adult unemployment rate. However, “export” of apprenticeship systems to developing countries has, in many cases, failed and thus doubts about the transferability of successful apprenticeship systems persist in the international skills development community. At the same time, in countries with large informal economies, skills continue to be transmitted by means of informal apprenticeship – in several countries the predecessor of successful formal apprenticeship systems. In other countries, formal and informal apprenticeship systems co-exist, often because formal systems at the time of establishing responded to different economic realities. In other cases, more recently established formal systems still struggle to find ways of incorporating informal apprenticeship in the mainstream system or of building bridges between formal and informal apprenticeship.

Renewed interest in apprenticeship systems was echoed in tripartite discussions at the International Labour Conference in the context of countries with apprenticeships having lower youth unemployment rates. Discussions highlighted repeatedly that apprenticeships are effective means of bridging school and the world of work for young people by making it possible for them to acquire work experience along with technical and professional training. The *Conclusions on skills for improved productivity, employment growth and development* (ILO 2008a) and the *Resolution and conclusions on youth employment: A call for action* (ILO 2012a) resonate this, calling on

¹ This paper was presented by Christine Evans-Klock, Director of the ILO’s Skills and Employability Department, at the 5th INAP Conference in Johannesburg, April 24, 2013. The authors would like to thank Patrick Daru, Ashwani Aggarwal, Paul Comyn and Christine Klock-Evans for their helpful comments.

the ILO to engage in the promotion of quality apprenticeships, including in developing countries.

In 2010, in response to a G20 request, the ILO developed a *Training Strategy for strong, sustained and balanced growth* which focuses on the building blocks of effective skills systems. The importance of apprenticeships is highlighted in that strategy.

In May 2012, the G20 Labour and Employment Ministers concluded in Guadalajara that countries should foster

"...sharing of experience in the design and implementation of apprenticeships programmes and explore ways to identify common principles across the G20 countries by facilitating a dialogue among our social partners who have presented us a shared sense of the importance of apprenticeships."

In response to that agreement, the ILO prepared an overview of apprenticeship systems and issues and presented it to the G20 Task Force on Employment (Steedman 2012). The ILO's experience and the conclusions drawn from this overview are reflected in that Task Force's position paper on *Key elements of quality apprenticeships*.

The ILO's concept of apprenticeship

The ILO defines apprenticeship in its Apprenticeship Recommendation (R60, 1939)

"... the expression apprenticeship means any system by which an employer undertakes by contract to employ a young person and to train him [or her] or have him [or her] trained systematically for a trade for a period the duration of which has been fixed in advance and in the course of which the apprentice is bound to work in the employer's service" (para.1).

and its Vocational Training Recommendation (R117, 1962), which defines apprenticeship as

"Systematic long-term training for a recognized occupation taking place substantially within an undertaking or under an independent craftsman should be governed by a written contract of apprenticeship and be subject to established standards" (para. X.46).¹

Apprenticeship is one of the oldest social institutions, having ensured skills transmission from one generation to the next over centuries, and still does so in many countries with large informal economies. "Modern" apprenticeship has ambitious goals – to enhance general education and to develop technical knowledge and skills to internationally competitive standards. Its implementation in complex modern labour markets requires high levels of trust and cooperative behaviour between public authorities, employers, training providers and young people. The cooperation and trust required can only be achieved by robust social dialogue.

Social dialogue means the negotiation, consultation or simply exchange of information between, or among, representatives of governments, employers and workers on issues of common interest relating to economic and social policy. In apprenticeship, social dialogue needs to be the primary means for selecting apprenticeship trades; designing the governance and financial set-up of the system; determining skills standards, the legal status of apprentices, trainers and apprenticeship firms; negotiating working conditions and labour rights and so forth.

¹ Recommendation No. 117 of 1962 supersedes Recommendation No. 60 of 1939, and both have been replaced by Recommendation No. 195. Since Rec. 195 (2004) does not include a definition of the expression apprenticeship, the above mentioned Recommendations are still referred to for the purposes of this assignment.

In formal apprenticeship systems, the actors for social dialogue are national or sectoral organizations of workers and employers jointly with governments. Dialogue on upgrading informal apprenticeship is often led by small business associations, sometimes by trade associations and unions, parents or youth associations, non-governmental associations and community groups, and in some cases local or national governments.

Formal apprenticeship depends on a clear governance structure which needs to take account of costs and benefits for employers and at the same time the rights of apprentices and the benefits to them. Governments should play a facilitation role while social partners need to be in the driver's seat – to a much larger extent than what is commonly the case in many national skills development systems that do not include apprenticeship.

How does apprenticeship benefit ILO constituents?

Employers and their organizations benefit in many ways: Employers have their staff trained according to practical requirements, and apprentices contribute to production while constituting a unique source of recruitment. Apprentices constitute a “pool” of competent labour for companies and for a sector as a whole due to the transferable nature of the skills acquired. This reduces the risk involved in poaching since other companies train to the same skill level and skilled workers are available on the market, in other words the more companies are involved in apprenticeship training, the lower the risk of poaching. In addition, apprenticeship increases the awareness of the importance of learning within a company. Where apprentices are recruited as full-time employees the return from apprenticeship on the firm's investment is substantial (Steedman 2012).

For young people, apprenticeships open a first job that can lead to career-long productive employment, combines training with earning, opens access to social protection and coverage under national labour law. While apprenticeships make full use of the often under-appreciated richness of the workplace as a learning environment, they also bear risks for youth. Apprentices in both informal and formal apprenticeships can be subjected to hazardous working conditions, or be exploited as cheap labour while not acquiring the expected skills. Safeguards are needed in both contexts. When apprenticeship is managed by the social partners within a legislative framework democratically determined, benefits to young people are considerable. A number of recent studies confirm that a completed apprenticeship greatly increases a young person's chance of being employed (Quintini et al. 2007).

Governments also benefit from apprenticeship systems in many ways. If employers train, it means that they share the cost of skills development. Compared to full-time institution-based training, apprenticeships are much more cost-effective, including when governments provide additional financial incentives for employers.

Another important advantage of apprenticeship as a means of skills delivery is the superior matching of training to labour market demand that results from apprenticeship training being contingent on the offer of a place from employers. Training supply therefore is closely linked to labour demand, reducing the risk of skills mismatch (Steedman 2012).

The following additional elements are important contributors to a successful system:

- dividing training responsibilities clearly between school and work-based learning sites ensures that the two learning sites mutually support each other;

- providing career guidance to expand young peoples' awareness of apprenticeships and the kinds of jobs they can lead to and avoid gender stereotyping so that apprenticeships broaden career choices for young women and men;
- incorporating entrepreneurship with technical training inspires young people interested in starting their own business someday to choose apprenticeships and also raises the social status of vocational training;
- considering an appropriate balance between specific and transferable skills, also reinforcing core skills such as problem solving, teamwork, and communication;
- providing a structured system of skills tracking, testing and certification, against competencies defined in advance, in order to improve skills signalling;
- applying sector-based approaches facilitates cooperation between concerned parties because people know each other.

Apprenticeship in the informal economy

Informal apprenticeship remains the main provider of skills in many countries with large informal economies. Based on a mostly oral training agreement, a young person acquires the skills of a trade or craft from an experienced craftsperson while working in a micro or small enterprise. This private arrangement is embedded in social norms and traditions of a society and community and thus depends on values, rules and customs, enforced by society, kin-groups or the business community.

What interests the ILO?

Many advantages of formal apprenticeship equally apply to informal apprenticeship, such as the direct market relevance of acquired skills, making use of the workplace as a learning environment, imparting core skills alongside technical skills, and inducting apprentices into the business culture and networks and thus facilitating transitions to the first job. At the same time, weaknesses in the system are more prevalent given the informality of the business, lack of formal rules and of formal enforcement mechanisms. Child labour is a major concern for the ILO, and informal apprenticeship cannot be corrupted into hidden child labour. Other concerns related to possible exploitation of young people include apprenticeship periods that exceed four or five years that trap apprentices in a state of dependency without acquiring additional skills, excessive working hours with little or no right to time off; hazardous working conditions, lack of access of apprentices to social protection in case of illness or occupational injury, and insufficient wages or allowances. The ILO is also concerned about how informal apprenticeships could do a better job of opening a wider range of livelihood opportunities for young women and avoid reinforcing gender stereotypes and occupational segregation.

The ILO has been looking into the practice of informal apprenticeship since the late 1970s. Although interest from the research community persisted, countries and development agencies continued to prioritize the strengthening of formal TVET systems, expecting that informality would decline as countries grew and developed.

After the turn of the century, the informal economy moved back into focus in international debate, including at the International Labour Conference in 2002, which addressed decent work deficits in the informal economy and identified practical ways to address them and to move economic activities along the continuum towards formal-

ization. The discussion emphasized that equipping young people and workers with better skills would prepare them for more formal work of higher productivity.

Practices in informal apprenticeship, in particular in well-researched West African countries, were relatively well known, and some project experience on strengthening small business associations operating in the informal economy started to emerge in the 1990s. In some North African countries, policies to fight the informal economy have led to a decline in informal apprenticeship, reducing opportunities of skills acquisition for youth. Against this background, the ILO felt the need to put a stronger focus on understanding the functioning of the system and the underlying informal institutions that on the one hand are critical to sustain the system, but on the other perpetuate bad practices. Also, research on countries in East Africa should expand the knowledge base around informal apprenticeship in the African region.

Table 1: Selected strengths and weaknesses in informal apprenticeship

Strengths	Rationale
Self-regulating training system that provides employable skills to large numbers of youth	Set of rules embedded in social norms and traditions that establish incentives for master craftsmen and apprentices to conclude training agreements
Training is cost-effective	Financing of informal apprenticeship is shared between master craftsman and apprentice. The apprentice's commitment to stay for a certain period enables cost recovery by the master craftsman. Moreover, training is workplace-based and equipment and tools already exist
Informal apprenticeship enables access to skills training for poor youth in urban and rural areas	Admission to informal apprenticeship is usually not based on educational achievement. Flexible financing arrangements allow for payment of fees in instalments, or lower fees for longer durations
Apprentices are inducted in a business network and therefore enjoy high levels of employability	Apprentices are part of the master craftsman's business, build up client relations, and benefit from the master craftsman's business contacts when graduating from informal apprenticeship
Weaknesses	Rationale
Lack of access to new skills or technology	Traditional skills transmission mechanism perpetuates existing skills. Intervention: Establish links with larger enterprises or formal training institutions and foster cooperation among businesses. Provide skills upgrading courses for master craftsmen and apprentices
Perpetuates occupational segregation, restricts opportunities for girls	Traditional gender patterns and beliefs in society Intervention: Create awareness among businesses to change recruitment practices, empower girls to apply for apprenticeships in traditionally male trades. Encourage women in non-traditional trades to take on apprentices
Recognition of acquired skills is restricted to the local area or network of the master craftsman	Local customs limit skills recognition to the master craftsman's network. Intervention: Expand the scope of recognition by introducing credentials by business associations or formal training centres with credibility and wider outreach

Source: Adapted from ILO 2012b.

The objective of more recent ILO research and knowledge-sharing workshops with constituents and experts around this topic has been to identify feasible ways to upgrade the informal apprenticeship system while maintaining its important function of transmitting skills to the young generation on a large scale. The ILO commissioned studies in Democratic Republic of Congo, Egypt, Ghana, Ivory Coast, Malawi, Mali, Sudan, Tanzania, Tunisia, Zambia, Zimbabwe, and organized an experts meeting on upgrading informal apprenticeship in 2007 in Geneva (ILO 2008b).

ILO lessons learned so far?

Informal apprenticeship is very diverse and varies according to the local context. Practices can be similar within one trade, but follow different modalities and customs in another trade in the same locality. It is also affected by demographic pressures, increasing rural-urban migration, and globalization, and thus keeps adapting to changing contexts, while conserving its core function.

Some Western African countries maintain strong traditions of graduation ceremonies which act as an incentive for apprentices to finalize their apprenticeship, since they gain public recognition of their skills. Some business associations promote quality in apprenticeships and offer skills testing after completion. Apprenticeships in East Africa have a tendency to be more flexible, shorter, and address older youth than in West Africa. Forms of informal apprenticeship through clusters of craftspeople also exist.

Young people entering into informal apprenticeship come from very different educational backgrounds, ranging from school drop-outs to graduates of technical institutes. There is a tendency that disadvantaged young women and men, from a migration background, with disabilities, or from minority groups face more difficulty in accessing informal apprenticeship. Gender stereotypes are also typical.

The following table lists some strengths and weaknesses of the system, and the rationale behind them.

Interventions to upgrade and improve informal apprenticeship need to build on a thorough understanding of local norms and customs. They intend to make use of the enormous potential of informal apprenticeship as a cost-effective mechanism to improve the skills base in the country, while at the same time acknowledge and address its weaknesses. The ILO has identified eleven areas for improvement, all of which are discussed in a resource guide addressing countries in Africa (ILO 2012b).

Examples of ILO support to constituents to upgrade informal apprenticeship

The ILO raises awareness of policy options to upgrade informal apprenticeship through publications, national events, and capacity building workshops. The ILO also works with constituents in selected countries to pilot and implement measures to improve informal apprenticeship through technical cooperation.

- In Niger, provisions for improving informal apprenticeship have been included in the national TVET policy and small pilot experiences were launched in collaboration with the national crafts association.
- In Bangladesh, training quality of informal apprentices is improved in partnership with a large national NGO.
- In Zimbabwe, local crafts associations are promoting basic training contracts and skills standards.
- In Benin, the ILO supports the national crafts association in establishing skills standards and assists in implementing a national certificate for graduated apprentices.
- In Egypt, off-the-job training is being designed for informal apprentices.
- In Tanzania, the national TVET authority piloted tests for the recognition of prior learning with master craftspersons and apprentices.

The following main messages for upgrading informal apprenticeship guide the ILO's interventions:

- build on a thorough, local and trade-specific assessment of why and how informal apprenticeship systems work;
- capitalize on existing practices;
- put existing business associations in the driver's seat and strengthen their capacity;
- involve workers' organizations, parents' associations, youth groups and/or other community groups;
- combine different measures and include elements addressing aspects of the decent work deficit, such as hazardous working conditions;
- take a step-by-step approach;
- improve training quality by providing new skills to master craftspersons;
- enhance recognition of acquired skills through credible organizations such as business associations;
- address gender imbalance and make informal apprenticeship more attractive to women by encouraging uptake of apprenticeships in non-traditional trades;
- properly monitor and evaluate progress and outcome;
- create links with the formal training system and the formal labour market in order to provide foundation skills and to improve the recognition of acquired skills and explore ways to share the additional costs of this training;
- improve the reputation and public perception of informal apprenticeship, e.g. by considering it part of the national training system.

Formal apprenticeship back in focus

Formal apprenticeships based on robust social dialogue and public-private partnerships (PPPs) help young people overcome the work-inexperience trap that blocks their transition from education and training to employment.

The ILO has agreed on key areas of interest for formal apprenticeships, has identified main success factors around which formal apprenticeship programmes bridge training to productive and decent work and has identified areas of response in research and through other means.

What interests the ILO?

In the ILO report for the International Labour Conference (ILC) in 2008, apprenticeships were emphasized as an important aspect of skill development systems and in the ILO G20 Training Strategy (ILO 2010) quality and formal apprenticeships were identified as important assets of sectoral approaches which benefit from extensive participation of the social partners.

The renewed awareness of the successful impact of formal apprenticeship systems on youth employment in some countries is leading to important questions about how to foster setting up and developing similarly effective formal apprenticeship systems elsewhere, across the spectrum of low-, middle- and high-income countries. In particular the ILO is interested in promoting a better understanding of:

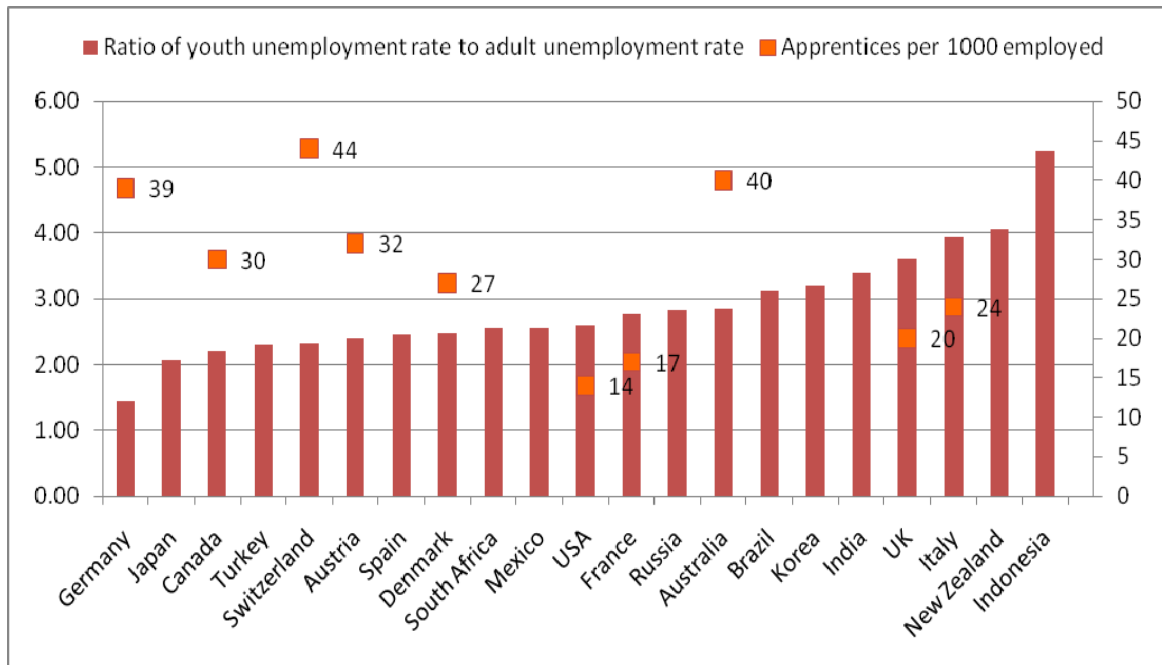
- the role of social dialogue and the meaningful involvement of employers' and workers' associations in apprenticeship design;
- definitions and responsibilities of the participating partners in companies and with training providers;
- financing mechanisms for formal apprenticeship systems, including PPPs;

- appropriate national apprenticeship legislation;
- expanding apprenticeships into non-traditional industries and new occupations;
- vastly increasing the number of apprenticeships available to young people by overcoming barriers to apprenticeship in smaller enterprises.

ILO lessons learnt so far

Reviews of formal apprenticeships (Steedman 2012) and the lessons from countries' experience reflected in the Key Elements for Quality Apprenticeships (G20 Task Force on Employment 2012), reveal that:

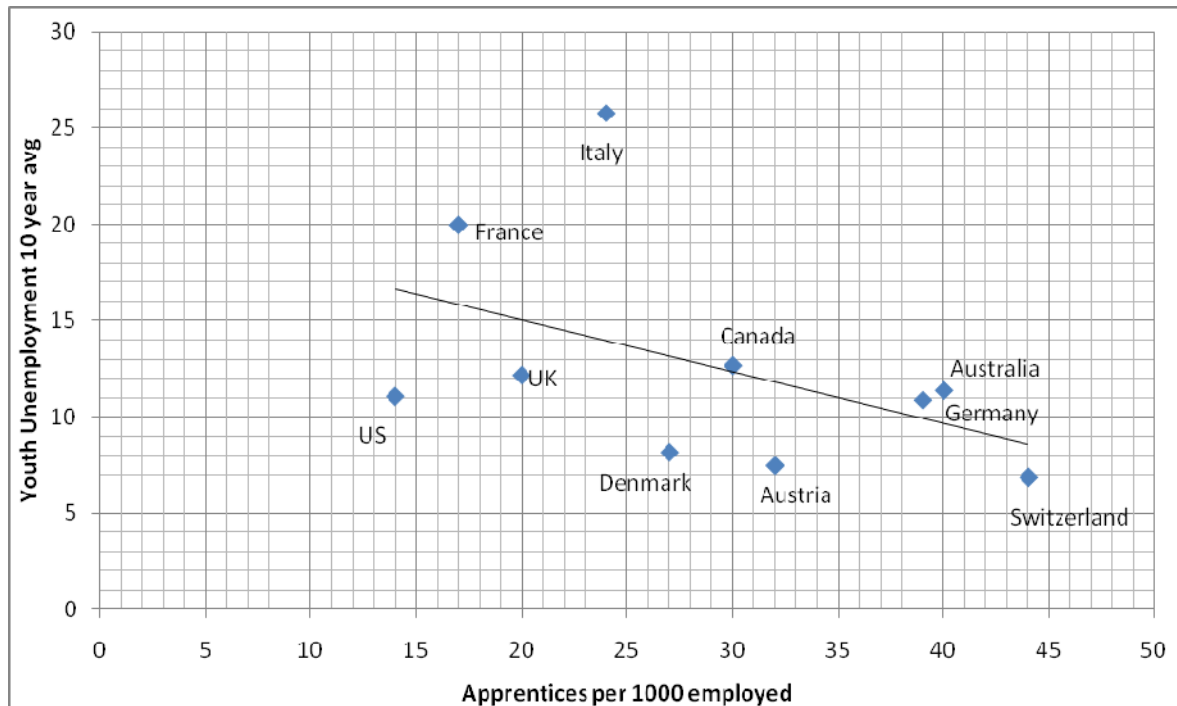
- sector-based approaches in skills development sustain PPPs and assure the quality of formal apprenticeships and the quality of apprentices' subsequent employment;
- combining classroom and workplace learning enables employers to match training to their needs and allows for relevant training that is innovative, responsive to labour market needs and leads to higher productivity, better working conditions and higher transferability of skills within and across sectors;
- combining training with earnings (“learn as you earn”), access to social protection and respect for labour rights, and higher likelihood of post-training employment makes apprenticeship attractive to young people;
- youth unemployment is more likely to far exceed adult unemployment rates where apprenticeship systems are weak (see figure below);



Source: Adapted from Steedman 2012.

- employment services expand young peoples' awareness of formal apprenticeships and the kinds of jobs they can lead to and avoid gender stereotyping so that formal apprenticeships can broaden career choices for young women and men;

- incorporating entrepreneurship education with technical training inspires young people interested in starting their own business later to choose apprenticeships and raises the social status of vocational education and training;
- some countries with more formal apprenticeships have enjoyed lower youth unemployment during the current recession (see figure below);



Source: Adapted from Steedman 2012.

Examples of ILO support for promoting formal apprenticeships

Following the ILC in 2012, the renewed focus on formal apprenticeships has been clearly articulated in the “Resolution and conclusions on youth employment: A Global Call for Action”, calling on the ILO to engage in the promotion of quality and formal apprenticeships, including in developing countries. This emphasis has heightened ILO work on apprenticeship, for example:

- a background paper for the G20 Task Force on Employment in October 2012 on “Apprenticeship Systems and Issues” (Steedman 2012);
- participation in the development of “Key Elements for Quality Apprenticeships” together with the OECD for the G20 Task Force on Employment in October 2012 in Geneva;
- international review and national workshops in India 2012/2013 to reform the Indian apprenticeship system, in close collaboration with World Bank;
- coverage of the design of formal apprenticeship systems in the ILO Skills Academy organized by the ILO’s International Training Centre in Turin, Italy in October 2012;
- coverage of financing formal apprenticeship systems within the Workshop on Financing Skills Development Systems in Turin, Italy in December 2012;

- formulation of formal apprenticeship research on “Quality Apprenticeships” in Denmark, USA and (upcoming) in Australia, India, Indonesia, China and Colombia which includes a particular focus on apprenticeships in small enterprises;
- launching the development of a tool kit for the design and operation of formal apprenticeship systems.

The way forward

The ILO’s current work on quality apprenticeships can be put into three different areas of work:

Business Network on apprenticeship

The ILO is conducting a feasibility study to identify the context and potential priorities for creating a Global Business Network on Apprenticeships for Youth Employment and explore modalities for setting it up and maintaining it. This activity is undertaken in partnership with the International Organization of Employers and the World Economic Forum.

Formal apprenticeships

Research is being conducted on successful endeavors to build quality apprenticeships (Denmark, North and South Carolina and Tennessee, USA, Australia) on how better working conditions attract young people into apprenticeship and on the relevance of apprenticeships systems for improved working conditions, productivity and image of vocational education and training in small and medium-sized enterprises (SMEs) (case studies in Indonesia, India, China, Colombia); and on how the lack of involvement of SMEs in quality apprenticeships can be overcome (joint research with OECD on involving SMEs in quality apprenticeships).

Tools:

- Forthcoming: Toolkit for apprenticeship development.

Knowledge sharing/capacity building:

- Regional training workshop on developing formal apprenticeship systems in the MENA region in Amman, Jordan, (May 27-31, 2013).
- Skills Academy 2013 with electives on quality apprenticeships (November 25 – December 6, 2013).

Technical cooperation:

- Policy advice on reforming the Indian apprenticeship system, in collaboration with the World Bank; Global review, 11 country case studies, country consultations, national workshops.
- Establishing a formal apprenticeship system – following a sectoral approach in tourism – in Tanzania, including country consultations and national workshops.
- TVET reform project in Bangladesh, advice on legislation for formal apprenticeships, including the provision of innovative delivery models involving industry centres of excellence.

Upgrading informal apprenticeships

In addition to studies conducted on how informal apprenticeship systems function in a particular context and how to upgrade them (since 2007: Mali, Ghana, Tanzania, Malawi, Egypt, Sudan, Zimbabwe, Zambia, and Bangladesh), the ILO commissioned a study on the links between formal and informal apprenticeship in Tunisia, and is conducting research on upgrading informal apprenticeship as a means to help rebuild post-earthquake Haiti.

Tools:

- Forthcoming: Guide on skills testing for small business associations.

Knowledge sharing:

- Expert knowledge sharing workshop on informal apprenticeship in Johannesburg, South Africa (April 2013).

Technical cooperation:

- Component on informal apprenticeships in ongoing projects in Zimbabwe, Benin, Egypt, Bangladesh, Tunisia.

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Apprenticeship in global, national and local contexts: Can INAP bridge the gaps?

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Summary: It is a propitious time for apprenticeship. Several countries are expanding their programs significantly and international organizations are recommending widening the role of apprenticeship. But many are skeptical that the trends are real or that an expanded apprenticeship effort can or should be supported. The contested issues relate to effects on mobility, on narrowing the educational experience, and on the feasibility of apprenticeship. Apprenticeship's increasingly global reach raises questions about international occupational standards. Are they feasible? Are they desirable? Standards can be useful but must not lead to rigidities; they allow for learning from international experience but should not stifle innovation. Moreover, some skills are particularly relevant in their national and local context. Information and research will be critical to the global progress on apprenticeship. INAP can play constructive roles in coordinating research and in helping build a clearinghouse of apprenticeship standards used in specific occupations throughout the world

Keywords: Apprenticeship, global, INAP, standards

Introduction

The economic shocks disturbing the world economy since 2008 have generated unemployment levels not seen since the 1930s, especially among young people. Youth unemployment has surged to stunningly high levels: as of late 2012, the unemployment rate of 15-24 year-olds stood at 54-55 per cent in Greece and Spain, 35 per cent in Italy, 25 per cent in France, and a still high 16 per cent in the U.S. Even in Finland, a country well regarded for its outstanding results in international academic tests, the youth unemployment rate is 19 per cent. At the same time, many employers in high unemployment countries are experiencing difficulties finding and hiring skilled workers. Before the world recession, researchers have argued that the demand for skill is outpacing the supply, causing wages to rise rapidly for the highly-skilled and stagnate for middle- and low-skill workers (Goldin and Katz 2008).

The rising premium for college graduates led to an increased emphasis on university education. Between 1996 and 2011, college graduation levels of young adults soared in many OECD countries, doubling or tripling in many countries, including France, Germany, Spain, and the United Kingdom. But, the impacts of the college expansion have often proved disappointing. Youth unemployment and overall unemployment remain much higher in many countries with very high college graduation rates than in countries emphasizing apprenticeship.

The debate over academic vs. technical and vocational education is hardly new but has taken on new importance as the costs of university education have jumped to new highs and college graduates in some countries face high unemployment. The push for college-for-all policies in many countries—partly out of a concern for equality or at least equality of opportunity—is increasingly untenable in the face of rising college costs, high dropout rates, and high academic unemployment in several coun-

tries. Large gender gaps are emerging in many countries as well, as young men fall far behind young women in completing college. In France, 48 per cent of women but only 39 per cent of men completed a college degree. Ultimately, college graduates find jobs, but often not at positions they expected. Moreover, there seems to be little relationship between unemployment and college completion rates.

As policymakers look for steps to reduce their countries' problems, apprenticeship models are attracting renewed interest for their role in raising workplace and occupational skills, increasing productivity, and reducing youth unemployment. In recent years, youth unemployment rates in countries with robust apprenticeship systems affecting a large share of young people—Austria, Germany, and Switzerland—have been less than one-half the rates of countries with little or no apprenticeship. That's why the International Labour Organization (ILO), the Organization for Economic Cooperation and Development (OECD), and the International Monetary Fund (IMF) and the G20 are all recommending that countries ranging from France, Spain and the United States expand apprenticeship training. For example, the G20 Labour ministers called for promoting and strengthening quality apprenticeship systems and encouraging the sharing of experiences in implementing apprenticeships. The statement went on to encourage the identification of "common principles" as well as a dialogue among social partners concerning the importance of apprenticeships (Steedman 2012).

High youth unemployment is driving the urgent effort to expand apprenticeship. Skills shortages and wage erosion among those without college degrees provide other rationales for intensifying the role of apprenticeships. The desire to maintain a strong presence in manufacturing provides another stimulus to apprenticeship. Despite their high labour costs, Germany and Switzerland have managed to retain 16-20 per cent of their employment in manufacturing, while the U.S. share has declined to about 10 per cent.

So worldwide, it is a propitious time for apprenticeship. With information flowing more and more easily across borders, the push to go beyond the pure academic and classroom focus of education is beginning to take hold. We have witnessed dramatic increases in apprenticeships in two countries that had few only 10-15 years ago. Australia has tripled their numbers and England jumped from about 50,000 in the early 1990s to over 600,000 today and rising. In France, the government's jobs initiative has called for 500,000 new apprenticeships. Apprenticeship initiatives are on the way in India as well. Even the growth of INAP is itself indicative of the growing interest in apprenticeship and sharing of research and lessons across national boundaries.

Still, is apprenticeship really going global? Many are sceptical. They see apprenticeship as limiting the horizons of young people, as providing too narrow an educational experience, as unable to attract nearly enough slots from employers, as heavily dependent on traditional institutions and especially healthy union-management relationships, and as inappropriate for the modern, ever-changing world of jobs. The concerns are of the sceptics are serious and can be grouped into two questions:

- 1) Is an extensive apprenticeship system desirable?
- 2) Is it feasible to develop apprenticeship in countries lacking the appropriate institutions?

Supporters of apprenticeship should take these issues seriously. This talk touches on the questions but does not provide full answers. In framing the debate, it is important to move beyond the academic-vocational distinction. First, everyone agrees that some academic learning is necessary for all citizens in a democracy. Second, when we turn to the issue of learning skills for various careers, the real questions are: what

is the best mix of academic subjects necessary for various groups of careers? What career-focused instruction should take place in classrooms and what learning should occur in workplaces? How can young people best learn a wide range of employability skills, including motivation, responsibility, and the ability to get along with others, working well in teams, dealing with cultural differences, allocating time and other resources, following instructions, and developing an ability to solve problems and be creative?

Using this expanded framework to widen the academic vs. vocational debate can be uncomfortable because the answers are often context-specific. What works best for some occupations and objectives may do poorly for other occupations and objectives. Some have concluded that vocational education, including apprenticeships, limit job mobility and the ability and willingness to adapt to new technologies (Hanushek, Woessman, and Zhang 2011). I and probably most members of INAP would dispute this view. However, it is critical to develop credible evidence documenting the adaptability of well-trained and educated apprentices. It is important that policymakers recognize that occupational and occupational clusters are heterogeneous and strong generalizations across the bulk of occupations are hazardous.

Few would dispute the need for work-based learning even for occupations at the top of the hierarchy. Certainly, a great deal of a physician's capabilities must be learned through work-based learning in hospital rounds, internships, and residencies under an experienced physician. Increasingly in the U.S., where law students have little practical training over their three year stay in law school (after four years of a BA), law firms are increasingly complaining about the inability of recent graduates—even from top law schools—to begin practicing law after graduation and the bar exam (Segal 2011). Again, the appropriate way to ask the question is whether, in any given occupation, we have the balance right.

Another aspect of framing that is often bypassed in discussions about apprenticeship is the potential influence of an education and training system on the demand for workers. Often, employers can choose among several feasible production processes. The structure of jobs is not fixed; rather, the share of jobs requiring various skills emerges not only from consumer demand and feasible technologies but also from the mix of education and training. The ready availability and cost of workers of a particular skill may encourage employers to upgrade their utilization of skill and create more rewarding and productive jobs. Discussions of the endogeneity of training systems and production systems go back a long way; Sellier and Silvestre (1986) provided a thoughtful analysis of the issue in the mid-1980s. These linkages add another layer of complexity to the debate and leave much unanswered. Of course, unanswered questions are music to the ears of researchers.

A brief statement on the desirability of apprenticeship

From my perspective, an extensive and high quality apprenticeship system contributes greatly to the ability of young people to learn critical employability skills and occupational skills, to gain a sense of pride in their attainment and their work, to cultivate an occupational identity, to integrate academic and theory with practice, to develop into a mature adult, to adapt their skills to many occupations within similar clusters, and to achieve a rewarding career. As INAP participants generally recognize, apprenticeships improve the match between skill development and the job market, reinforce classroom learning with applications at the workplace, involve trainees in the production process, provide trainees with a natural mentoring process, allows trainees to earn wages while gaining occupational mastery, and require less government spending than other education and training strategies.

Although work-based learning is necessary for nearly all occupations at some point, the use of apprenticeships is particularly well suited for the many skilled jobs and careers that do not require a BA or higher degree. These jobs still make up 40 per cent or more of employment in modern economies. They range from construction crafts and construction management to skill manufacturing positions, including machinists and laser welders, to police officers and fire fighters, to sales and purchasing positions, to health technicians and licensed practical nurses, to chefs and floral designers, and to legal secretaries.

One common critique of the apprenticeship strategy is that employers have little incentive to make investments in apprenticeship because they bear the costs and workers and other employers reap many of the benefits. This leads to the second major objection to apprenticeship—that the training is too specific to a particular occupation. Since workers often change employers and occupations, much of the enhancement to human capital will go unused. Moreover, the tailored occupational approach offers the workers fewer options to shift to other fields without losing their earnings power.

While the research findings are not unequivocal, an expanding literature suggests that both critiques lack strong empirical support, at least for a class of apprenticeship programs. For many employers in several countries, the investments in apprenticeship training are recouped during the training period itself. Careful analyses show that the majority of employers in Switzerland and possibly in Germany experience zero or very low net costs, which are training, material costs, and wages minus the value of the apprentice's production (Muehleman et al. 2010). For these employers, the post-program benefits in the form of reduced recruitment and training costs and the certainty that the regular worker will meet skill standards are simply added benefits. By their second or third year in the program, apprentices often produce more value than they cost in wages. Of course, we do not know what would be the net costs of apprenticeships for those employers not currently sponsoring apprenticeships.

As to the narrowness of the training, the skills learned in apprenticeship are potentially quite portable (Geel et al. 2011). Changing occupations within the same cluster of occupations can actually raise wages. Workers not in their training occupation report they frequently use the skills learned in their apprenticeships. The transferability of apprenticeship skills should not be surprising, given that apprenticeships teach a wide range of tasks and include classroom training in theory as well as practical applications. In any event, most studies find healthy and often high rates of return to apprentices for participating in apprenticeship programs. Still, because adaptability of former apprentices over their working lives is a major concern, we need more research evidence on this issue.

The globalization of apprenticeship?

We can now turn to dealing with apprenticeship in a global, national and local context. Several questions are worth considering in this INAP forum.

- Is apprenticeship really going global? Or, are some countries bound by tradition and institutions that are in conflict with the development of a robust apprenticeship system?
- In a globalized world, where information appears readily available, why do countries fail to adopt approaches that are most cost-effective in generating human capital?
- What are the trade-offs underlying the development of national and international standards?

- Is the information on skills learned, costs, student outcomes, and productivity impacts readily available? What information is essential in helping companies, national and regional governments, and workers choose at optimal use of apprenticeship?
- How can we in INAP best contribute to the growing movement toward quality, career-focused training?

While trends are difficult to discern definitively without a detailed study, it looks as if apprenticeship is becoming increasingly widespread. Certainly, major expansions in several countries are easy to observe. Given these increases and minimal erosion of apprenticeship in the traditional apprenticeship countries, the balance is clearly pointing toward growth. The United States is so far largely a holdout to these trends, although some signs indicate a renewed interest in apprenticeship. In addition, it is worth recalling that several past efforts have failed to generate a critical mass and self-sustaining growth (Sweet 2009).

Tradition, unionization, and regulated labor markets often play important roles in apprenticeship. Certainly, unions are partners in several apprenticeship systems, including Austria, Germany and Denmark. Although only 7 per cent of the U.S. private sector is unionized, the influence of unions is significant. They influence legislation and regulation. In the U.S., one source of apprentices arises from a law regulating wages in construction projects sponsored by the federal government, except for registered apprentices. U.S. construction unions often co-manage apprenticeship programs and provide employers with a staffing function that deals with the variation in projects across contractors. Switzerland and Denmark have tradition and an extensive union presence and allow considerable labor market flexibility. There are certainly regulations but firms have the ability to allocate workers in accordance with their own needs.

Certainly, these institutional factors are relevant and often associated with a well-functioning apprenticeship system. However, they are not necessary conditions. England has staged a resurgence of apprenticeship with a relatively free labor market and modest union presence. Government and business leadership have been critical and government subsidies for classroom instruction contributed to their success as well. Despite lacking tradition, regulation or high levels of unionization, South Carolina has mounted an initiative that has boosted the number of programs and apprentices by a factor of five within four years, albeit from a low base.

So, why, when information is widely accessible about the net benefits of apprenticeship, do we see some countries fail to develop strong systems? I try to answer this question in the case of the U.S. in a chapter of Lorna Unwin's volume on Contemporary Apprenticeship. It is an interesting question because apprenticeship training would seem consistent with American values of pragmatism and extensive use of the market as well as public-private collaborations and a limited role for government. I conclude that one of the most important barriers is conceptual - essentially the idea that skill is identified almost solely with educational attainment and scores on academic tests. Although everyone knows academic skills are far from all that is required for people to succeed in the market, the policy discussions and measurements remain focused on a limited concept of skills.

The ready availability of general information about apprenticeship and career-focused skills in general is not specific or sufficient enough to turn many away from their biases. In fact, Americans know little about apprenticeships. Those who are aware of the concept believe it is only relevant to workers in construction trades. For elites, who have no relatives or friends who have completed an apprenticeship in construction or manufacturing, apprenticeships are viewed as an anachronism. On

the other hand, once the concept is explained, people recognize the value of apprenticeship in the context of contextualized learning, work-based learning, and the incentives built into structured programs leading to occupational mastery and certification.

A second barrier in the U.S. is the presence of a competing institution—the two-year community and technical college system. As described by Stone (2012), the U.S. has several career and technical education (CTE) subsystems with few connections between them. Training other than apprenticeship takes place in high school CTE programs, community colleges, federal training programs for disadvantaged and displaced workers, and business-based training programs. Although these systems perform demonstrably worse than apprenticeships in the U.S., the evidence so far has not been conclusive enough to overcome the role of vested interests (Hollenbeck 2008). A third barrier is the contentious state of union-management relations in the U.S. Construction unions run excellent apprenticeship programs and often they provide genuine service to their partner companies. But the unions have not generally favored pushing apprenticeship toward new occupations and non-union companies.

Of course, barriers can and have been overcome, even in some places in the U.S. I believe that improved information offers one important element in expanding the role of apprenticeship across countries. In my conclusions, I will consider how INAP can contribute to improving the quality and use of information about apprenticeship.

Trade-offs in globalizing occupational standards

Despite efforts by the European Union to develop common standards of qualification in some areas, the determinants of skills learned in apprenticeships vary from country to country. A key question is whether consolidation makes sense or whether the current approach is well tailored to building human capital through apprenticeship. Common standards could simplify the training regime and interpretation of outcomes, especially for multinational firms. The standards provide a kind of economy of scale. Presumably, if the standards applied across more employers and apprentices, the cost of developing standards and curricula could be spread across more individuals. This, in turn, might increase the resources for setting standards and producing curricula.

Creating common or at least similar standards across countries could expand the “communities of practice.” Just as economists and sociologists across national boundaries view themselves as colleagues, might not electricians, police officers, lab technicians, CAD specialists, computer network administrators do so as well? Of course, employers often have distinctive task requirements that vary with the country, the local community, or the firm. Yet, there are similarities as well, especially with respect to the theoretical underpinnings of the profession.

At this point, it is far from clear what elements of global standards might be useful and constructive in helping expand and maintain high quality apprenticeships. The specifics and the organizational framework can matter a great deal; an approach under the ILO may well differ from one under the OECD. Although developing and disseminating wide-ranging standards is an ambitious task, it may be infeasible and fraught with political divisions. The effort would require considerable developmental work as well as research on impacts and would involve difficult trade-offs. Standards can be useful but they should not lead to rigidities. Widely disseminated standards allow for learning from international experience but should not come at the expense of innovation. Employers want to know what level of skills they can expect workers to reach to qualify for certification in various fields. At the same time, employers recognize that some skills are particularly relevant in their national and local context.

Given the local nature of some labor markets, employers in a local industry sector can come together to define skill requirements. The U.S. experience with “sectoral” programs is one such approach. Sectoral programs have attracted considerable attention, especially after largely positive experimental demonstrations (Conway et al. 2007). The approach links employers in a specific industry or that use the same occupations with intermediary organizations that can work with employers, governments, and workers. The intermediaries are able to develop deep expertise about skill requirements and job ladders, focus on meeting industry needs, provide services to workers, and try to generate long-term change in employer recruitment and training. A third party often provides the training, but employers also participate in the training process. Although the programs documented gains for participating workers, the sectoral initiatives are usually one-off projects that are costly to develop, given the absence of economies of scale.

One framing relevant to setting standards is the frameworks of expansive and restrictive apprenticeships pioneered by Fuller and Unwin (2003). This framework highlights the variation in styles of training but not why firms chose one approach over another. Presumably, the firms that select restrictive apprenticeships do so for reasons of cost-effectiveness. Are they misguided? It would be important to know in which circumstances expansive apprenticeships work as well for the firms as restrictive ones and the extent to which the expansive approach generates better long-term results for workers. If the expansive approach is considerably more effective for workers and only modestly costly for firms, the results could well influence the scale of subsidies by type of apprenticeship. Comparisons of training approaches and productivity outcomes in similar occupations across countries could yield worthwhile information for policymakers and firms.

Another issue in organizing apprenticeship systems concerns the number and specificity of apprenticed occupations. A modest number—say 100—is likely to involve more breadth and adaptability than having separate standards for each of 400-800 occupations. On the other hand, apprentices may not learn enough in depth or take too much time to do so when the number is so small as to encompass a wide cluster of occupations. Further, employers may be more likely to offer apprenticeships when they can choose among large of occupations. The marketing staff for apprenticeship in South Carolina appreciated the flexibility offered to firms by the large array of occupational standard. It seems to increase employer participation. This discussion raises several issues for research. Even when countries use a large number of occupations, do those in the same cluster of occupations obtain similar amounts of theory as they would with smaller numbers of occupations? Does having a smaller number of occupations significantly alter the learning and trajectory of apprentices? Does it encourage or deter employer participation?

Given these tradeoffs and the limited research about the strengths and weaknesses of various international standards, what are the implications for our international community of practice on apprenticeship?

An expanded role for INAP and other institutions

INAP researchers are uniquely suited to play a role in the global development of apprenticeship. Least create a data base that documents what the standards are throughout the world. We are beginning to see some collaboration in easing access to detailed descriptions of apprenticeship systems and their context. Much more is possible by going beyond international conferences and developing international projects. Initially, the projects can involve some basic descriptive work that can nonetheless be useful. As the institution develops and attracts resources, it can serve as a

way of organizing knowledge about the workings and impacts of alternative types of apprenticeships, both within and across occupations.

In recent months, I have incorporated the American Institute for Innovative Apprenticeship partly to increase the specificity and quality of information about apprenticeship. One major project is to develop and maintain a clearinghouse for information on apprenticeship in the U.S. and in other countries. INAP members could contribute significantly to the clearinghouse project. The clearinghouse would include descriptions of existing apprenticeship and closely related programs, research findings on the costs and benefits of apprenticeship, case studies of apprenticeship programs in the U.S., and information on how employers can establish apprenticeships and operate them effectively. A key component of the clearinghouse would be descriptions of skills apprentices must attain to qualify for an occupational credential. The descriptions will include those covering a wide range of occupational standards used in the U.S. and in other countries, including Canada, Germany and Switzerland. It will also provide information on general skills learned in related classroom instruction as well as skills learned in work places. INAP could play a critical role in providing and verifying content standards, updating the numbers in various apprenticeship programs by occupation, and reporting on innovations in apprenticeship in their countries. Once employers see the high level of skills that apprentices will attain once they complete, some are likely to become more open to starting an apprenticeship in their firms. Finally, the Institute will encourage additional data collection and research on apprenticeship.

A second task is to build peer membership networks made up of current and former apprentices, employer sponsors of apprenticeship programs, unions participating in apprenticeship programs, workforce professionals who already market or could market apprenticeships, and workforce researchers and policymakers, and other interested individuals. This peer network will facilitate communication among apprentices and employer representatives and sharing information about practices that work in their organizations, about local examples of excellent programs, about innovations in apprenticeship training, about how to market apprenticeship programs to young workers, about how to work with community colleges, and about other issues. One can imagine these networks extending across countries as well as within countries. Again, INAP members can help, by publicizing the networks, by volunteering to lead discussions on the network, and by providing video clips of employers and workers in selected occupations describing their experiences with apprenticeship and why it helped them. INAP members can encourage employers in a particular industry to reach out to other employers in the same industry.

A third activity of the American Institute for Innovative Apprenticeship will be to forge partnerships with business leaders, industry associations, community colleges, workforce boards, nonprofits and community based organizations (especially those trying to help less-advantaged and minority workers), and schools and other public programs. INAP members can facilitate contact between industry associations across countries, including the U.S.

Moving forward on research and practice

My look at globalization issues in apprenticeship is admittedly sketchy. I realize that I am raising more questions than I can answer. Although apprenticeship is on an upward trajectory around much of the world, there are serious challenges ahead, especially in documenting its vital role in skill development. I have tried to pose questions for research and present ideas for sharing information and engaging more of the apprenticeship community.

My suggestions for INAP collaboration are initial thoughts and should not be cast in stone. I welcome other responses and suggestions. INAP and INAP members are already making a positive difference in the lives of young people while increasing the efficiency of employers. But we can do more. Employers in many countries still lack quality, specific information on why and how to do apprenticeship. By strengthening the information and research base on apprenticeship and increasing our collaboration with industry, government, and labor, we can increase the scale and quality of apprenticeship and thereby help more young people enter rewarding careers.

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Rearranging the furniture? Shifting discourses on skills development and apprenticeship in South Africa

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Summary: Some of the earliest recorded references to formal apprenticeships in South Africa date back to the early 1800s and are associated with the rights of settlers to take on black children as unpaid apprentices. Today's debates about skills training, apprenticeship and development continue to link to this racialised colonial and apartheid history that shaped the social structures of South African society today. Using an historical sociology approach, the paper examines the shifting discourses on skills development and apprenticeships in South Africa over time, and how these discourses continue to shape policy and the public understandings of these concepts. The paper shows how the current attempts at reinvigorating the skills system in South Africa have worked largely with a rational and linear view of policy, and this has not adequately taken account of both the historical traces and complex overlapping domains of interest that mark out the terrain today.

Keywords: Apprenticeship history, South Africa, policy

Introduction

Skills development has been a key feature of the South African policy landscape over the past two decades. Some of the earliest legislation passed by the first democratically elected parliament focused on education, training and the complete reorganisation of the system. The recently released National Development Plan locates education and training as central features of the strategy to accelerate development in South Africa and overcome the legacies of the divided past (National Planning Commission 2012). Within a wider focus on improving vocational education, significant emphasis has been placed on reinvigorating the apprenticeship system in South Africa, often looking to international examples for inspiration. Significant steps have already been taken and recent data on apprentices passing their trade tests suggests that the system is on an upward trajectory and that numbers of graduates are reaching the levels achieved during the 1980s (van Rensburg 2012). However, concerns and contestation remain around quality, funding, employer commitment and the general public perception of technical work.

Taking insights from the historical sociology approach of Norbert Elias (1978) this paper attempts to look back historically, to understand the ways in which apprenticeship has become understood in South Africa. It tracks the ways in which the apprenticeship system and the perceptions of technical work have been constructed. The argument I make is that the system and its problems are intricately connected to the development of the society and the economy, and any attempts to reform the system need to understand the discourses that shaped the society. Furthermore, by reflecting on the historical futures (Green 2012) that the policy makers envisaged when they reformed the system, we are better placed to understand the outcomes of those policies, but also understand the complexities associated with any future innovation.

These complexities signal warnings for, amongst other things, any simplistic notions of policy transfer between countries.

A note on methodology

This paper draws on two distinct sociological approaches for its analysis. Firstly, the paper draws on the historical processes approach to sociology developed by Norbert Elias (1978). Elias developed his understanding of contemporary problems on the basis of analyses of the social processes that lay behind these problems (1924, 1991a). He was specifically interested in the emergence of national identities in Europe. Nationally distinct processes resulted in forms of socialisation, embedded in the processes and practices of ongoing interaction, which led to the development of distinct national characters. Particular forms of social life are the unintended outcome of social processes, which may or may not have been planned. Elias, like other leading social theorists, alerts us to the need to understand both historical continuity as well as the ruptures, breaks and 'spurts' that occur in the formation of societies (1996). Where there is a break at one level, not all dimensions and levels of social life change in neat correspondence, and there is a need to understand historically the residual forms of social life when 'society' appears to have changed. This is particularly important for making sense of social relations in a society where over three hundred years of colonial conquest, racial privilege, and patriarchal power relations lie beneath the veneer of rapid social change.

The second theoretical approach that this paper draws on is the more discursive orientation of the work of Boltanski and Thévenot (1999). They argue that social life can be analysed in terms of justifications for action, that is the criteria used to justify actions. Since there can be a plurality of modes of justification, and that these modes can be mutually incompatible, it is necessary to understand which rules are being invoked and which are applied. In the context of this paper, the central argument drawn from this work is the notion that different modes (or discourses) of justification may be invoked at different points by different people around the same set of practices. It is possible that at times these different discourses may appear to be addressing the same social action, but are drawing only completely different modes of justification and are thus incommensurable.

By bringing these two separate traditions together, I hope to show that the discourses circulating around skills development and apprenticeship are shaped by the historical traces from which they emerge, but also need to be understood in terms of the multiple modes of justification which underpin the diverse sets of action that shape policy and responses to it. I attempt to do this by first tracing in broad strokes the development of the concept of apprenticeship in South Africa, then examine the policy changes over the past two decades, and conclude by looking at the implications of these insights for any attempts to innovate in the field of apprenticeship today.

Many of the insights in this paper draw on my experiences of engaging with the development of policy variously as a consultant, a member of ministerial committees, as a researcher and a member of advisory committees. These insights are necessarily partial, and I use them primarily for illustrative purposes rather than as historical facts. The paper must be read as tentative and exploratory.

Apprenticeship in South Africa

Early forms of apprenticeship

A pamphlet promoting apprenticeship issued by the Department of Labour describes the origins of apprenticeship as follows:

The apprenticeship was born hundreds of years ago (the Middle Ages) in other countries, when young people worked under a master craftsman to learn trades. This was a form of inexpensive work in exchange for learning and the young men often lived in the craftsmen's houses. Women were taught in embroidery and silk-weaving. (DoL n.d, 2)

The pamphlet then makes the extraordinary leap to the 1980s when the basic structure of current apprenticeship was put in place by the Manpower Training Act of 1981. What is elided in this account is the fact that from the arrival of the first European settlers in the 1600s to the 1980s, South Africa and all its social institutions were shaped by the forces of colonialism and (more recently) apartheid. The concept of apprenticeship therefore cannot be divorced from a broader social history, and that history remains embedded in the discourses that shape the system today.

Apprenticeship in South Africa was in fact linked directly to the system of slavery, rather than being an importation of the 'middle ages' European tradition. The Dutch traders and early settlers had imported slaves to carry out semi-skilled and skilled artisanal labour in the towns and farms that developed in Southern Africa after 1652. Over 60 000 slaves were imported into the colony from various parts of Africa and Asia, with their origin being linked to a particular type of skill or characteristic. The offspring of European and slave liaisons were particularly prized as slaves (Giliomee and Mbenga 2007).

In 1775 the concept of apprenticeship was introduced to allow slave owners to 'apprentice' the children of male slaves and free Khoisan or Hottentot women till their 25th year. As labour pressures increased, this practice was extended to any 'Hottentot child'. While these practices were abolished in the late 1790s, they were reintroduced with respect to free 'coloured' children between the age of 8 and 18 if they were deemed to be destitute, orphaned or simply if they had grown up on the employer's farm. Thus, right from its earliest incarnation, apprenticeship in South Africa was a coercive and exploitative relationship, rather than a benign relationship between a master craftsman and a novice.

When the British Empire abolished slavery in 1834, apprenticeship was the mechanism through which this change was managed. In order to deal with the transition from a slave based labour system to a market based system, slaves were first indentured to their former owners, and could be retained as apprentices for a period of four years, before they were freed. This amounted to little more than what van Schoor termed the transition from "chattel slavery to wage slavery" (1951, p.8).

As the South African economy expanded and changed, particularly after the mineral revolution, the relationship between labour and skills shifted. Waves of new British and other European (particularly Jewish) immigrants arrived throughout the 1800s. Many came with trades and skills that competed with the former slave population. Policies were put in place to protect the interests of the white traders, artisans and farmers by restricting access to land and capital for black South Africans. While the expansion of the South African economy after the discovery of minerals had resulted in acute labour shortages, resulting in policies designed to force local people off the land and allow for the importation of skills from China and India, the subsequent doubling of the white population and the impoverishment of urban Afrikaners

resulted in protectionist policies designed to restrict the type of work that black labourers were allowed to do.

The discovery of significant gold in 1886 and technological innovation that made deep-level mining possible altered the labour market dramatically. Because of a skills shortage, artisans were recruited from Britain and Australia who brought skills and, crucially, union experience. In the early period, these skilled labourers were able to demand high wages. However, while deep-level mining required skilled labour, it also required thousands of unskilled labourers to dig the shafts. The mining corporations set about recruiting migrant workers from rural parts of the country that had been badly affected by ongoing conflict and this set up the particular pattern of migrant labour supply that continues to affect the mining industry to this day. What the mining houses also did was import Chinese labour that undercut the more expensive, unionised white labourers.

Political pressure and extensive industrial action on the part of the white workers in the first two decades of the twentieth century resulted in a complex system of classification that linked certain types of work to certain racial categories. Essentially the more skilled and better paid work was reserved for whites. This is best illustrated by the Juvenile Affairs Act of 1921 and the Apprenticeship Act of 1922 which set up mechanisms for the placement of white youth in employment and put the minimum requirements for entry into apprenticeships out of the reach of the majority of coloured youths (Giliomee and Mbenga, 2007). With the rise of Afrikaner nationalism and the affirmative action strategies targeting poor whites after the Great Depression, South Africa's labour force had been formally linked to racial categories.

Throughout most of the 20th century this basic structure to the labour market remained in place. By the late 1970s there were signs that the skills system was no longer able to provide for the requirements of the increasingly diverse economy. The economy had stalled with a zero growth rate in 1977. This coincided with growing urban unrest amongst the black population, symbolised by the 1976 school student uprising in Soweto but evident throughout South Africa's cities into the 1980s. The strategy adopted by the nationalist government was to try and reform the system in order to win over a small African middle class while marginalising the rural masses (Giliomee and Mbenga, 2007). Central to this strategy was education reform, and in particular the promotion of vocational education for black South Africans previously excluded from semi-skilled and skilled occupations. The new Manpower Training Act of 1981 governed a new apprenticeship and skills development system that opened up opportunities for blacks to enter into skills training and apprenticeships. In addition, a significant expansion of vocational schools and training centres for blacks occurred in the 1980s (Chisholm 1983).

While the detail and the inevitable contestations of the history cannot be pursued here, what is central for the discussion that follows is that apprenticeship has a very specific history linked to slavery, indenturing, protection of white labour and, more recently, the role of state enterprises in dealing with unemployment. History is not just a matter for the record, but has shaped the perceptions of apprenticeship and the values associated with being an apprentice.

These perceptions and values run deep in communities, and the ways in which the system benefited, exploited, excluded and included various categories of citizens have shaped those communities. Four standout features need to be noted: apprenticeship has on numerous levels been exploitative and a form of modern slavery; apprenticeship has been used as a vehicle for social engineering; apprenticeships have been associated with a limited set of (primarily technical) trades and occupations; and technical occupations have tended to be viewed as being on lower levels of the

status ladder in comparison with white collar work. These understandings and experiences run deep in individual and community understandings of the concept and shape their reactions to change.

Recent developments

There has been much public misunderstanding of the reforms to the training system since the advent of democracy. A central complaint was that the government had allowed an effective system of apprenticeship to collapse. The reality was that already since the mid 1980s the system of work-based or dual apprenticeship had gone into serious decline, both in terms of quality and quantity.

Figure 2: Numbers of apprentices in selected years

	1985	1990	1996	2011
Passing trade tests	13 500	7 000	3 000	13 168

(Data extracted from van Rensburg, 2012)

It was clearly not the advent of democracy in 1994 or the post-1994 government policies that led to this seeming collapse in the system. Indeed, as the 2011 figures show, the system has returned roughly to the state it was in 25 years ago. What then has been the problem? Firstly, the global downturn coupled with the effects of isolation and sanctions meant that the South African economy went into serious decline in the 1980s, precipitating in part the crisis that led to the negotiated political settlement. In that context the system was oversupplying artisans and there were insufficient places for apprentices.

The second feature of the pre-1994 system was that state-owned enterprises and government departments (including local municipalities) essentially undertook ‘surplus’ training, with relatively few small and medium level enterprises doing training themselves. With the deteriorating economic climate and the advent of neo-liberal policies, most of the state enterprises were either sold off or restructured along commercial lines and, consequently, training was cut back as a cost-cutting exercise. An additional dimension, already noted in the introduction, was that apprenticeship in South Africa had been restricted to artisans in technical fields and there was no wider understanding of apprenticeship in other industries (with the exception of hair care and some hospitality related occupations). This meant that as the economy became more service oriented, there were no equivalents to apprenticeships for this new economic sector. Finally, the quality of the theory courses that serviced the apprenticeship system was at best uneven, at worst out-dated and poor.

The democratic governments have made the reform of the education and training system a priority. Promulgation of a National Qualifications Framework (NQF) was the first step towards a new system that sought to introduce a modern, innovative system with three Bands (General, Further and Higher Education) with most work-based and vocational education located in the Further Education and Training (FET) Band (Wedekind 2010). Because of the limitations identified in the apprenticeship system, a new concept of a learnership was introduced in the late 1990s which catered not just for artisans but all occupations.

Besides being available in all fields, learnerships were designed to be modular so that they could be delivered through a range of modes of delivery, in colleges or on the job, and the work-based experience could be built up cumulatively in a number of different companies rather than through the traditional apprenticeship contract with one employer. To manage and fund this system, Sector Education and Training Authorities (SETAs) were established and funded through a training and skills develop-

ment payroll levy system that made significant sums of money available. In 2000 the then Minister of Labour established a Working Group to oversee the phasing out of the old apprenticeship system in favour of learnerships.

Higher Education	Universities	Universities of Technology	Private Providers	HEQC
	FETC (now NSC and NCV)			Umalusi
Further Education and Training	Grades 10-12 in Schools	FET Colleges	Workplace	
	GETC (GEC) ABET Certificates			
General Education and Training	Schools Grade R – 9	ABET Levels 1 – 4		

Figure 2: A schematic representation of the NQF

The introduction of a Further Education and Training Certificate (FETC) was the original vision for the exit point at the end of both schools, FET colleges and the workplace training process. The intention, articulated in the Green Paper on Further Education and Training, was for a post-compulsory Further Education system (the FET Band) comprising schools that focused on an academic track leading in the main to university entrance, colleges (both public and private) that focused on a vocational pathway, and work-based learning through the vehicle of learnerships. All three pathways would ultimately lead to the same qualification (an FETC). It was anticipated that the majority of learners (as they were now called) would be found in the vocational stream, as the academic track leading to university entrance would cater for a relatively smaller segment of the learner population.

There are some parallels in this envisaged system with the FE system in the UK, or the differentiation between Grammar and Comprehensive schools, or indeed the distinction between Gymnasium and Volksschule in the Germanic system. The one pathway provides an academic preparation for university while the majority receive a rounded education that prepares people for work directly or for further vocationally oriented study. Because the NQF made provision for both recognition of prior learning (RPL) and transfer of credits horizontally and vertically, the pathways outlined in the policy were not intended to be terminal or restrictive. In this imagined future a learner could complete Grade 9 (the end of the General Education band), proceed

into an apprenticeship, transfer to college and work toward a vocational FETC, transfer credits and return to schools in order to gain access to university and so forth.

Very little of this vision actually materialized. The notion of Grade 9 being an exit point from the system was never developed seriously. Colleges were not expanded or reconceptualised in the manner envisaged in the Green Paper, where they would accommodate the majority of mainstream learners. The National Certificate (Vocational) was not developed in conjunction with the NSC. Schools remained the institution of choice (or necessity) for more than 90% of learners enrolled in the FET Band.

Twelve years after the introduction of this new system, apprenticeships remain a growing feature of the skills landscape. Why this is so presents an interesting case study, which is discussed in the next section.

Scripts, sequencing, silos and suspicions

In this section I wish to explore the ways in which policy scripts, sequencing, silos, suspicion and nostalgia resulted in an educational landscape that has been through a significant reform process but has increasingly begun to resemble an earlier system.

The first dimension is the matter of policy scripts. South Africa's approach to educational reform has tended to focus in the first instance on policy development. Expert committees are constituted, study tours undertaken and new policy promulgated, often with limited regard for the resource implications or the current state on the ground. Inevitably policy is linked into wider global processes and there are instances of borrowing, lending, attraction, contestation and indigenization (Steiner-Khamsi 2004). In the case of apprenticeships and artisan training, the new policy landscape sought to locate these processes within a wider national system of qualifications and widen their definition, modes of delivery and institutional linkages.

Once the policy was in place, the implementation began. However, as different responsible agents took up the process and began implementing, there was quickly a disjuncture in the sequencing of the various parts. Thus, while the imagined system was a complex unity, with different components supporting and linking to each other, these components of the system were either differently able, unwilling or non-existent. As each component of the system evolved within the policy frame, increasing disjunctures appeared. In the case of the transition from apprenticeships to learnerships, SETAs needed to be established, educational service providers needed to develop capacity and curricula, employers needed to understand and embrace the new approach, and learners needed to be persuaded that this was worthwhile. Each of these dimensions evolved in very different directions and at different speeds, at times leading to serious policy failure.

What exacerbated this problem of sequencing and divergence was the creation of silos and vested interests as the institutional landscape developed. Decisions as to whether institutions were linked to one or other government department and vagueness in the delineation of responsibility which led to 'overlapping mandates' created both confusion and paralysis. The FET Colleges were seen as the key vehicle for delivering the curriculum for the new system. However, while apprenticeship and learnerships were driven by the Department of Labour and the SETAs, the colleges remained aligned to the provincial education departments. This governance arrangement was changed in order to give colleges more autonomy and make them more responsive to the local economy's needs, by establishing councils that ran the college.

These institutions developed their own priorities that were not aligned to the strategies being developed by the Department of Labour and the SETAs. Indeed, since the FET colleges were an education responsibility, the then minister of educa-

tion sought to orient colleges away from skills courses and towards a fully-fledged vocational parallel to the academic high school. What was left out of the equation was the teaching of core components of the artisan's theoretical training. Indeed, the old NATED courses that were designed with an apprenticeship in mind, were to be phased out and colleges were informed that they should shift their resources toward offering a new full time National Certificate Vocational (NCV). However, industry and officials in the Department of Labour wanted to retain the NATED courses, and so colleges continued to run parallel curricula.

Once institutions had been established to manage parts of the system, they inevitably guarded their responsibilities and would not give up their authority without significant contestation. In addition, bureaucratic requirements that enforced hierarchical relationships would restrict or prevent communication at horizontal levels in the system. Thus, even within the same department, different branches or directorates would pursue their specific targets with little cognizance of the consequences for other parts of the system. For example, within the Department of Education's own FET Branch there was little coordination between the work of the directorate responsible for schooling and the directorate responsible for colleges. Thus there was almost no alignment between the reforms in the schooling system and the reorientation of the colleges into vocational institutions that were parallel to the schools.

Within this evolving and uncoordinated landscape, relationships of trust were in short supply. This was in part a consequence of the upheaval that was a necessary consequence of the reorganisation of the post-apartheid landscape. As new people, from different ideological and political backgrounds, entered institutional spaces, old cultures and networks no longer dominated in all spheres. This meant that the tried and trusted ways of doing things were no longer valued by everyone. Suspicion about motives, abilities and capacities added further dynamics to the already complex landscape. For instance, proposals to do away with an apprenticeship system were no longer understood in terms of the critiques of the failures of the system articulated in the 1980s, but were seen as misguided and high handed actions by a new political elite wanting to dismantle systems for the sake of change. In that context, passionate defence of old systems based on nostalgia coloured the discourse of the day.

It is in this context that many current attempts to reactivate and reintroduce apprenticeships must be seen. For many, this process is driven by an attempt to recreate a system that was remembered as effective and functional. The fact that the system had in fact collapsed and that the conditions have significantly altered is conveniently forgotten. The demand for skills and the available places for traditional apprentices is completely mismatched and if the old models are reintroduced without critical interrogation, there are bound to be difficulties. Similarly, there has been an attempt to retain and reactivate the old NATED courses to support apprenticeships. Although there has been recognition that the NATED courses lacked some of the generic skills, there hasn't been sufficient interrogation of how apprenticeships might be linked to the modern curriculum of the NCV (with the exception of some innovative pilot programmes).

The details of these processes cannot be unpacked in this paper, but what is significant are the broader patterns. Reflecting on the 'historical future' (Green 2012), rather than the history as it unfolded, reveals a policy that envisaged a completely restructured and integrated education and training landscape with high levels of mobility for learners, a wide range of learnerships in every field, and a strong orientation toward vocational education. The reality of the process as it unfolded reveals multiple competing discourses and processes, that resulted in an endpoint that is very far

from the imagined future. The competing discourses draw on a range of modes of justification informed variously by competing visions and memories.

One particular strand uses the lens of comparison for its justification. More specifically, the successes of the continental traditions are invoked as an example of what we should be striving for. Policy makers, officials and researchers have studied the ways in which the Germanic and Scandinavian countries have structured their training and have tried to introduce policies and practices that emulate the successes. While there is great value in learning from other contexts, it is crucial to recognise that the differences between these societies are so significant as to make an simplistic transfer very problematic. Besides different institutions, South Africa also has a very different history (as discussed earlier) and social understanding of apprenticeship, employers are not generally persuaded that training is their responsibility, and the categories of occupation that are linked to apprenticeship are quite restricted. In that context, using the mode of comparison to justify policy is clearly problematic.

Conclusion

What this paper has attempted to show is that there are two related but discrete influences on the outcomes of policy interventions. The first relates to the historical understandings of a concept such as an apprenticeship and how this plays itself out in the different communities in the present. In South Africa apprenticeship is still tied to a history of slavery, colonialism and apartheid that shaped the understanding of apprenticeship as raced and classed in particular ways. Depending on the community one visits, apprenticeship is either not understood because there has been minimal exposure, or it is viewed as a form of exploitation because the links to slavery and race based job segregation remain in the community memories, or it is remembered nostalgically as secure employment. Each of these (and other discourses of memory) remain very much a part of what is associated with the concept of an apprentice.

In addition, the particular understanding of apprenticeship as artisan trades-based remains very strong. Shifting such an understanding is not as simple as changing a name and hoping that people are able to imagine a work-based learning system that is not about technical work. South Africans have tended to eschew manual 'dirty' work whenever possible. The concept of dignity in labour has not been one that resonates amongst the youth. Their overwhelming preference is for white-collar work in clean, air-conditioned offices. This is not unique to South Africa, but is particularly acute here because it was precisely white collar jobs that were not available under Apartheid, and there is an understandable reaction to engaging with categories of work that were perceived to be beneath the station of whites.

In addition to these historical discourses, the process of reforming the system has not simply been about scripting and implementing a new future, but also about managing the sequencing, pacing, resourcing, public relations of the process and unpacking the modes of justification of the different agents and institutions (Boltanski and Thévenot 2006). As the process unfolded, competing contemporary discourses linked to out-of school youth, skills shortages, transformation of the economy, international models and so forth all pull the discussion in different directions.

Ultimately, through the haze of these competing discourses, processes and institutions, a different landscape has emerged that is different to the policy makers' intentions but also different to the past. Any future attempt to innovate or reform should recognise the complexity of these processes (Ramalingam et al 2008) and the power of the discourses in constraining what is possible and what is sensible.

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CHAPTER I

INTRODUCING APPRENTICESHIP: BACKGROUNDS CHANGES AND DIFFICULTIES

Between an inglorious past and precarious future: South African apprenticeship in transition!

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Summary: Apprenticeship has made a comeback in the national discourse. Mid-level skills development has been placed at the centre of the South African post-school education and training system since 2010. Artisanal¹ skills development, through an apprenticeship route in particular, have been firmly re-established and given heightened attention. This paper explores the origins of the current system and whether we are on the right track in resolving its associated challenges in light of the current socio-economic and labour market context.

Keywords: Apprenticeships, learnerships, vocational education and training (VET), artisans

Introduction

Technical and Vocational Education (TVET) and with it, artisanal development through traditional apprenticeship development, has become a particular focus of the new Department of Higher Education and Training since 2010². Focussed on the development of a co-ordinated post-school education and training context, the role of the supply TVET Colleges has been brought into sharp focus in an attempt to bring back artisanal skills and so respond to economic imperatives.

This paper explores the dynamics of the current apprenticeship system in South Africa, by exploring features of an earlier system and possibilities for current and future responsiveness. It argues that the current drive for expanding artisan numbers by increasing the quantity of apprenticeships might well not be the most expedient way of dealing with the new economic reality and the national development challenges that result from it – unemployment, poverty and inequality. The international trend of increasing ‘precarious’ employment (Standing, 2011), while it provides an important indicator of labour market failure to produce an expanded (traditional) and stable employment of the future, has important implications for the current drive to reconfigure the way in which apprenticeship are implemented. Embracing the reality that the formal labour market is simply unable to respond to the need for increased employment suggests an important way of responding meaningfully to national development challenges. It is thus argued in this paper that, the current apprenticeship context, responds best to a particular labour market context that is unlikely to repeat itself, in a liberal globalised context characterised by quite novel trade flows, technol-

¹ The term artisanal skills in the South African context refers to Technical and Vocational skills for the formal economy, also referred to as Industrial Skills in earlier South African texts. They include skilled trades for manufacturing sector including but not limited to: electricians, boilermakers, mechanics, fitters and turners and related trades people. A list of designated trades has been developed by the National Artisan Moderating Body (NAMB), which captures this notion in the South African context.

² In the current system, apprenticeships are but one of the routes towards artisan status. The others being learnerships, Recognition of Prior Learning and Internship or skilled programme Route (see NAMB)

ogy and above all, a focus on mechanisation, underpinned as they are by profit maximisation and global competitiveness.

The first part of the paper explores key features of an 'inglorious' system (from South Africa's apartheid past), looked upon as a model for the current system. The second part of the paper identifies the current context with its emphasis on a 'target driven' return to a 'traditional' apprenticeship system and examines its relevance to current realities.

Extolling 'virtues' of an inglorious past

The development of the Technical and Vocational broadly coincided with the country's economic trajectory. The turn of the century saw tremendous economic development, occasioned by the mineral revolution up until the 1930's.¹ It was not coincidental that at least two leading South African Universities (Witwatersrand and Cape Town) derive their origins from a once-thriving (although exclusionary) college system. Indeed, at the turn of the 20th century the establishment of the Transvaal Technical Institute, a College of Advanced Technical Education, established in 1903, was one of the largest institutions², with budgets that exceed that of "any but the two biggest universities". This institution was one of a range of other institutions located in other parts of the country. The expansion of the technical colleges sector accompanied the economic growth. Indeed, the period prior to 1948 could well be considered the 'golden age' of technical education and training. The period 1940 to 1950 represented a particularly strong growth in numbers of apprenticeship, from 8 406 in 1930, to 11 683 in 1940, which more than doubled by 1050 to 24379 (and 21 959 part time students) (Malherbe, 1977, p. 183). Interestingly, spending patterns appear to have declined just as numbers increased, and with perhaps a marked impact on supply.

The establishment of the Apartheid system after 1948, with its driving ideological race-based separate development policy, laid the basis for the current TVET and apprenticeship context. Importantly, the period was accompanied by a funding regime which favoured increased per capita state expenditure on universities rather than colleges. Thus before the war, when the State spent around two-thirds of university spending on colleges, by 1970, this had risen to one-eighth, with a particularly marked disparity after 1950.

Importantly, the decline appeared to be triggered by the findings of a Commission designed to improve the system of technical education and training, which at the time realised that it was in need of considerable repair³. The findings of the De Villiers Commission on Technical Education and Training in 1948 recorded not only high dropout and low retention⁴, but found serious problems with admission requirements, the likely result of status considerations and the poor structure of the system. Thus the commission also suggested inter alia that the current system⁵ of 'attending theo-

¹ The value of the country's mineral production grew from UK6 million in 1891 to 17 million in 1911 and 130 million in 1936, with white employment increasing from 21 000 to 120 000 in the same period (Malherbe, 1977, p. 168)

² At the height of its operation, it comprised 5 500 full-time staff, 14 500 part time-staff and 6 500 correspondence students, with a total enrolment of 26 500 students, it had 14 centres stretching across the Vaal, with training in Mining, and teacher-training, art, commerce, nursery school work and domestic science (Malherbe, 1977, p. 169).

³ Indeed, the Secretary of Education was to recount in 1952, that although it criticised the existing system, "it did not realise at the time the full seriousness of the situation (Malherbe, 1977, p. 184).

⁴ An overall 60% dropout rate was recorded, with 63% in South African Railways workshops and 80% in the motor industry in certain large centres (compared to 33% in the UK at the time).

⁵ An earlier variant of what can be considered to be modelled on the current dual apprenticeship system

retical classes one day per week was extended to the current “block release system” which required employers to release students for ten weeks at a time. The structure of the ‘modern’ system was firmly established.

In addition to recording widespread shortages of artisans, the commission recounted that industry lamented in particular the ‘poor quality’ of apprentices. The oft-quoted reason was the ‘low intelligence level’ of those white South Africans recruited to the trade. Thus, by 1950, there was a shortage of 13 000 only in the building trades. By 1969, despite the shortening of the apprenticeship period and the importation of white artisans, there was still an 8.9% shortage of trades people and 6.7% of apprenticeships.

It has been shown that the inherited deficit in artisan production was essentially a product of a carry over from the preceding Apartheid inspired order which not only restricted artisan status to a particular section of the population, but after 1948 actively prevented importation of skills. Evidence suggests that the situation was not always so dire. The pre-1948 order developed a markedly developmental apprenticeship system responsive as it was to both an exclusionary labour market as it was to a restricted and exclusive training regime. Drawing from the British colonial legacy, the system was designed to respond very deliberately to the existing economic context and labour market situation designed to ensure that the system provided key labour needs of a burgeoning mining and manufacturing sector.

Current reality of the ‘precarious-mess’

There is widespread understanding that we are experiencing an artisanal crisis¹. The lack of artisan supply is clearly one of the results of a system that was considered on most accounts as seriously dysfunctional. The shortage of artisans since the 1990s has been exacerbated by a range of factors including the partial privatisation, and subsequent withdrawal, of state-owned enterprises (SOEs) from the large-scale training of artisans. In addition, it was argued that an (un-)der estimation of the trajectory of economic growth, and the miscalculation about which sectors would grow was also lacking (see Bird, 2001, for an exposition of these). Thus the oft-quoted evidence that while there were 33 000 apprentices registered in South Africa in 1975, the fact that this had declined to only 3 000 at the turn of the millennium in 2000 suggests that little had been done in the post-apartheid period². The need for expanding apprenticeships leading to artisan status has currently been widely recognised in the national development discourse. Government proposals to respond to the artisan ‘crisis’ have been decisive. Output 3 of the performance agreement between the President and the Minister includes inter alia the target to, “produce at least 10 000 artisans per annum by 2014” (PME, 2010). The latest National Development Plan, 2030 (2011), a key policy driver for the country, has pointed to a range of mechanisms to respond to the artisan supply conundrum, including expanding the role of State Owned Enterprises (SoEs) in developing artisans (p. 30), producing 30 000 artisan per year by 2030 (p. 320). The target according to the NAMB (skills Accord) is 7664 (2012/13) competently certified with 12 216 of 22 000 registered³.

In the murky waters of target-setting, what is however, perhaps forgotten is the employment and employability of those that are qualified. The National Plan laments that colleges, which “need to become institutions of choice for the training of artisans

¹ See for instance recent government Green Paper (RSA, 2011) and the Skills Accord (RSA, 2011).

² Trade test statistics, as a key element of artisan supply, reinforce this situation (see Prinsloo, 2008).

³ Latest figures according to a presentation by NAMB was that 12 216 (of a target of 25 000) were registered and 5632 (of a target of 12 000) completed apprenticeships were achieved. (Source NAD, *Database Development & Statistics Report*, 7th February 2013)

and producing other mid-level skills.... suffers from a poor reputation due to the low rate of employment of college graduates.” (p.320). The Presidents latest clarion call in the State of the Nation address called specifically to the “...private sector to absorb 11 000 FET graduates who are awaiting placements” (Zuma, 2013). Clearly the need for the economy to absorb those that graduate has been called into question and might well undermine the oft-repeated mantra of a skills shortage at this level.

Conclusion

There is clearly need for an understanding of an international new order that cannot create employment as we know it and which has been a key feature of the post-industrialisation order. Most sharply brought in focus by recent international economic crises and economic disasters since 2008, the need to reconfigure our understanding of the labour market and the education and training system that has up to now been serving it faithfully needs to be reviewed¹. In particular the sheer numbers of these unemployed and, what is becoming obvious, is the unwillingness or inability of economies to generate employment, be it a result of the need to increase profitability or responding to mechanisation brought on by technological development that requires fewer, but more sharply skilled, people to be employed. This makes it all the more likely that the ranks of what Guy Standing calls a ‘nascent’, and dangerous class, referred to as the Precariat (Standing, 2011) will be expanded. Clearly, the implications of this reality for the traditional apprenticeship systems has not quite been examined and will no doubt increasingly become a focus of attention as the reality of precarious employment practices become more ingrained and its skills development implications realised.

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¹ An ILO Report estimated that nearly 27 million new jobseekers were added to the already high global unemployment figure of almost 171 million prior to the crisis in 2008. The situation is likely to get even more serious. It has been estimated that, “...under current trends, unemployment will be a reality for more than 200 million people in 2012; and if the situation aggravates further, more than 209 million workers may be affected by 2013.” This excludes the possible risk of another recession in advanced economies again negatively affecting employment patterns(Global Employment Trends 2012/International Labour Office-Geneva: ILO, 2012)

Artisanal development without a clear demand: What about the public economy?

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Summary: The South African apprenticeship system has its roots in the British system and the changes that have taken place mirror those of the latter country. The decline in the artisanal development in the country has led to many changes in both the institutions that supply the technical training to the demand of such skills in the economy. The South African government wants to reintroduce artisanal development as it reconfigures the second wave of industrialisation and also grappling with large numbers of unemployed youth in the country. The question that is being asked in this paper is whether or not this new enthusiasm is taking into consideration the circumstances that have changed on the ground or this reintroduction is still defined in the old ways.

Keywords: Apprenticeship system, public economy, industrialisation, Government, supply and demand, employment, technical skills

Introduction

The South African government has embarked on an ambitious initiative to reprioritise the development of artisans in the country. This happens after a steep decline of artisan development from the dizzy heights of the 1960 to 1980s, which also characterised the industrialisation period in the country. The artisan development system has its roots in the British system as it was an outgrowth of the industrial development that occurred in the 1800s (Gamble, 2004). These industrial developments were in the areas of mining, development of harbours and railways as well as engineering workshops in urban areas. These British industries also came to South Africa, and also brought with them the kind of technical education South Africa used not only to develop its artisans but consequently industrialized the country with such skills.

In the past, artisanal development in South Africa was located in both the private and public industries. These industries have always been the backbone of apprenticeship training in the country, providing artisans for their own industry needs as well as a surplus that would also be absorbed in the public economy. When government used its 'State-owned Enterprises' to train artisans, this was during an era of intensive industrialisation of the country, and these large projects created a clear demand for artisans. The new campaign for artisanal development is premised on the anticipated second wave of industrialisation of the country driven by government sponsored infrastructural development. This is where the demand is expected to come. Does the country have the right training and employment arrangements for this to happen?

Looking back at the South African apprenticeship system

The apprenticeship system has traditionally been the main formal method of skills formation for manual workers in the country. The history of this form of training comes from the British system in South Africa, and this is reflected in how the South

African system has differed from the Germanic countries. According to Gospel (1995), this form of skills development in the British system goes back to the guild system and artisanal trades, where the apprentices lived-with the master who agreed to teach him the trade in return for his productive labour. By the mid-nineteenth century, this form of apprenticeship had already been replaced by a live-out and waged arrangement, which was more arms length and done by the larger firms. By the late nineteenth century, legal indentures had died out and formal and binding arrangements between employer and trainee were in place. This history is important because it gives us an insight of how the development of this system took place before it was transferred to South Africa in the first place.

According to Gospel (1995), the apprenticeship system in Britain came under strain at various times in different industries. In the late nineteenth century it was the technological changes that made the long five to seven years training period less necessary. The two world wars and the intervening depression in between brought about upheavals in firms and resulted in the reduction of numbers of the apprentice intake by firms and restructuring of the guild system to include block-release to education institutions.

With growing unemployment of the 1970s onwards, government introduced a series of schemes to combat youth unemployment and the major one was the Youth Training Scheme (YTS). These programmes were shorter in nature and ranged from one to two years (Fuller & Unwin, 2003). The YTS became the mainstay of these vocational programmes at a time when the apprenticeship system was declining and as we speak, this system has almost disappeared from the English education and training system.

The South African system grew with the same features as those of the British system. One of the important features was that training was always in areas where the enterprises needed the skills and used them. Since the possibility for trained artisans not finding employment was extremely low, this became an attractive form of skills development for the employer, the trainees and their families, and the unions. It suited the employers who depended on craft workers for their production methods. It suited the apprentices and their families because this was almost a guaranteed way to access skilled work opportunities. Finally it suited the unions because this became an important part of collective bargaining by unions as well as monitoring investments in skills development by employers.

Unlike England, South Africa is in the upswing to revise the apprenticeship in a major way (Department of Economic Development, 2010). Government has established a clear agenda for skills development agencies, providers and employers in the artisanal development realm. As indicated before, the South African technical education has its roots in the British system. However in South Africa this system also imbibed the racial tones of life that characterised apartheid. In the period since statutory deracialisation (1981), and more recently with rapid deracialisation of technical colleges (since 1994), there are many things that have changed in the world to which the current government wants to reintroduce an apprenticeship system.

First, most students in technical Colleges first try to complete their 12 year high school qualification. Secondly, students study full time before they access the very scarce opportunities. Thirdly, the State Owned Enterprises, which used to be the backbone for this training had closed their training units for a long time now and had to restart. Fourthly, and most importantly, in the past it was government and State Owned enterprises which employed most of the artisans more than the private industries. Although government is driving the new enthusiasm, public sector employment for technical skills has shrunk. (Kraak, 2004; Badroodien & McGrath, 2005). We want

to know if these changed circumstances will still suit the old way of artisanal development.

Methodology

In conducting research for this paper, various methods were used in collecting the data. These included both structured and semi-structured interviews with key role players, focus group discussions with and interrogation of relevant documents. Respondent groups were divided into four major groups

- Private Providers and Public FET College's management staff;
- State Departments;
- State Owned Enterprises and
- Sector Education and Training Authorities (SETAs)

Findings

Because of the funds available through the Skills levy, the reintroduction of apprenticeship training in the country is very active. Firstly, all SETAs view this area of work as a priority and are putting a lot of effort in reorganising and funding training. However, public sector related SETAs are struggling because the training infrastructure has completely disappeared, including technical staff who would train the new apprentices. In the private sector, the status of absorption of artisans for employment after training is not clear yet.

But there is suspicion that companies use the available training funds and are not expanding their employment of the technical skills, judging by unemployment levels of young people in the country¹. The education institutions have changed dramatically, as technical colleges are no longer primarily about block-release of apprentices but full time study and are of a general vocational education in nature. Workshops which were used for practical training are recently being recapitalised, but experienced staff in work processes are in shortage as the country had lost the link between employment and educational training for a while.

The public colleges are taking a very small number of students for the apprenticeship stream and in fewer areas of training as their purpose has long been redirected somewhere else. In the meantime, private sector employers have aggressively developed their own training institutions to close the gap for practical training for their production needs. Therefore, in reintroducing the apprenticeship system, there are many things that have to be reconfigured, but the primary one is about the role of the public sector in the development of artisans in the country.

Concluding remarks

Government is putting its hope on public Colleges to churn out the ambitious numbers of qualified artisans it has been publicly announcing. Yet, we see that the numbers that even the best educational institutions can produce is small. It is possible that there is some spare capacity that can still be filled in the colleges. But what should not be forgotten is that this capacity must be related to the capacity available in the institutions that provide the sandwich training between educational and workplace learning as well as the capacity for employers to absorb apprentices in production spaces. This capacity must be related to the curriculum structure in colleges

¹ Studies in youth unemployment bear testimony to this (Cloete, 2009; Altman, 2011).

also. This is a tricky business and seems to be often overlooked as government continues to beat on supply side institutions like Colleges.

Government is a large employer. It is an employer for the maintenance and running of its large infrastructure in the first place. It is an employer for the development of subsequent infrastructure in the second place. What is lacking in this huge public economy is lack of coordination and consciousness that government therefore has to see itself as not only driving the supply of apprenticeship but also creating the demand in its large economy.

In order to do so, government must understand the training schedules, have meaningful work for apprentices, have mentors or journeymen to teach and supervise apprentices and have capacity to manage the state or SETA allocated grants to support this function. This is not in place in the public sector, except for the State Own Enterprises. There is a need to extend this to as many government sections and institutions that could play this role and provide workplace learning for the many apprentices out there.

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Indonesia's efforts to implement modern apprenticeship

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Summary: Since more than 20 years Indonesia is working on the introduction of apprenticeship into vocational education, and even longer on making learning opportunities at work places usable for vocational learning. These efforts have been little successful for various reasons, among others the missing term for “apprenticeship” in the Indonesian language, insufficient employers’ engagement, too little coordination between ministries, donor-driven vocational education and training development, and the demotivating high legal uncertainty.

Keywords: Indonesia, apprenticeship

Introduction

Indonesia's vocational education system is chiefly school-based and considered as not adequately providing the labour market with sufficiently qualified labour force. Since mid of the 20th century various measures have been taken to improve this situation, including efforts to implement apprenticeship schemes in order to engage the private sector in vocational education and training (VET) provision. This paper gives an overview of the different approaches to introducing apprenticeship schemes used over time in Indonesia and tries to identify the reasons behind their obvious failure.

Methodology

Scarce literature related to the topic (government regulations, few available statistical data, some more or less independent analysis reports) have been analysed to draw up a picture of the developments, driving and inhibiting forces over time. For the time since the beginning of the 1990ies additional information was collected through unstructured interviews with persons involved in the developments. Several distinct periods with respect to the development of VET and apprenticeship were identified and the respective factors collected and analysed.

“Apprenticeship” in this context is understood as a setting of workplace learning in an enterprise combined with classroom teaching in an educational institution with the goal to acquire the competences which are needed for the execution of an occupation or a trade (in line with INAP 2012).

This paper, due to limited space available gives some background information on the Indonesian labour market, highlights the most important of the mentioned periods, and finally summarizes the most prominent problems Indonesia has faced and is still facing in its efforts to implement apprenticeship.

Background information on Indonesia's labour market

In May 2010 Indonesia had a population of more than 237.6 million people with 28.9% younger than 15 and 7.6% older than 64 years. In August 2012, according to official figures, 110.8 million people out of the total workforce of 118.6 million were working, 39.9% of them in the formal sector and 60.1% in the informal sector. The

workforce participation rate (share of inhabitants with age 15 years and older who are working or looking for work) was 67.9%. 35.1% of the working people worked in agriculture, 20.9% in trade, 15.4% in social services, 13.9% in industry, 6.1% in construction, and the remaining 8.6% distributed over the remaining sectors. About 36.4% worked as salaried employees or workers, 11.5% as freelancers, 41.1% as own account workers, and 16.1% as unpaid family workers. About 69% of the working population were working full time (35 hours per week or more), and about 6% were working less than 15 hours per week. According to a World Bank analysis (World Bank 2010: 58), in 2007 only 3% were formal permanent contract employees and another 3% fixed-term contract employees. The official open unemployment rate was 6.14%. This figure, however, must be considered as little significant, considering the 16% unpaid and family workers, who are counted as being employed. 66.9% of those working had completed lower secondary education or less (48.6% primary education or less), and 9% had passed higher than upper secondary education. All these figures are given in official Indonesian statistics (BPS 2012a, BPS 2012b).

Development of vocational education and training

Information in this section, if not otherwise indicated, is based on Dittrich (2012).

During Dutch colonial times, up to the end of the 19th century, formal vocational education and training was virtually only available to inhabitants with European roots (Siregar 2003). During that time, indigenous Indonesians had to rely on traditional apprenticeships for learning a job or occupation. Development of a comprehensive, formal education system started at the beginning of the 20th century, but experienced a sudden setback during Japanese occupation (1940-1942), when Dutch language was banned in education and the Indonesian education system virtually collapsed.

The development of the education system (including vocational education) took only up after Indonesian independence in 1949 under massive financial and technical support from bilateral as well as multilateral donors (various development cooperation agencies, World Bank, ADB, IDB). With respect to vocational education, until the beginning of the 1990ies, the focus was on developing school-based vocational education and training, with curricula developed centrally by the government, and with student's industrial placement periods of varying length. While various curriculum reforms tried to accommodate the need of the economy for skilled workforce, vocational education and training was largely shaped, governed, and provided by the government with virtually no signs of the development of formal apprenticeship schemes.

In terms of governance and organisation there exists a relatively clear demarcation between vocational education (VE) and vocational training (VT). VE is part of the education system under the responsibility of the Ministry of Education, while the Ministry of Manpower is responsible for the National System of Training for Work (Sistem Latihan Kerja Nasional – SISLATERNAS). Currently, this division is based on the Education Act (UU 20/2003) and the Labour Act (UU 13/2003) with a dedicated Government Regulation on the National Training System (PP 31/2006).

Introducing the dual system in the 1990ies

Beginning of the 1990ies the concept of “link and match” was introduced for the whole education system, including vocational education, meaning matching education content with the needs of all stakeholders and linking educational institutions with the same stakeholders. For the vocational track this concept was refined into “pen-

didikan system ganda” (dual education system), inspired by the German dual system of vocational education. Pendidikan sistem ganda (PSG) had 3 tracks (Kohn 1998):

Track 1 concentrated on developing company internships for providing practical experiences and practical learning for 3 to 6 months to vocational students at all levels of vocational education, junior and senior high school as well as higher VE (polytechnics). The development of this track was mainly supported by the World Bank and Australia. Track 2 introduced, as a pilot project, apprentice-like schemes (50% in companies, 50% in vocational school for 3 years) for selected subject areas and for students of 5 selected vocational schools, which cooperated with a larger number of companies. This component enjoyed support mainly from German development cooperation. Track 3 was aimed at developing the infrastructure in terms of technical training centres by using existing resources of the education ministry or of committed industries or both.

In parallel to PSG, under the national training system, there was a possibility for 3 years apprenticeships, here with the companies in the lead, supported by training centres under the ministry of manpower or private training institutions. Also this scheme was supported by German development cooperation.

In terms of volume, PSG track 1 gained momentum within only a few years as table 1 shows. According to reports, the quality of implementation, however, in average, left a lot of room for improvement. The number of apprenticeships under PSG track 2 or SISLATERNAS remained relatively restricted to a few thousands.

For both, PSG and SISLATERNAS, distinct tripartite vocational education and training councils have been implemented at national and regional levels by means of government regulations. However, none of them is currently working effectively.

Table 1: Number of Students participating in PSG track 1.

Model	Number of students			
	1994/1995	1995/1996	1996/1997	1997/1998
No. of voc. students	1.570.000	n.a.	n.a.	n.a.
PSG track 1*	36.700	62.487	125.000	409.734

* Source: Pakpahan 2003, 209)

Apprenticeship in the democratic era

With the fall of the Suharto regime in 1998 including the related change in government personnel and policies, the impacts of the Asian financial crisis, and the fundamental political changes implemented in the course of democratisation and decentralisation, the focus shifted from the implementation of PSG to the development of production in schools in order to compensate for the restricted availability of companies. Many of the main actors in the ministries had changed, the original ideas behind the implementation of the dual system were largely forgotten, and PSG was continued using the startup-concept of PSG track 1, i.e. school-based VET with some elements of industrial internship, something which is far away from the core concept of apprenticeship. Consequently, in the current education act (UU 20/2003) vocational education remains under the responsibility of the ministry of education, and even though it asks for cooperation of the educational sector with the economy, it does not provide the legal framework for implementing apprenticeships.

The legal framework for an apprenticeship system with now maximum duration of 12 months, however, was developed under the provisions of the labour law (UU 13/2003) under the responsibility of the Ministry of Manpower and Transmigration via Ministerial Regulation (PP 31/2006).

Problems in implementing modern apprenticeship

The analysis of the relatively scarce literature and interviews with contemporary witnesses brought up the following issues, which are likely to have inhibited the development of a quality and high volume modern apprenticeship system:

- Everything is overshadowed by a strong, very unfavourable corruption culture which detracts the corporate world from cooperating closely with the government.
- Traditionally no well-defined definitions of vocational qualifications are available, only recently work competency standards (Standard Kompetensi Kerja Nasional Indonesia – SKKNI) have been developed following the Australian approach.
- TVET concept development has been driven mainly by numerous donors with diverging TVET philosophies.
- The tradition of employers' and labour unions' engagement in education and training is weak.
- The economic structure – small formal economy, high informality of the economy and even higher informality of the labour market inhibits the participation of the corporate sector.
- Neither employers nor schools have fully supported or even understood the core concepts of modern apprenticeship. Very likely this is also due to the fact, that Indonesian language does not distinguish apprenticeship and internship.
- Education and training currently is largely perceived as a business under the conditions of offer-demand mismatch. Small offer and high demand in formal education does not support the development of quality.
- The rigid and for employers unfavourable labour law combined with low quality production with largely low demand for qualifications, combined with abundantly available labour force detracts employers from investing in competence development of employees.

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Development of a further education and research network for VET professional pedagogues in Sub-Saharan Africa (VET-Net)

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Summary: Success in the world of business needs a high level of decision-making- and shaping-competence in the profession these days. It is not enough to acquaint the young generation of trainees with the new demands. Vocational teachers and university lecturers, who impart vocational education at the university, and educating enterprises have to contribute to working on a new conception which focuses on decision-making- and shaping-competence. This is best possible in a collective network. For this purpose, a further education and research network for VET professional pedagogues will be established and extended towards Sub-Sahara Africa together with the African project partners. The involved partners are encouraged to develop modern further education centres and they are supported with performing and evaluating further education-events in the network. The R&D-projects with reference to further development of vocational education should be initiated, implemented and evaluated jointly.

Keywords: Further education research network, shaping and competence learning

Introduction

The University of Rostock / Technical Education (UR / TB) has been collaborating with the Pedagogical University of Maputo / ESTEC (Escola Superior Technica da Universidade Pedagogica) since 2006. The collaboration was primarily focused on the projects LEFOMO and LEKOM under the German Academic Exchange Service (DAAD) in terms of follow-up support and retention of former students (alumni)². One result was the establishment of a further education and research network for professional pedagogues in Mozambique³. On site, the (technical) vocational training and relevant research / development (R&D) tasks were supported at the central location in Maputo, which closely cooperated with the decentralized branches in Nampula, Beira-Chimoio. Vocational training scientists of UR / TB have trained and supported scientists of the ESTEC and coordinators for further education and/or R&D scouts at the branch locations. During workshops which also took place at the branch locations, TVET teachers were also given the opportunity for further education (the only

¹ VET-Net: Development of an Education and Research Network for VET Professional Pedagogues in Sub-Saharan Africa (VET-Net), Project Duration: 01.05.2012 to 30.04.2015. Team members: Friedhelm Eicker, Gesine Haseloff, Brigida Singo, Dinis da Costa, Ewnetu Hailu Tamene, Esayas Alemayehu, Peliwe Lolwana, Mary Madileng

² LEFOMO: Teacher Education and Training in Mozambique; LEKOM: Teaching and Development Expertise for TVET Teachers in Mozambique.

³ Professional Pedagogues means scientists and teaching staff who teach and research at universities, schools and other vocational education and training institutions. The global term is Vocational Education and Training (VET). TVET means technical vocational education and training. The previous project activities were more or less limited to TVET, in the future general VET activities are being offered.

systematic TVET further education program in Mozambique to date). As a result, first (small) educationally- and technically-oriented R&D projects (in professional science) could be designed and partly implemented and evaluated by the ESTEC scientists in cooperation with TVET teachers and (few) partners from business companies.

The two projects LEFOMO and LEKOM have presented first concrete results: regarding the shaping competency of the participating scientists and TVET teachers, regarding their work process-related and task-related teaching and regarding the – networked – collaboration beyond work and teaching locations and many more. Jointly, the participants identified regional and/or Mozambican requirements in the further development of vocational training and the description of potential projects. Specifically, the coordinators and scouts made their first steps in the envisaged further education and research / development work within the network. There is one case of an alumni scout who successfully completed a PhD program at the UR/TB¹. Thanks to the established network, the vision to make vocational training in Mozambique a noteworthy innovation factor has made its first – small – progress. The VET-Net project is now based on the assumption that the positive experience made in the further qualification and R&D network in Mozambique can also be used in other countries of Sub-Saharan Africa and, thus, for developing a network which is even more powerful in the region. Related efforts are intended to be made in South Africa and Ethiopia².

Methodology

The intended expansion resp. establishment of the further education and research network for vocational teachers is associated with various knowledge and shaping interests. On the one hand it is important here to reflect – theoretically – the insights which have been gained in Mozambique and other networks so far, particularly experienced barriers and opportunities relevant for establishing vocational training networks, with particular regard to the specific conditions in Mozambique as well as the different situations in South Africa and Ethiopia. The underlying intention is to establish, more than hitherto, efficient networked education and R&D in the vocational training field via the network.

It is to be expected that the project partners from Mozambique as well as from South Africa and Ethiopia implement these network activities more and more autonomously. The network players shall increasingly use the network for planning, implementing and evaluating modern further education measures themselves and – jointly – initiate, implement and evaluate (small) relevant R&D projects. For this purpose, the network infrastructure available in Mozambique must be further expanded; while in South Africa and Ethiopia the establishment of related networks must be started – and the networks must be interlinked. The African network players have to gain the relevant competencies.

Consequently, expertise and shaping interests determine the methodological approach in the VET-Net project. This approach can be put into the context of an action research process or shaping-oriented vocational training research process, started even before the beginning of the project and continued even after project completion.

¹ See Mucauque, F. (2010): Technical teacher training in Mozambique. Vocational Training in Mozambique under consideration of the technical teaching program at the Pedagogical University of Maputo (in German), Saarbrücken.

² Network activities, further education and R&D naturally require further development and consolidation in Mozambique; in Ethiopia, the major reasons for starting the activities were the long-term experience with German vocational training, and in South Africa, the different economic structure, the initiated R&D efforts in vocational training and the proximity to Mozambique.

Together with the scientists from Rostock, the African network players reflect the – more or less given or even still not given - networking practice in relation to well-known positions, as currently taken in vocational training studies - and aspire for an improved networking practice on this basis. This takes place on the shaping level, by establishing or expanding the existing network, as well as on the content level, by considering key points of action / shaping research in network shaping and even the expected further education of vocational training teachers and in planned relevant (small) R&D projects.

It all depends on the structure of the networks to be established, the guiding idea for the aspired teaching / learning and the R&D and the addressed contents! Here, a suitable structure does not necessarily constitute an appropriate guiding principle (teaching and acquisition of design competency?!) and acceptable content, too. All this needs hard work. Here, not only the African but also the German partners may acquire sustainably effecting action and shaping competency. It is to be expected that the network will expand even beyond Mozambique and South Africa or Ethiopia. Expressions of interest have already arrived from Namibia, Tanzania and Angola.

Results

To enable and advance the planned expansion of the Mozambique network towards South Africa and Ethiopia (and even third countries in Sub-Sahara Africa later, if applicable), “Fact finding tours” were implemented in both countries. The aim was reached to explore – even beyond the already started communication with the Universities of Witwatersrand and Jimma – the relevance and acceptance of the intended network and related further education and R&D activities. In South Africa the Witwatersrand University / School of Education / Education Policy Unit (Wits) in Johannesburg is going to take over the central key role in South Africa. Wits is cooperating with “branches” (colleges), temporarily in Port Elizabeth and near Kapstadt¹.

In Ethiopia, the University of Jimma / Institute of Technology (UJ) is becoming a centre of further education and R&D for vocational teachers and, for the time being, cooperating with surrounding colleges². Project managers were appointed for Wits as well as for UJ; a research coordinator and R&D scout was appointed at UJ³. First – basic – workshops were planned and implemented in South Africa and Ethiopia, with project partners from third countries being involved, too.

In Mozambique, workshops on the topics „Vocational training or action research, network building, action / shaping related curriculum development, work(process) oriented teaching and learning, methodology and didactics of competency enhancing – learning field oriented – lessons etc.“⁴ took place – in the central Maputo as well as in the decentralized places Nampula and Beira-Chimoio. Even in South Africa, namely in Johannesburg, Cape Town and Port Elizabeth, and in Ethiopia, in Jimma

¹ Initial talks and events took mainly place at the Eastcape Midlands College in Port Elizabeth and at the West Coast FET College in Malmesbury.

² This will initially include five colleges in Southwest Ethiopia, a. o. the Jimma FET College; later, the activities shall be extended, e. g. by involving the Tegnareid TVET College in Addis Abeba and the Adama Science & Technology University / Further Training Institute.

³ Meanwhile, Ewnetu Hailu Tamene started, related to its coordination and R&D tasks, a dissertation project at the UR / TB, working title „ Establishment of a further education and research network in Jimma / Ethiopia with particular consideration of the UJ“.

⁴ Regarding the characteristics of a “modern” vocational training and a related R&D see, for instance, Eicker, F. (2006): Teaching and studying technology. Notes on the basic teaching / studying methods in modern Engineering Education. In: Journal Industry and Higher Education, Volume 20, Number 6, London 2006, pp 421-432.

and Addis Abeba, first workshops were implemented. Now, additional tasks will be addressed in further workshops.

Conclusion

To continue the successful implementation of the project objective, i.e. extend and use the R&D network of vocational teachers, the following tasks are essential resp. following questions have to be answered:

- It has to be clarified if the profession science orientation and the overall purpose the VET-Net project is based on, i.e. to establish a shaping and competency oriented and networked further education for vocational teachers and respective R&D, gets the needed acceptance¹.
- The available concept on extending and establishing the further education and R&D networks and their interlinking has to be enhanced according to the regional and country specific opportunities; in particular, it has to be clarified if the intended and – in first steps – partly already established co-operation centres shall and can become a true focal point of the aspired network activities.
- Regarding South Africa, it makes sense to connect the VET-Net activities with current „related“ project activities; in particular, the Manufacturing, Engineering and Related Services Sector Education and Training Authority (MerSETA) is recommended to make use of the – country-wide – aspired competency and shaping oriented further education offers and, thus, improve the conditions for a success of the cooperation project with the University of Bremen / TVET Research Group (I:BB). The German Society for International Cooperation (GIZ) is also advised to consider the VET-Net project activities in the currently prepared extensive program on vocation education enhancement in South Africa.
- In Mozambique, the declared intention of the Ministry of Education is supported, to expand the cooperation centres for further education (and R&D) in Beira-Chimoio and Nampula established in the VET-Net project in a first step within the course of a planned, extensive GIZ project. In addition, support is provided regarding a real progress of the establishment of an education and further education centre for vocational educators, oriented to the main objective of the VET-Net project in the field of education and further education of vocational school teachers at the UP in Maputo, planned by the UP and the University of Magdeburg / Institute of Vocational and Business Pedagogy / Chair for Didactics of technical subjects.
- Under the African and particularly the country-specific circumstances, competency oriented and shaping oriented as well as networked learning and teaching have to be displayed in detail – even beyond the existing experiences from Rostock and Mozambique. The further education and R&D network, the networks in Mozambique, South Africa and Ethiopia and the network in total, must be implemented further. In particular, competency and shaping oriented teaching / learning projects have to be planned, implemented and evaluated.

¹ It has to be clear that no or at least no „pure“ scientific orientation and no related teaching and learning are aspired here, as well as no university education and R&D that remains more or less tied to the academic sphere.

Globalising the apprenticeship concept: How far can apprenticeship systems be compared across countries and what can be gained?

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Summary: The paper describes a recent research project which analysed ten national apprenticeship systems to draw out a model framework which was used to suggest options for the development of the Indian apprenticeship system. The paper discusses the successes and challenges of this model of analysing apprenticeship systems, including the advantages and disadvantages of bringing findings from other countries to inform national developments. It also discusses the challenges posed when working with a team of researchers across many national cultures to compare and contrast apprenticeship systems.

Keywords: Apprenticeship, VET policy, international comparisons.

Introduction

Apprenticeship systems are often viewed as pivotal to the development of a skilled workforce. The combination of on and off the job learning together with a period of extended practice under the gaze of expert workers, that is characteristic of apprenticeships, is believed to provide an ideal environment for the development of practitioners for occupations. Internationally, many countries are involved in examining their apprenticeship systems and are thinking about ways in which they can be updated and expanded for economic diversification. In particular the impact of the Global Financial Crisis has raised the profile of apprenticeship as it is seen as a way of combating youth unemployment (eg ILO, Nov 2012).

It is generally accepted that experiences of other countries, both in the developed and the developing world, have indicated that apprenticeship systems cannot be transplanted among countries. Apprenticeship varies considerably among countries and many aspects are culturally, socially, politically and economically specific. Thus one cannot transplant, for example, the German or Australian system to another country and expect it to operate as it did in the relevant homeland. There is the added complication that apprenticeship systems are often closely intertwined with industrial relations systems. However, it is possible that key features of countries' systems can be identified and sensitively adapted and developed in other countries. This paper describes a method for undertaking this task, and reports on the findings of the 2012 project 'Possible futures for the Indian apprenticeship system' funded by the International Labour Organization (ILO) and the World Bank.

¹ **Acknowledgements:** The authors would like to thank the team of international researchers who contributed country case studies and commented on drafts of the project reports. The team consisted of: Linda Miller, AbouBakr Abdeen Badawi, M'hamed Dif, Andreas Saniter, Ludger Deitmer, Bibhuti Roy, Nicolas Serriere, Salim Akoojee, Özlem Ünlühisarcıklı, Robert Lerman.

The paper reports on and analyses how experiences of other countries were used to provide options for the development of the Indian apprenticeship system, which is currently considerably undersized for its economy and is also focused heavily on mid-twentieth-century occupations (Ministry of Labour and Employment, 2011; ILO and OECD, 2011). Currently India has only about 300,000 apprentices compared with a labour force of nearly 500 million people. This is a proportion of less than 0.01% of the workforce, or 0.1% of the formal workforce, as around 90% of India's economy is informal. This compares with a proportion of 3.7% in Australia or Germany.

Methodology

Eleven individual country case studies (including one of India itself), based on reports and literature, were produced by a team of national experts, and subjected to a cross-case analysis. The case studies included developed and developing countries. The use of national experts was judged to be more effective than having people write on other countries' systems. The country case studies took into account agreed international benchmarks for describing, analysing and evaluating apprenticeships, based on the recently-released memorandum by INAP, the International Network on Innovative Apprenticeship (INAP Commission, 2012) and the framework developed for the apprenticeship chapter in the International Encyclopedia of Education (Smith, 2010). Writers were required to use a structured approach in their case study reports. They were also asked to identify major current issues in their countries, and recent policy initiatives that had proved helpful and unhelpful. The case study writers were requested to seek expert in-country feedback on their case studies, from an academic at another institution and from a policy official of reasonably high rank, and to incorporate this feedback. This goal was achieved in seven of the eleven cases.

A cross-case analysis was undertaken which covered both systemic issues (ie relating to policy and national structures) and 'the life cycle of the apprentice' (ie cycle through which an apprentice and his/her employer moves, from recruitment, employment and training through to completion) (Smith, Comyn, Brennan Kemmis & Smith, 2009). It was also informed by the cross-case analysis in the European Commission report on apprenticeship supply (European Commission, 2012). The data were then further reduced to identify the features of a model apprenticeship system, and proposed measures of success and associated challenges.

The features were then calibrated against the Indian system in the following way. Firstly, a summary was made of the key problems identified in major Indian government reports and other documents (such as, Planning Commission, 2009, and Akhilesh, 2010) and in four telephone interviews which the researchers carried out with key stakeholders in the Indian system. These problems were matched against the key features from the international analysis. In developing the options, careful note was taken of the country experts' views of policy developments in their countries that had proved helpful and unhelpful. Thirteen options were then suggested for improvement of the Indian system, which were modified following consultation with ILO and World Bank staff in India.

Finally the options were presented at a Technical Consultation in Delhi in September 2012 which was chaired by a senior official of the Ministry of Labour and Employment and attended by 80 national and regional stakeholders such as employer associations, union officials, NGOs, and training providers. The day-long workshop included time spent in small groups which provided detailed feedback on different groups of options. The feedback was incorporated into a final paper (Smith & Brennan Kemmis, 2013).

Results

Findings and principles for a model apprenticeship system

A framework for a model apprenticeship system was developed which drew together identified good practice from the eleven case study countries. A number of underlying principles were suggested for a model apprenticeship system. These were gathered under the following headings: Occupational coverage, Participation, National government structures, Stakeholders, Quality systems – for training providers and for employers, Simplification, Incentives, Provisions for the apprentice, Support for employers and apprentices, and Expansion strategies and risks of these.

Also, a set of potential measures of success were suggested under four headings: engagement, quality, public policy and outcomes. For each measure of success a number of challenges were identified, drawn from the country case study analysis.

Applying the model to the Indian system

The principles were used to develop a set of thirteen options for the Indian system as outlined in the Methodology section. They were gathered under four major headings as shown below (Table 1).

Table 1: Proposed options for the Indian system, by theme

Themes	Possible Options	
Simplify access	2	Replace compulsory participation requirements with voluntary registration
	4	Reduce the regulatory burden on employers
	11	Introduce new third parties to the apprenticeship system to help manage ebbs and flows in the economy and provide more support for some groups of apprentices and employers
Improve training quality	3	Introduce off-the-job training throughout the period of an apprenticeship
	9	Upgrade quality and recognition of apprentice certification
	10	Improve workplace curriculum
	12	Improve skills and expertise of those delivering training
Harmonise the system	13	Greater involvement of stakeholders in system
	7	Simplify and harmonise the system
	8	Increase 'market currency' of apprentice qualifications
Increase participation	1	Cover more of the economy
	5	Provide financial incentives to participants, enterprises and training providers
	6	Introduce non-financial strategies to increase participation among more people

For each option, suggestions were made for major change and for minor change that would contribute to the proposed option. Options 1,4,5,7,8,9,10 and 13 gained full or substantial support at the Technical Consultation, with the other options gaining only limited or no support. Finally, in the options paper, two specific issues of particular importance to India were discussed: firstly the potential consequences of rapid expansion of the Indian apprenticeship system from its current small base, and sec-

only the issue of how to address informal apprenticeships, which are numerous in India as in many other developing countries.

Analysis and conclusions

The process of country experts writing case studies about their own countries appeared to elicit good results on the whole, with the reports informed by deep knowledge of the individual countries. A large international team of this nature presented management challenges, as might be expected. It would have been useful to have sought further input from Indian contacts about organising headings for the case studies, as information needed to be added about a few issues later on. The use of a structured format was generally successful but in some cases the writers reported that their systems did not fall readily under the provided headings. Some writers reported finding difficulty accessing experts to provide feedback while others found this readily. The cross-case analysis was complex and time-consuming but provided a sound basis for analysis of the Indian system with the options being recognised by stakeholders as applicable to the Indian system. It is suggested that the features of the model apprenticeship system could be considered by any national government, in conjunction with education and industry representatives, seeking to review or reform its apprenticeship system, or alternatively the process could be modified to address particular apprenticeship or other vocational education and training features as required. The lessons learned about the particular research process would assist in other projects.

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Progress with the English apprenticeship¹

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Summary: How successful has the English Apprenticeship renaissance been? Has a strong and successful Apprenticeship paradigm been achieved without a defined structural role for social partners? In conference topic 1, the following conditions are understandably laid out as essential precursors to the establishment of a successful Apprenticeship programme “*Successful apprenticeships require stable basic conditions such as, for example, well-organized employer organisations and trade unions, the acceptance of both sides of industry as well as close relationships between schools and firms.*” This paper challenges that assumption.

Keywords: Employer satisfaction, NAS, training providers, England.

Introduction

Apprenticeships are now more popular in England than ever before:

- 450,000 people started an Apprenticeship in England
- Almost 75% of these will finish and achieve their completion Certificate
- Apprenticeships are now available in 1,400 job roles and occupations up to and including ‘degree’ level

The evolving English Apprenticeship model.

During the years between 1970 and 1990 there was a general decline in the importance and volume of Apprentices in England. In the 1990’s as youth unemployment remained stubbornly high the then government created modern Apprenticeships as a new reformed Apprenticeship model. This was, from the start, a state sponsored initiative as the mainly post-industrial and rapidly changing employer base of England was not cohesive enough to nurture the establishment of wide scale school to work transition programmes.

Apprenticeship in the UK has, since the late 1970s, also been resurrected as an instrument of government policy. Fuller, Unwin 2009

The modern Apprenticeship initiative successfully laid the foundations for today’s Apprenticeship programme but never realised its full potential in terms of programme size. However by the turn of the new millennium the potential of a large scale Apprenticeships programme was becoming increasingly appealing once again. The infrastructure of the previous Apprenticeship heyday: Industry Training Boards (ITB), Group Training Associations (GTA) and Technical Schools had largely disappeared².

ITBs were set up, setting standards of training and syllabuses; devising tests to be taken by apprentices and instructors; running training courses in training centres. The levy-grant mechanism, whereby all firms above a certain size paid a levy while those providing training received grants, ,, this mechanism collapsed in the early 1970s, largely due to opposition from small firms, Brockman, Clarke, Winch 2010

¹ Please note this paper is submitted as a personal perspective and is not an official government publication, all opinions contained with the paper are therefore the authors own and should not be considered as organisationally representative.

² Some GTAs still exist as do Sectoral Levies

In order to facilitate the rapid growth that was sought, the state had to find an intermediary to support the creation of a new Apprenticeship platform and to connect potential new Apprentices and employers.

The role of training providers

What the state did have at their disposal was a network of much improved Vocational Training providers and Further Education Colleges (henceforth referred to collectively as 'training providers'). A network that had been increasingly encouraged to deliver 'work-based' learning and to conduct the assessment of National Vocational Qualifications (NVQs) for young people and employed adults¹. These 1,000 plus training providers had been the subject of substantial investment and were delivering higher quality learning, as evidenced through improving success rates. The use of generalist and specialist training providers to build Apprenticeship capacity had some obvious advantages, it meant that the state had a ready made funding system and contracting system in place, Apprenticeships could be based on existing qualifications that were already proven and available and that Employers would be able to access Apprenticeship training and support from the organisations which already offered them other training and qualification programmes.

Thus training providers became the conduit for involving employers in Apprenticeships and a series of other proxies were created to ensure that the employer's interests were built into the Apprenticeship system: Apprenticeship contents were reviewed and approved by Sector Skills Councils, Employer (and worker) representative bodies were invited to join Apprenticeship governance boards and advise on Apprenticeship policy and an Apprenticeship Ambassadors network was created.

Investigating the depth employer ownership

Research methodology

We might safely assume that those relatively few employers that maintained Apprenticeship programmes during the period between the demise of the old Apprenticeship infrastructure and the creation of a new one, felt that they owned them. But what do new Apprenticeship employers feel?

2011 results available now – below 2012 results available for the INAP '13 conference and post publication

Methods and research design

A total of 4,000 employers were interviewed in December 2011 and another 4,000 in 2012 by expert external research companies. Results are published.

Employer survey findings

The vast majority of employers (94%) indicated that their Apprentices received training delivered by a training provider. This reflects the core role that providers play and the fact that there is currently a relatively limited capacity amongst English employers to deliver Apprenticeships unaided. However and encouragingly, employers themselves are heavily involved in delivering some elements of the Apprenticeship: with three-quarters (76%) providing some training as part of the Apprenticeship.

Overall, we can say that employers were generally positive about their level of involvement in and ability to select an Apprenticeship framework (course) relevant to their needs. With 77% reporting that they were satisfied, compared with only 6% dis-

¹ In 2006 the Train to Gain programme was introduced as a wide-scale Government sponsored employee training and accreditation programme. One of the main impacts of Train to Gain was to move the centre of adult Vocational education delivery from the classroom to the workplace.

satisfied. Sometimes employers find that there is nothing that meets their exact job role but they should always be involved in making the choice about what Apprenticeship their staff undertake.

Potentially more concerning was the fact that almost a third (31%) of employers felt that they were not involved in decisions about the training of their Apprentices either at the design stage or during its delivery, however it is not clear if this is a conscious or unconscious decision it appears that most employers contributed to the decision as to which Apprenticeship is most suitable for their employees but that a smaller number then helped define the exact contents of that Apprenticeship.

Similarly in the area of recruitment and employment the majority that had recruited individuals to Apprenticeships were satisfied with the quality of applicants (75%), and the recruitment process itself. Employers with 100 or more staff were more positive than average, perhaps reflecting the fact that larger employers are better resourced to manage the recruitment process.

Overall employers that had not had Apprentices before were more satisfied with the experience than they had anticipated and saw greater benefits in areas such as productivity and morale than anticipated.

Table 1: Anticipated and reported benefits

Anticipated benefits	Reported benefits
45% to improve or maintain skills	69% improved staff morale
32% to train people as employer wants or in their ways	67% improved product or service quality
14% improve productivity	72% improved productivity
10% social responsibility	66% improved image in sector
9% create diverse workforce	65% improved retention

We should note that the levels of benefit experienced are generally significantly higher than anticipated. And that there were some totally unexpected benefits such as the positive impact that Apprenticeships have had on wider staff morale and on the company’s image.

Conclusion

During the period of most rapid Apprenticeship expansion, 2009-12, there were several notable instances of poor quality Apprenticeship provision that rightly attracted media and policy maker’s attention. These led to a period of sustained introspection and a number of Apprenticeships reviews. Although these reviews were very different in their nature their common findings were firstly that there is a potential danger of brand ‘over-stretch’ in allowing Apprenticeships to be ‘all age, all sector and all level’ these issues was covered in my original 2011 INAP paper¹ and has led to greater consistency in Apprenticeships, such as the introduction of minimum durations.

The second risk that providers would manage the system so that Apprenticeship programmes are designed around what is beneficial for training providers as provid-

¹ Since 2011 there has been further harmonisation of the apprenticeship programme with the introduction in August 2012 of minimum 1 year durations, a greater focus on English and Maths as core elements and restriction of Apprenticeship to new entrants to the workplace and employees with new or changed job roles

ers rather than what employers and Apprentices really need was perhaps the more fundamental. Evidence from the 2011 survey is that employers do have a significant amount of involvement in their programmes and that they clearly see benefits from them.

There is a significant amount of Apprenticeships that are predominately provider, as opposed to employer controlled though. In particular there are certain elements of the Apprenticeship programme that employers do not yet have enough ownership of, such as the detail of Apprenticeship programme design and in conducting the Apprentice's final assessment.

These are areas that we will be working with employers, training providers and stakeholders on over the next few years in order that we might more fully realise the potential of the English Apprenticeship programme.

Whether there is enough time and momentum to evolve and grow employer ownership this way is unclear – and the question remains, if we reduce the role of providers will employers fill the space that is left behind?

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Success factors of transition in Austria

“Possible considerations and consequences for countries all over the world”

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Summary: Youth unemployment in Austria shows a best performing situation in Europe and OECD. Some features of Austrian education, labour market and transition system could be reasons for this performance, e.g. high percentage of VET students at upper secondary, well equipped and regulated apprenticeship system including regulations for “Inclusive VET”, and continuous willingness of enterprises to give young people chance for access to VET in companies. This paper reflects these aspects, based on long-term-evaluation concerning a reform-process on specific transition points. Key outcomes shows that practical orientated preparation for students combined with in-company practice and general education in occupation-related subjects leads to effective transition from school to VET into the world of work even in times of crises. Theses and consequences for effective orientation and preparation of young people in VET, for work-based education and youth employment policies are expressed also for countries with different systems of VET and work-based learning.

Keywords: VET, work-based learning, pre-vocational-school, successful transition

Introduction

In times of worldwide crisis the situation of Youth unemployment in Austria shows a best performing situation in European Union as well as in OECD. Some features of the Austrian education, labour market and transition system could be the reason for this performance. The dual apprenticeship system is well equipped and regulated by law, also including regulations for “Inclusive VET” for young people with special needs. Special considerations of the OECD concerning the Austrian education and VET system address the early first “tracking” in the age of ten, with strong implications on later decisions for educational and vocational pathways, and the “double transition” (Hoeckel 2010)

Research questions und research approach

The main issues of the following topics address the transition between compulsory school and dual VET education, as a condition for further steps from VET to world of work, based on long-term evaluations concerning the transition management in pre-vocational-school (“Polytechnische Schule”) at the 9th grade and dual apprenticeship training from 1997 – 2010 (Härtel & Kämmerer 1998 - 2010). Additional some aspects of the performance during apprenticeship training including the question of Inclusive VET, drop out and success rates were addressed, based on regional and national surveys and comparisons. (Steiner 2011)

Background of the project

The background of the long-term evaluation of the prevocational school (“Polytechnische Schule - PTS”) in Austria was a reform process that became effective in 1997.

The PTS is a one year school-type, covers the last year of compulsory school – 9th grade at a crucial point of transition between compulsory school time and further education and training, mainly for students who are interested on pathways in dual education / apprenticeship.

The main elements of the reform were

- To strengthen the element of career guidance, vocational preparation, and occupational basic education and training
- To invest into equipment in school, workshops, tools, machines etc. for more practical education and training related to professional development in school
- To improve the competences and qualifications of teachers in handicraft and other professional areas for better occupational training in school
- To intensify the contact and co-operation with the local and regional economy and enterprises.

This reform process was the background for the interest of the Austrian Federal Ministry for Education, to evaluate the effects of the new school programme for the transition process for students.

Methodology

The concept of the evaluation methodology was orientated at the main aims of the reform process, related to the core tasks of the school-type PTS, as there mainly is the orientation, preparation of students for smooth and successful transition processes combined with both basic occupational training and general education. The instrument was a clear arranged questionnaire to be filled in by teachers who are responsible for transitions processes at school, under supervision of the headmaster. The point of time for the survey was in each evaluation process the very end of the school year.

The questionnaire of each evaluation contains different categories of questions

- Quantitative questions, to formal data of school (number of students, male, female)
- Quantitative questions related to the transition processes, e.g. concerning the number of students who have a fixed placement for apprenticeship at the end of the school year and how many students were successful to find an apprenticeship placement according to their wishes and perspectives
- Qualitative questions related to the transition process, e.g. how many students seems to be not successful in a further applying process for apprenticeship
- Qualitative questions related to the school programme and the pedagogical approach, e.g. which pedagogical measure has the most effective impact
- And open questions for other topics, e.g. what are the most important problems for student to find a transition pathway after compulsory school.

Additional studies were done by the Institute for Research on Qualifications and Training of the Austrian Economy (Stampfl et.al. 2003 / Schneeberger et. al 2004).

The sample in the one study covered 4000 apprentices in selected occupations, in the other study 562 enterprises educating the 4 most important occupations.

Comparing the results of the two studies with the main outcomes of the long-term-evaluation, it shows high significant relations, so the legitimacy and validity of the methodology used for the long-term evaluation seem strongly confirmed.

Results

The long-term survey concerning the effectiveness of the pre-vocational year from the year 1998 until 2010 shows essential features of one of the Austrian elements of successful transition processes from initial education to VET and world of work.

The main results are shown in the next Figure 1. The questions behind were: “How many students have a fix placement for apprenticeship after end of school”? (“fixed placement”), “How many students have good expectations for a placement”? (“good chances”), “How many students will continue school education”? (“further school”? “How many students have low chances”? (“low chances”).

Figure 1: Results of the survey regarding categories for transition

years / items	1998	2000	2002	2004	2006	2008	2010
fixed placement	69,73%	71,48%	66,87%	67,31%	69,16%	72,18%	72,42%
good chances	12,21%	11,78%	13,93%	12,01%	12,02%	9,68%	9,69%
further school	5,91%	7,75%	8,44%	8,84%	8,65%	10,20%	9,49%
transition forecast	87,85%	91,01%	89,24%	88,16%	89,83%	92,06%	91,60%
low chances	12,15%	8,99%	10,76%	11,84%	10,17%	7,94%	8,40%
in total	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%

These results show a clear effect of the pedagogical concept of the school type and transition development during a period over 12 years:

- Starting from a good performance 1998 with 87,85% of transition forecast the pre-vocational school could increase the effectiveness of transition processes during a long-term period till 2010.
- Even in times of worldwide economic crisis since 2008 the PTS could continue a high performance in transition of more than 90%
- Respecting the fact, that the PTS is the school type with the most diverse population of students the performance of this school type gives a huge contribution to the good Austrian performance of transition.

Developments after transition from apprenticeship to further work

Some recent regional surveys show the efficiency of occupational VET pathways, e.g. a survey three years after finishing apprenticeship education in the province Salzburg (Dornmayr & Schönherr 2012) – only 1% of the former apprenticeship are unemployed, 96% are employed at qualified skill worker level, about 20% in leading functions, 91% are satisfied with their profession, most of them – 87% - would make again the same decision for occupation.

This result of a survey by questioning former apprentices is confirmed by comparative regional statistical reports between Austrian provinces and other European regions (Steiner 2011). The visible developments in the Austrian youth labour market parallel to the reforms in pre-vocational education allow the thesis, that there exists a strong relation between these elements.

Findings

Key findings of transition research address the following aspects:

- A strong relationship exists between well organised preparation in compulsory school before starting apprenticeship training and a smooth transition

processes from initial education to VET and transition to further world of work.

- The most effective elements of preparation process are: *first*: clear personal reflection of talents, interests and perspectives; *second*: developing self-confidence combined with career management skills; *third*: strong focus on collaboration between schools, enterprises and economy
- These *premises* causes the fact, proved by the long-term survey, that even under difficult conditions high performance of transition processes between school, VET and World of Work could be possible.
- A special feature – this could be a *promise* – is the result of long-term-surveys concerning transition processes in times of deep- and far-reaching crisis 2008 and following.
- Quite different situations – this could be a *pitfall* - are evident at transition between apprenticeship training and following phases in the labour market,
- The main key findings in this area are relevant in principle for transition processes in every country, but must be analysed and interpreted concerning the specific conditions and frameworks.
- It may be interesting for an international research community, to find a new, innovative and recent approach to compare relevant aspects concerning the outcomes of the Austrian long-term-survey, respecting the worldwide crisis in youth employment, in a transnational comparative survey concerning all phases of transition from initial education to VET and world of work.

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Introducing an apprenticeship pathway in Swedish VET – Chances and difficulties in workplace learning

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Summary: This paper explores challenges when introducing an Apprenticeship Education pathway in the Swedish upper secondary VET. It draws on research on a national pilot project on Apprenticeship Education funded by the Swedish National Agency for Education. The paper emphasizes on the workplace learning and illuminates some challenges that were recognized during the pilot project. One main challenge was finding workplaces that wanted to participate in the apprenticeship training. Another concerned the production of the participating workplaces which was commonly not broad enough to give a wide VET education according to the curriculum requirements. A third main challenge was the supervision and guiding structures at the workplaces. The study concludes that there were fundamental differences in the quality of the Apprenticeship Education. It is also concluded that Apprenticeship Education has great potentials if accessible resources are provided – in schools as well as at workplaces.

Keywords: Sweden, apprenticeship, workplace learning, vocational education

Introduction

In Sweden a liberal-conservative government came into office in 2006 and since then major restructurings in the whole educational system have been initiated. In autumn 2011, a vast reform of the Swedish upper secondary VET education was accomplished. Key arguments that underpinned the reform were to improve the throughput, raise the quality of the training and enhance students' employability. In line with these arguments, a new VET pathway "Apprenticeship Education" was introduced as an option to school-based VET programmes – an alternative but equal pathway to the three year school based VET programmes. The Swedish apprenticeship education differs from models of apprenticeship in countries such as Austria, Denmark and Germany. One fundamental difference is that Swedish upper secondary apprentices are commonly not employed and therefore students, not employees (Olofsson 2005).

There are some important regulations of the apprenticeship pathway that was introduced: more than 50 per cent of the curriculum content had to be learned at workplaces and regulated by a contract for each apprentice (ordinance SFS 2007:1349). According to Swedish steering documents, teachers were given the responsibility to follow-up and mark the apprentices' vocational knowledge. Teachers were also obliged to continuously inform students about their progress and trilateral talks between teacher, apprentice and supervisor were prescribed in order to provide teachers with the information needed.

Before launching the reform 2011 a three years long national pilot project with upper secondary apprenticeship education was initiated. This paper is based on a follow-up study of the piloting funded by the Swedish National Agency for Education and conducted 2009-2011 (Berglund & Lindberg 2012). The study focused on pedagogical aspects and the purpose was to illuminate challenges when initiating the new

apprenticeship pathway. This paper emphasizes on workplace learning and illuminates some difficulties and challenges that was recognized during the pilot project.

Methods and research design

Data contains interviews and informal conversations with teachers involved in apprenticeship as well as apprentices and workplace supervisors, local documents of various kinds, digital photos from schools and workplaces and a questionnaire "A day at work" to 136 apprentices. In total, the audio-recorded data of 100 hours represent 40 visits to workplaces and 54 interviews in 11 schools from geographically various areas. Data were produced during two separate periods, from December 2009 to April 2010 and from January to May 2011.

Three programmes out of 14 VET-programmes were selected, the Construction Programme, the Health Care Programme and the Business and Administration Programme. These programmes recruit different gender and have different historical relation to workplace learning. The Construction programme mainly recruits male students, whereas the Health Care programme mainly recruits female students, and the Business and Administration programme attracts both male (app. 35 per cent) and female students. Further, these three vocational areas have different relations to and traditions for workplace learning. The construction sector has a long tradition of apprenticeship (Berglund 2009). Hospitals and other caring institutions have a long history of practice as part of VET, although not in the form of apprenticeship (Lagström 2012). Employers within Business and Administration in their turn also do not have experiences of apprenticeship still are used to on-the-job training for short term seasonal workers.

Results

The ordinance prescribes that at least 50 per cent of the education should be carried out at workplaces, but the follow-up study showed that about 80 per cent of the content in vocational subjects was supposed to be learned at workplaces while all general subjects were school-based. Consequently what the workplaces could offer determined what kind of vocational knowledge that was made accessible for apprentices. The following result shows main difficulties in the pilot project according to apprentices' possibilities to develop vocational knowledge at workplaces (Berglund & Lindberg 2012).

A fundamental challenge was to find workplaces as there was a shortage of workplaces that wanted to participate in the apprenticeship training. In most cases the teachers or the schools provided workplaces in collaboration with the local trades but it was also quite common that apprentices brought (or had to bring) their own contracts when starting the VET-programme. It was also found that a number of apprentices didn't get access at all to workplaces as the teachers considered them not mature enough. In addition teachers feared that by placing them the school might risk further opportunities to get contracts with workplaces. These apprentices had to stay in school and be trained by the teachers and that which took up a lot of the teachers' time. Initially in the pilot project many schools believed they did not need to give school-based VET-training and accordingly lacked both proper workshops and tools for school-based training.

An additional problem was to get contracts with workplaces having an enough broad production. Many contracted workplaces were small and had a specialized production. When teachers eventually became aware of what kind of vocational knowledge workplaces were able to provide they could plan for the whole appren-

ticeship education by organizing a rotation between different workplaces in order to arrange for a broad education. In the Health Care programme rotation was made regularly, but in the Construction programme it was difficult as the workplaces wanted to keep the apprentices within the company.

Great challenges were also identified regarding expertise and supervision at the workplaces. The teachers told about great difficulties in training the supervisors on their task to supervise the apprentices. According to the mandatory contracts between schools and workplaces there ought to be qualified supervisors, but the contract did not demand any supervisory training. One big problem was that the appointed workplace supervisor according to the contract, commonly the boss or foreman was the one expected to attend courses for supervisors provided by schools, but she/he was not the one giving supervision. The real supervisors, working on daily basis with the apprentices, were commonly not aware of the expectations related to supervision and the vocational knowledge expected to be learnt according to the school curriculum. Another huge challenge was follow-up and assessment. The teachers had great difficulties in knowing what the pupils actually had learned at workplaces. The teachers' also said they lacked time for follow-up and trilateral talks – as mentioned they needed to care for apprentices remaining at school or needed to do administrative work. The assessment and marking therefore became too much reliant on the supervisors' judgments.

Conclusions

Lave and Wenger (1991) has presented a learning theory from studies of apprentices that have shown that apprentices will start their learning trajectories becoming skilled workers by taking part in a practice as legitimate peripheral participants. Billet (2009) claims that workplace experiences contribute to learning through close and indirect guidance by observing more competent workers. Still to improve the learning potential of the workplace there is also need for a supporting structure for guidance. Means to accomplish a supporting structure include developing a workplace curriculum, to develop enacting guided learning strategies and to engage apprentices in critical reflection upon their workplace experiences. As has been shown in the follow-up study of the pilot project, the workplace curriculum and the guided learning strategies were usually hidden and it was not felt important to make them visible. Still some clear differences between the VET-programmes were recognized. Regarding the realized workplace curriculum and supervision the Health Care programme offered the more elaborated workplace guidance and monitored the progress more clearly than the Construction programme. In the Construction programme the apprentices often got stuck with monotonous tasks for a long period of time in order to unburden the supervisors' workload instead of getting support and guidance even though the Construction trade has a long experience of post upper secondary apprenticeship.

Great differences were consequently found in the quality of the support for learning at the workplaces in the Swedish apprenticeship pathway. The apprentices' development of vocational knowledge became dependent on the learning support at the provided workplace and lead to big differences in developing vocational knowledge.

It is concluded that there could be great potentials in Apprenticeship Education if accessible resources are provided – at institutional context as well as at workplaces. By analyzing what kind of vocational content and experiences that can be provided by workplaces and schools respectively it will be possible to organize for apprentices' learning trajectories (Berner 2010; Billet 2009; Fuller & Unwin 2008).

Finally a critical point must be raised according to the governments' ambition with the reform – to improve the throughput, raise the quality of the training and enhance students' employability in VET education. As has been shown in the follow-up study of the pilot project the quality of VET education in the Apprenticeship Education pathway can be very varying. In a report from the Swedish National Agency for Education in 2012 statistics show that 36% of the students who began Apprenticeship Education in 2008 had dropped out and throughput was low: only 44% of the students who began Apprenticeship Education in 2008 received the leaving certificate within the stipulated time of three years (Skolverket, 2012).

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Marketing apprenticeship in the United States: The case of South Carolina

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Summary: Apprenticeship plays a modest role in the United States. Most employers have little knowledge of the benefits of formal apprenticeships. How can policies alter this reality and help U.S. employers learn about and adopt apprenticeship programs? This study examines a successful initiative to expand apprenticeship in South Carolina. Stimulated by studies and public affairs efforts of the South Carolina Chamber of Commerce, the state legislature initiated a marketing and technical assistance effort to expand apprenticeship. In 2007, it provided \$1 million a year for marketing and technical assistance by staff based at the technical college system along with annual employer tax credits of \$1,000 per apprentice per year. Since that time, the Apprenticeship Carolina Division of the South Carolina Technical College System has stimulated the registration of an average one new employer-sponsored apprenticeship program per week and a 500-800% increase in apprentices in the state.

Keywords: Apprenticeship, marketing, employers, subsidies

Introduction

How do U.S. employers learn about and adopt apprenticeship programs? The problem is of special interest because of the low penetration of apprenticeship in the U.S. system of education and training. One approach is to examine marketing and technical assistance programs that have proved their effectiveness. For this reason, the study examines the South Carolina's successful initiative, branded as *Apprenticeship Carolina*. Stimulated by studies and public affairs efforts of South Carolina's Chamber of Commerce, the state legislature funded a \$1 million a year initiative that has employed a small staff to attract employers to registered apprenticeship. South Carolina's legislature also funded annual employer tax credits of \$1,000 per apprentice per year beginning in 2007. Since that time, the *Apprenticeship Carolina* unit in the South Carolina Technical College System has stimulated the registration of an average one new employer-sponsored apprenticeship program per week. Before the initiative, only 90 employers were using the registered apprenticeship system and training about 780 apprentices. By 2012, the number of employer programs had increased than six-fold to 566 and the number of apprentices had jumped to over 4,500. Moreover, the gains show no sign of a slowdown.

Particularly striking is that the apprenticeship expansion took place during a major downturn in the economy and a period of massive job losses nationally. Between January 2008 and January 2012, when most of the apprenticeship opportunities were created, US employment declined by over 5 million. Over 70 percent of the job losses occurred in construction and manufacturing industries, the two industries where apprenticeship is traditionally most common. The South Carolina example proves that increased marketing and technical assistance efforts *can* persuade many employers to adopt apprenticeship as a viable training strategy. But can the approach work elsewhere? What made the *Apprenticeship Carolina* staff so effective? What took

place in the conversations between the staff and employers? Did the initiative involve extensive collaboration between industry, schools, and labor representatives? What are the lessons for other states and the federal government concerning apprenticeship?

Background and methods

The analysis draws on interviews with individuals with experience in forming and operating *Apprenticeship Carolina*. These include the first executive director, the current executive director, the federal representative from the Labor Department's office of apprenticeship, a former corporate leader who leads the relevant unit at the Chamber of Commerce, staff directly marketing apprenticeship, and selected businesses with apprenticeship programs. In addition, the paper draws on data from *Apprenticeship Carolina* and reviews of the South Carolina workforce situation undertaken in 2002 and 2003, reviews that recommended expanded apprenticeship.

Before examining the *Apprenticeship Carolina*'s marketing effort, it is useful to understand the meaning of "registered" apprenticeship and the normal approach for promoting registered apprenticeship. The registered system operates under the supervision of the U.S. Labor Department's Office of Apprenticeship (OA) and State Apprenticeship Agencies. OA's responsibilities 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. In 26 states, State Apprenticeship Agencies play a major role in deciding on registration of apprenticeship programs, providing technical assistance and monitoring compliance with regulations. In states that do not have SACs, the federal OA oversees the program.

Both the federal and state offices that deal with apprenticeship are generally understaffed. In South Carolina, a state reliant on the federal OA, the staff to market, monitor, keep records, and provide technical assistance consisted of one person. Often, calls by employers for information or help in setting up an apprenticeship program go unanswered. In the 50 states plus the District of Columbia, OA employed fewer than 70 individuals in the field helping companies with apprenticeship.

The Registered Apprenticeship system operates with little or no connection to the formal education system of high schools and four-year colleges, though some programs work with 2 year community colleges. In 2008, the number of registered apprentices in the US reached 480,000 but has since declined to about 400,000.

Among the advantages of registering an apprenticeship program are national recognition of an employer program and the provision of certificates that are ostensibly portable to apprenticeship completers. Nonetheless, perhaps because of regulatory concerns, many firms establish unregistered apprenticeship programs. Although little is known about the scope of these unregistered programs, estimates indicate that the size of the unregistered system is as large as the registered system.

Marketing *Apprenticeship Carolina*

Apprenticeship Carolina emerged from the initiative of the state chamber of commerce in collaboration with the state technical college system. The leaders of the technical colleges recognized the value of an apprenticeship partner to improve their relationships with businesses. The partnership between the chamber and technical colleges, along with recommendations in reports sponsored by the chamber, led to the placing the new office within the technical college system. Doing so was thought

to enhance the reputation of the initiative as a “high skills” option, both for companies and potential apprentices. It meant presenting apprenticeship as an educational opportunity.

At the beginning of the initiative, the new office commissioned a survey to determine whether businesses had a negative, positive or neutral attitude toward apprenticeship. Finding that businesses had a neutral attitude and that the apprenticeship system offered special advantages, they decided to use apprenticeship in branding the initiative. *Apprenticeship Carolina* connoted local ownership and involved no reference to government or a state or federal department of labor. The absence of a labor reference was further emphasized by the office’s location within the technical college system.

A key question involved who to recruit as staff to market the program to employers. Ann-Marie Stieritz, the director of *Apprenticeship Carolina*, decided to hire individuals who understand businesses, who are engaging, who had worked in companies, ideally the business services industry, and who knew how to develop and manage relationships. She did not require knowledge or experience of apprenticeship, but a willingness to learn. For the first two weeks, the staff engaged in a total immersion learning process about apprenticeship, where they learned about the concept of apprenticeship, apprenticeship regulations and forms, and saw apprenticeship programs first hand. The 4-5 person staff worked closely with Ron Johnson, a career employee and OA’s South Carolina representative. The presence of Johnson and his flexibility in pushing for the approval of company programs was important in the initiative’s ability to expand within the context of the registered apprenticeship system.

Although the initiative included advertising and a website, the key to marketing was direct contact between the *Apprenticeship Carolina* staff and individual businesses. One important tool for the staff in marketing the program was South Carolina’s \$1,000 tax credit. The tax credit drew sufficient employer interest that they were willing to take the time to talk with *Apprenticeship Carolina* staff. Often, the staff would begin by asking employers about their existing training approaches, about having the expertise of their workers benchmarked against external standards, and about their receptivity to a formal program of earning and learning known as apprenticeship. Working with the technical system provided connections to business contacts linked to people in the noncredit, career-oriented part of the community college. This part of the college is closely connected to businesses because they offer tailored training. More recently, the for-credit occupational programs at community colleges are increasingly collaborating with *Apprenticeship Carolina*.

The expansion of apprenticeship involved reaching out across broad industry sectors, including advanced manufacturing, health care, and information technology. Although traditional registered apprenticeships have required 3-4 years of training, *Apprenticeship Carolina* shows great flexibility in registering shorter apprenticeships in occupations that do not require extensive long-term training. This flexibility is particularly important for selected health, hospitality, and some manufacturing occupations. The program takes full advantage of regulations that allow companies to substitute competency-based or hybrid (time and competency) standards for time-based requirements. The South Carolina experience raises questions about the desirability of reducing apprentice occupations to perhaps 100-150 broad categories instead of the 800+ occupations on the books. From the staff viewpoint, having a large number of categories increases the likelihood that firms will find an existing apprentice occupation that fits their needs with little adjustment.

Apprenticeship marketing often takes place in the context of state and local economic development efforts to attract new businesses. The program’s work with com-

panies on their training needs is marketed as a reason for a firm to locate in South Carolina. Workforce Investment Act (WIA) agencies are also cooperating, sometimes providing on-the-job training subsidies in the context of apprenticeship. The chamber of commerce publicizes apprenticeship through forums, newsletters and committee meetings.

The value added by *Apprenticeship Carolina* comes mainly from the program's ability to work with business to diagnose their skill demands, including what they see as an ideal set of skills that they want workers to master. Often, staff members lack the technical expertise to determine the ideal skill mix as well as the curricula and work-based learning required to attain this skill mix. In these cases, they can draw on experts from the technical colleges. Brad Neese, the current director of *Apprenticeship Carolina*, gives the example of how he found a college expert on skills required for extrusion. The next step is asking businesses how having this skill set would improve outcomes at businesses. Conversations between representatives and firms lead to the establishment of content standards for apprenticeships. At that point, *Apprenticeship Carolina* representatives develop applications and other paper work to establish the program as a "registered" apprenticeship within the US. Firms can leave application process and other paper work to program representatives. Without this mix of benefits, employers see organizing standards and curricula as burdensome and might opt out of the program.

In marketing registered apprenticeship, the staff can draw upon content standards used elsewhere in the country for various occupations. But, instead, representatives generally do not rely on occupational profiles adopted elsewhere in the registered apprenticeship system. For example, in the case of the mechatronics occupation, national guidelines included only a small share of the skill requirements demanded through several programs under *Apprentice Carolina*.

One illustration of Apprenticeship Carolina's adaptability is its recent initiatives in youth apprenticeship. It is increasingly working with companies to form partnerships that involve young people while they are still in high school. This model is far closer than most US apprenticeship programs to those operating effectively in Germany and Switzerland.

Apprenticeship Carolina's success in a recession and in a state not normally worker-oriented demonstrates that U.S. employers will invest in training under a well-structured apprenticeship framework. Replication to other states looks feasible, with sufficient business and community college support.

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CHAPTER II

ENABLING WORKPLACE LEARNING

Improving the quality of apprenticeships as learning environment

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Summary: This paper presents results of three case studies on WBL in 'dual' school based vocational education. All cases deal with experiments in the nursing and care sector to strengthen apprenticeship as learning environment. Projects focus on improving quality in terms of guidance, opening up opportunities to connect theory and practice and improving communication and collaboration between schools and workplaces.

Keywords: New WBL-arrangements, guidance, quality, theory acquisition in WBL

Introduction

New theoretical approaches on workplace learning can be used to throw light on developments in Dutch apprenticeships. There are two main issues in dispute: the quality of workplace learning (content, guidance, assessment) and the quality of the connection between workplace and school-based learning.

Workplace learning in apprenticeships can be seen as learning that is situated and occurs mainly through processes of dealing with work and occupational core problems as well as participation in communities of practice. Actual learning depends of conditions of the workplace, both with regard to work content, workplace culture as well as guidance by trainers (Onstenk, 2004). Learning opportunities vary strongly among apprentices and workplaces, due to a combination of structural, cultural and pedagogical factors. Learning is often not highly conscious, but occurs haphazard and influenced by chance. In this sense it could be defined as opportunistic, mindful learning (Langer, 1997). This implicit learning is often not guided by learning objectives, but by (developmental) work objectives. Learning takes place during performing activities and participating in practice.

So learning possibilities depend largely on the structures, norms, values and practices within workplaces. But individual agency always shapes what constitutes, through workplace 'affordance', an invitation to participate in learning (Billett, 2002). Deep learning by apprentices is difficult to realise. In VET many school teachers do not know enough about vocational practice to help understand the links. There is often little preparation for or effective use of workplace learning experiences in school settings (Poortman, 2007). On the other hand many 'natural' workplaces show a lack of learning opportunities and guidance and can be seen as restricted apprenticeships (Fuller & Unwin, 2003). One of the reasons why there have been many experiments with new models of apprenticeship. There is a growth in hybrid learning places, combining theoretical and practical learning (Zitter & Hoeve, 2012).

Methodology

The paper is based on a secondary analysis of three qualitative explorative, design and action oriented case studies into quality improvement of apprenticeships in the care sector. In all cases new instruments and ways of working were designed and

tried out. This sector is interesting because there is a long tradition of apprenticeship or internship on both low (caring), middle (nurses) low and (very) high (medicine) skill level.

Recurring quality issues have to do both with guidance and knowledge development. On the one hand caring and nursing institutions have a strongly growing labour demand, but the sector is not seen as attractive to work in. It attracts many students with personal problems and poor learning performance. On the other hand jobs are becoming more knowledge intensive.

Results

The analysed studies show that the sector has several innovative apprenticeship models. These experiments are aiming for quality improvement and 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.

A first case study deals with a learning department in an elderly home. A learning department is a form of work placement involving a group of 6-8 apprentices within a single ward, where students run the ward (under guidance). Learning departments in hospitals and care organisations are a new development in the Netherlands. In total, more than 150 healthcare institutions have arranged such learning departments, in cooperation with the regional colleges. Reason for this provision was primarily a shortage of apprenticeship places, as well as worries about the distance between theory and practice.

Apprentices engage in collaborative learning, involving all aspects of the tasks in the department. So they can use and develop both (tacit as well as codified) subject knowledge and work process knowledge. A part of theoretical teaching is done on the job (by teachers from the vocational college) rather than in school. As teachers and coaches work together there can – at last in principle- be more alignment in designing developmental tasks than in regular apprenticeships.

Research into learning outcomes show that apprentices in the learning department indeed develop work process knowledge: they get a higher degree of self-direction and autonomy on the learning section. Also, there is a clear growth in learning abilities of apprentices. Apprentices learn better how to plan, how to cooperate and develop a larger problem solving ability.

Learning outcomes with regard to domain knowledge seem more ambiguous. One main reason for this seems to be a lack of appropriate didactics aiming for competency-based and integrative acquisition of knowledge. So examples will be analyses of some institutions that try to strengthen knowledge content of the learning department, i.e. by using medical and nursing expertise from within the hospital, rather than the school. Also communication between apprentices and teachers at the regional vocational college remains a problem..

Some of these topics are dealt with in the other studies. Several projects which experiment with new modes of communication and quality improvement are discussed.

A second case study, we investigated the perspective and practice of a vocational school, dealing with both learning departments and 'standard' apprenticeships in the care sector. Our focus was on analysing and strengthening the complicated relationships between school and workplace with regard to guidance and assessment of workplace learning. Development of reliable and workable assessment of workplace learning is lagging behind, especially if you take into account the growing importance in VET courses. We found out that communication between school and professional

practice was scarce, and that there were hardly examples of informed dialogue to optimize and evaluate the quality of learning in the workplace. Cooperation to design good assessment methods is crucial. In fact, the school did hardly know how practice assessments (by a presumably certified workplace assessor) were done. Sometimes final assessments were performed by simply adding up a collection of example tasks done in the workplace during regular work, sometimes a specific test assignment was given and judged in a specific test setting. Teachers from school did not participate in practice assessment, although they have final responsibility for giving scores. In a design project using a new procedure and communication form, they did participate in the assessment, together with an assessor from the company. Sometimes they showed very different judgements of the same performance. More often than not, however, a short conversation made the meaning of this difference clear, leading to a common final judgement. This increases the objectivity of judgments as well as gives teachers more insight in the things practice assessors thought were important. This also gave them new opportunities to link theory to learning in practice.

It was concluded that by structured communication health care institutions and the regional college should and can work together to guarantee the quality of assessment. As a result training companies pay more attention, not only to systematic guidance, but also to assure that only certified practice assessors were involved in performing assessment for apprentices. Because of the complex role of the assessor, an assessor should at least have two years of work experience. The school takes the evaluation of performance by the practice assessor more seriously and adapts its own, often more formal and theory (reflection) oriented, assessment criteria.

In another case study, done in a large general hospital, we investigated the possibilities to improve the knowledge intensity of apprenticeship periods (work based learning) in the learning departments in that hospital. Purpose of the research was to understand how student-nurses can acquire theoretical knowledge in the hospital, and can be more effectively supported in linking knowledge to observations in professional practice. The objective was to make sure that students, future nurses, were supported in speeding up expertise development and in developing abilities to act in core professional situations on the basis of integrated professional knowledge.

The aim was to design a learning environment, where apprentices could be encouraged to give meaning to work experiences in theoretical instruction. By using hospital experts (nurses, doctors) to deliver theoretical training, apprentices are stimulated to reflect and relate 'new' knowledge to already existing knowledge. In this way students are not only guided in acting in professional situations and develop (implicit) knowledge from experiences in professional practice, but also in in-depth learning and understanding the (scientific) knowledge behind the right action in care situations. This will lead to a minimal instructional split in sub-processes and integrative learning situations. Professional practice in this way provides an enriched learning environment for vocational students (apprentices). Both by participating in practice experience and supported by theoretical knowledge which is widely available in the hospital.

Interestingly, the involvement of practitioners in delivering theory lessons opened up new opportunities and content for intensified communication with the teachers of the regional vocational college. The sometimes hesitant and flawed cooperation between professional practice and the regional college did get a boost by concrete initiatives of practitioners. The trainers at the hospital enjoyed this opportunity to cooperate with teachers of the educational institute in executing the new curriculum. School teachers were a bit more sceptic, but communicated nevertheless more in-

tensively with the hospital, not only about work based learning, but also about the work related theoretical knowledge.

These case studies show interesting new ways of connecting theory and practice, by redefining and connecting both content and responsibilities in a better integrated curriculum. Redefinition of common responsibilities of workplaces (companies) and schools improves the quality of workplace learning as part of school based vocational pathways, both with regard to work based learning itself, and with regard to improve connectivity with theoretical (codified) knowledge.

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To what extent do facets of the learning environment influence apprentices' motivation and learning success?

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Summary: The German VET system requires apprentices to learn both at a vocational school, imparting theoretical knowledge, and in a company providing the apprentice with specific professional experience. To secure learning and competence development, an apprentice's intrinsic motivation is indispensable. With regard to the company where practical training takes place, the apprentice's immediate working environment strongly affects intrinsic motivation. Data from more than 500 German apprentices training to become mechatronics fitters suggests an influence of work task design on the one hand and social environment on the other hand. Apprentices' evaluations of their tasks' diversity and complexity, their colleagues' supportive behavior, and their trainers' competence and personal involvement significantly predicted degree of intrinsic motivation. The direct impact of the working environment on competence development turns out less pronounced.

Keywords: Intrinsic motivation, training quality, company-based training

Introduction

Theoretical approaches: The development of motivation and learning success through work experience

In the German dual system of Vocational Education and Training (VET), young people in training acquire their knowledge and skills in two different places, namely in a vocational school, which deals predominantly with conveying theoretical and background knowledge, and in a company where the apprentices learn performing the tasks of their profession in practice. There the domain specific contents learned at the vocational school are put in the context of the day-to-day procedures in the company's line of work. The young people in training learn to transfer what they are taught at school into the tasks of their profession, starting with simple sub-steps of procedures under instruction from a colleague to performing a task or a series of tasks on their own.

Companies providing training differ greatly in the degree of formalization of their training procedures, the didactical approaches of the trainers, and prominence of training in the company's (recruiting) strategy. However, independent of the formal training concept and probably even more relevant on a day-to-day basis, the properties of the immediate working environment, i.e. the concrete work tasks and the social climate at the workplace, have to be taken into account when talking about the quality of training. The condition of the working environment affects the extent of the apprentice's learning and competence development. In addition, the workplace design greatly influences the development of the apprentice's motivation, which in turn has a strong impact on the apprentice's willingness to learn and put effort into his or her work and thus stimulates competence development.

Especially intrinsic motivation can be considered indispensable for successful learning and working (Deci & Ryan 1993), e.g. as a mediator between the learner's personality, the learning environment and competence development (Franke 2005). This applies particularly to informal learning contexts, where there is no reward system and learning takes place mainly incidentally.

Determining how aspects of the learning environment influence the development of intrinsic motivation, we first have to take a closer look at which facets of an apprentice's working environment can be distinguished. For our purposes we can roughly differentiate between aspects of the concrete design of work tasks and those of the social environment consisting of training personnel and other colleagues. First and foremost theories rooted in industrial psychology deal with the antecedents of task-inherent motivational potential.

The Job Characteristics Model (Hackman & Oldham 1975) identifies the following characteristics of a working environment enhancing motivation and competence. The worker should experience his or her tasks as meaningful and relevant for the workings of the company, be able to operate with a certain degree of autonomy and receive feedback concerning his or her work. For these purposes tasks should be multifaceted and not fragmented into disconnected units. As apprentices present a special category of workers, for whom the workplace first and foremost provides the opportunity to gradually learn their profession's tasks, their work tasks should in addition to the afore mentioned recommendations be carefully matched in their complexity to the apprentice's respective level of competence.

Beicht et al. (2009) stress that tasks designed with these principles in mind can only develop their positive effect on motivation and competence, if they are embedded in a positive working/ learning atmosphere. Such an atmosphere comprises a supportive behavior of colleagues and training personnel and the absence of excessive demands on the apprentice.

Additionally, concepts like the novice expert paradigm (Dreyfus & Dreyfus 1980) or the communities of practice approach (Lave & Wenger 1991) suggest the importance of watching colleagues doing and explaining their work in order to learn how to do it oneself. With regard to facets that could improve motivation and facilitate learning we consider perceived involvement and professional and pedagogical aptitude of those colleagues responsible for training.

Methodology: Study sample and design

The results presented here are based on data from a longitudinal study in which we examine the development of professional competence and intrinsic motivation in more than 1000 German apprentices training to become mechatronics fitters. Aside from basic cognitive skills like mathematics and reading, we assessed domain specific competences in the middle and at the end of the 3 ½ -year apprenticeship, intrinsic motivation and self-efficacy, and aspects of training quality. The sample size is considered sufficiently large to permit the expectation that findings are robust; the apprentices included in the study come from four federal states in the Federal Republic of Germany. The results presented here include solely those participants who were surveyed at the beginning of their training as well as after 1 ½ years of training.

On the one hand the apprentices provided information about the quality of their training environment half a year after beginning their training. For this purpose we designed a questionnaire containing questions concerning work task design (assessing if the apprentice is assigned manifold tasks that are matched to his/her respective competence level), the relevance and meaningfulness the apprentice attributes to his work in the context of the company's performance, the degree of autonomy the ap-

prentice is granted in doing his work, the feedback trainers and other colleagues provide the apprentice with, the extent of excessive demands the apprentice has to face at work, perceived involvement and professional and pedagogical aptitude of the training personnel, and finally professional and social support provided by other colleagues at work (Velten & Schnitzler 2012).

On the other hand the apprentices rated their intrinsic motivation for doing their work at the training company with a three-item-measure by Prenzel et al. (1996), which defines to what extent the apprentices enjoy their work and how much effort they put into their work. The motivation was assessed both half a year and 1 ½ years after beginning the training. As a second dependent variable we used a paper-pencil-test to assess the apprentices' domain specific knowledge 1½ years into their training.

We use multiple stepwise regressions to determine the influence of training quality on professional competences and intrinsic motivation.

Results: Bivariate correlations and multiple regressions

Looking at the relationship between intrinsic motivation and the working/ learning environment, we find the highest positive correlations for the work task design and the competence and involvement of the training personnel, but also of other colleagues. Entering the facets of the learning environment into a regression analysis, with the motivation, assessed at the same time as the learning environment, as the dependent variable, we can explain 40% of variance. Of the assessed environmental facets, the strongest predictors of intrinsic motivation are work task design, colleagues' professional and social support, and excessive demands (cf. Figure 1).

To determine long-term effects of working/ learning environment on motivation, we repeated the regression, this time with the motivation being assessed a full year after the assessment of the environmental facets. Once again the strongest predictors of motivation are the work task design and excessive demands, although due to the time lag the amount of variance that can be explained is much smaller (11%).

Figure 1: Multiple stepwise regression predicting intrinsic motivation

Predictors	B	SE	β
1. Work task diversity and complexity	.229	.054	.185**
Excessive demands	-.220	.044	-.187**
Autonomy	.073	.032	.088*
Feedback	.004	.042	.004
Meaningfulness	.047	.033	.057
2. Colleagues' behavior	.220	.039	.211**
Trainers' involvement	.094	.043	.112*
Trainers' professional competence	.106	.050	.110*

Note: ** The beta-coefficient is significant at the .01 level.

* The beta-coefficient is significant at the .05 level.

Additionally we examined the influence of the learning/ working environment on domain specific knowledge as part of the professional competence. The environmental facets explain 6% of variance in the knowledge test, significant predictors being excessive demands, feedback and the meaningfulness attributed to the apprentice's work.

Our analyses show that the working/ learning environment has a strong impact on apprentices' intrinsic motivation for doing their work at their training company, and, to a lesser extent, on competence development.

With regard to task design, especially varied tasks that match the respective apprentice's capacities improve motivation. With regard to the social environment, we see that not only the person directly responsible for training has an influence, but also other colleagues' ways to interact with the apprentice and their ability to introduce him or her to their working and problem solving routines.

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Correlates and predictors of apprentices' perception of their workplace as learning place. An analysis of the first three years in apprenticeship

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Summary: Learning at the workplace is a constitutive for Swiss initial vocational education and training. Apprentices have a very positive perception of their opportunities to learn and to be trained at the workplace. Key factors are highly skilled trainers, the transfer of knowledge from the vocational school to the company and a job design that allows an apprentice to make own decisions. Companies can deliver perfect workplace training through trainers with high pedagogical and didactical skills, an active consideration of the learning contents of the vocational school and an adequate job design.

Keywords: Workplace learning, trainer, vocational school, job design

Introduction

In initial vocational education and training in Switzerland, learning at the workplace is a crucial and central element in the education and training of adolescents at the upper secondary level (Stalder & Nägele, 2011).

The development of vocational knowledge, skills and abilities depends to a great part on the learning opportunities of apprentices in their companies. These learning opportunities depend on the concrete job activities, the instruction an apprentice receives, how the trainer and experienced co-workers interact with the apprentice and how they coach him (Billett, 2001). Hence, the opportunities to learn at the workplace depend on a) the location of learning, b) the extent of planning that has been invested in delivering the training, c) the role of the trainer and others during the learning process (Jacobs & Park, 2009), d) the work task and working conditions or e) the amount cognitive regulation that is needed to do the task (Hacker, 2005). Optimal workplace learning is embedded in a situation where there is support from the supervisor, an adequate workload, and the opportunity to use the new competences (Russ-Eft, 2002).

Workplace training relies on authentic work. The apprentices learn by doing real work in a real context. Therefore, it is a big challenge for every company not only to keep the apprentices busy, but also to teach and educate them and to help them to become expert workers.

Predictors of the learning opportunities

Social Environment: The interest of significant others (parents, peers, ...) might play an important role in the learning process as soon as the work becomes too demanding and in supporting the cultural change from learning at school to learning at a workplace.

Characteristics of the apprentice. Positive self-esteem and self-efficacy help to cope with a situation that is completely different from the learning situation in a classroom. Apprentices have to cope with the same situations as the experienced co-

workers do and it is expected that they stand the situation. A positive self-image certainly helps doing that.

Learning style of the apprentice. It is helpful if the apprentice is willing to learn and if he has the ability to concentrate on the learning task, even if there are distractions. It is the ability to focus on what has to be learnt.

Skills of the workplace trainer. The workplace trainer is responsible to educate and train the apprentice on the job. This is a huge challenge in many aspects (Semmer, Barr, & Steding, 2000). A trainer needs to have pedagogical and didactical skills to initiate, structure and support the learning process of the apprentice.

Skills of the vocational teacher. The teachers at the vocational school are responsible for teaching the academic contents of a profession at the vocational school. The apprentices evaluate their pedagogical and didactical skills in the same way as they did it for their trainers.

Job design at the workplace. A huge body of literature (Hacker & Skell, 1993; Hacker, 2005; Dehnbostel & Elsholz, 2007; Frieling, Bernard, Bigalk, & Müller, 2006; Nägele & Hasler, 2010) discusses the aspects of the task design and job design as preconditions for learning. Learning is facilitated if the learner has a scope of action and is able to regulate his work in a stress-free manner.

“Job design” at the vocational school. The items measuring job design were adapted to the vocational school context.

Transfer vocational school – workplace. The outcome of workplace learning and training is typically context specific (Munby, Versnel, Hutchinson, Chin, & Berg, 2003). To guarantee a certain standardization of the contents in workplace training and also to guarantee the transferability of the acquired knowledge, skills and abilities the curriculum is jointly developed by the companies of a specific profession. They work together with representatives of the cantons and the Swiss Federation such that for any profession a common understanding is developed on what has to be learnt and what has to be trained to become a professional in a specific domain. This signifies that companies are not completely free how they educate and train their apprentices. They have to adopt the curriculum and should make a link between the learning at the workplace and the learning at the vocational school.

Research question

Workplace as learning place: How do the apprentices evaluate the workplace as learning place? Does this evaluation change over time? What are predictors of the evaluation of the workplace as a learning place?

Methodology

This paper discusses the assessment of the learning opportunities in the company by the apprentices in their first, second and third year of their apprenticeship.

Data is taken from the Swiss youth survey TREE, which is based on the Swiss PISA sample tested in the year 2000. The participants have been followed up annually until 2007 and with an additional survey in 2010. The initial sample counted over 5,000 young people representative of an entire Swiss grade 9 school-leavers' cohort. Each year, the young people described their current educational situation, reported significant events in their educational pathway and specified their occupation, school or company.

Learning opportunities at the workplace

This concept was measured with three items ($\alpha = .748$). It was asked how often apprentices have the chance to use their newly acquired knowledge at work, how often they have the possibility to learn and develop new skills. Learning opportunities was rated on a scale from 1 “very seldom” to 5 “very often”.

Predictors included interest of significant others (e.g., “How much are these people [parents, peers, ..] interested in your education?”, index), social support (e.g., “How much can you rely on these people [parents, peers, ..] if it becomes difficult in your education?”, index), self-efficacy (e.g., “If there is a problem, I can find the solution myself”, 4 items, $a = .719$), self-esteem (e.g., “I have a positive attitude towards myself”, 4 items, $a = .758$), willingness to learn (e.g., “I do my best when I learn”, 4 items, $a = .692$), concentration at school (e.g., “I concentrate at school”, 2 items, $a = .746$), skills of the trainer or teacher (e.g., “My trainer/teacher can explain things well”, 6 items, $a_{\text{trainer}} = .870$, $a_{\text{teacher}} = .859$), scope of action (e.g., “I can decide what to do”, 3 items, $a_{\text{company}} = .662$, $a_{\text{school}} = .675$), stress (e.g., “Time pressure is high”, 5 items, $a_{\text{company}} = .630$, $a_{\text{school}} = .779$), transfer vocational school – company (e.g., “What I learn it school I can use at the workplace”, index). All these predictors were measured on a scale from a low parameter value coded as one to a high parameter value coded as four, respectively five. All α -values are from wave one.

Results

Descriptive results for learning opportunities

The apprentices evaluate the learning opportunities at the workplace very positively (on a scale from 1 to 5). In the first year of the apprenticeship the mean is 4.1 (SD = .70), in the second year 4.0 (SD = .75), and in the third year 3.9 (SD = .79). The slight decrease of the mean is statistically significant ($F(2, 2781) = 100.18$, $p < .001$, $\eta = .069$).

The stability of the evaluation is rather high, as the correlation of learning opportunities in the first and second year is $r = .527$, $p < .001$, between the second and third year $r = .589$, $p < .001$, and between the first and third year $r = .455$, $p < .001$. This means that apprentices starting with good learning opportunities in their first year have a relatively high chance that this situation stays unchanged in the second and third year of their apprenticeship. It is also truth the other way round: if learning opportunities are low at the beginning, they will very likely not become better over time.

Predicting learning opportunities

Positive effects of almost all predictors were found on learning opportunities. As expected, the workplace trainer plays an important role ($\beta = .294$, $p < .001$). Second, it is the transfer between the vocational school and the company is important ($\beta = .217$, $p < .001$). Third, the job design is important: scope of action ($\beta = .159$, $p = .001$) and stress ($\beta = .098$, $p < .001$). Having stress in the context of an apprenticeship means: having something to do! Often apprentices report that they don't have enough work to do such that they have to work below their capacities. Further, a positive self-esteem ($\beta = .084$, $p < .001$), the ability to concentrate ($\beta = .067$, $p < .001$), persistency ($\beta = .069$, $p = .001$) and a positive social support ($\beta = .084$, $p = .001$) add to a positive evaluation of the learning opportunities at work. These results are from the first year. However, the pattern of the correlates and predictors of workplace learning stays rather stable over time.

Conclusion

First of all, we see a very positive and stable evaluation of the learning opportunities at the workplace by the apprentices. What is learnt at the workplace is relevant for the practice and day-by-day work shows that knowledge and these skills are relevant.

All in all the evaluation of the apprentices of the learning opportunities at the workplace is very positive. Conclusions from this paper for a further improvement of workplace learning could be a further professionalization of the workplace trainer, especially with an emphasis to focus on integrating school based academic knowledge into the daily work in the company. And trainer should help to design jobs such that apprentices have a positive scope of action and that they are confronted with tasks in which they can use their knowledge, skills and abilities.

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An assessment of the effectiveness of VET workplace learning via the VET-WL factor model. A study in the Barcelona area

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Summary: The experience of workplace learning is a key part of VET studies, because it offers the students the opportunity to put into practice the skills they are learning at school; and it allows them to acquire other skills that are closely linked to the organisational context. Our aim is to evaluate the effectiveness of VET workplace learning in Barcelona area, through the measurement of factors that hinder or facilitate learning for VET students in a real workplace. We used a quantitative method, and present descriptive results and multiple regression analyses in order to offer a global vision of effectiveness factors in workplace learning as well as a causal factor model. This evaluation focus, based on effectiveness factors, can provide some useful hints to design an effective workplace learning system and turn the workplace experience into a learning opportunity.

Keywords: Effectiveness, transfer of training, workplace learning, vocational education and training

Introduction

For years, concerns have been expressed in the academic and professional fields about the quality of vocational education and training [VET] (Azumah 2012). One important dimension of the quality is effectiveness, defined as the attainment of the objectives of VET. Workplace learning [WL] is part of the Initial VET curriculum in Spain, and consists of developing non-contractual professional internships in companies; it lasts between 300 and 700 hours, depending on each VET level. WL is an ideal space in which to evaluate the effectiveness of VET, because through practical experience in the company students can apply what they have learnt and demonstrate their skills. Therefore, we have chosen to focus our research on measuring the effectiveness of the WL in VET. The evaluation of VET effectiveness has been deeply developed in continuing training. In this context, effective training refers not only to the learning of employees but also to the application of this learning to the workplace, i.e., it refers to training transfer. Because a comprehensive process of evaluating transfer requires many human and financial resources, several authors have suggested the possibility of evaluating transfer indirectly by measuring the factors that influence the applicability of training to the workplace (such as Baldwin & Ford 1988; Noe 1986; Rouiller & Goldstein 1993; Holton, 2005; Burke & Hutchins 2008; and Pineda & Quesada 2013). In the context of the WL in VET, the focus on the factors that determine the effectiveness of training has still not been addressed. We believe it would be interesting to adopt this focus and contribute new instruments to measure the effectiveness of the WL indirectly. To this end, our study was centred on evaluating the effectiveness of workplace learning in VET by using an indirect approach. We consider that effective workplace learning allows VET students to complement the skills or knowledge acquired in VET and developed within the institution; to apply

their professional skills to a real work situation; and to acquire the attitudes and skills needed for employment.

Methodology

The aim of the study¹ was to evaluate the effectiveness of workplace learning, through factors. We created the FET-WL instrument to be filled in by VET students; the tool was validated through exploratory factor analysis and it underwent a reliability analysis. The first part, made up of 43 items (5-point Likert scale), is meant to assess the WL dimensions of effectiveness; it contains the 6 factors presented below, which explain the 47.94% variance.

The *school tutor's role* factor refers to all those functions and activities that belong to the tutor, whose goal is to help the student to perform the workplace learning as far as successfully achieving the objectives of the WL is concerned. The *coherence of the school training with the WL* factor includes all those aspects related to the educational coherence between the studies taught at the educational institute and the skills the student will have to put into practice during the WL. The *host company tutor's role* refers to those functions and activities of the tutor from the host company that are based on supporting the student. The *motivation* factor refers to an intrinsic motivational component, that is, the drive, effort or interest of the student to carry out the workplace learning. The *possibilities of developing the WL* factor is defined as the conjunction of circumstances that allow the student to carry out the WL effectively, such as having up-to-date theoretical and practical knowledge, as well as appropriate materials to carry out the tasks in the WL. Finally, the *integration into the company* factor is defined as the intern students' impression that they have been well received by the host company. The second part of the FET-WL is on students' attitudes; it contains 12 items (Osgood's semantic scales, 1957; cited in Iglesias 1990) and 2 factors: the *social attitudes* are those directed towards other people, ends or objects, such as respect towards others or responsibility when being assigned a task. And the *individual attitudes* are those whose goal is the self and which are related to the student's self-esteem, such as feeling ready or capable of carrying out the workplace learning. And finally, the third part of the FET-WL instrument is based on 4 items to be assessed with a 5-point Likert scale (as instance, "Workplace learning has allowed me to improve the knowledge and skills learnt during training"), and it is composed by a single factor, *effectiveness of the WL*. In this paper, we present the descriptive analysis of the factors and multiple regressions, performed with the *student attitudes* and WL effectiveness factors as independent variables, and the *WL effectiveness* as a dependent variable.

Results

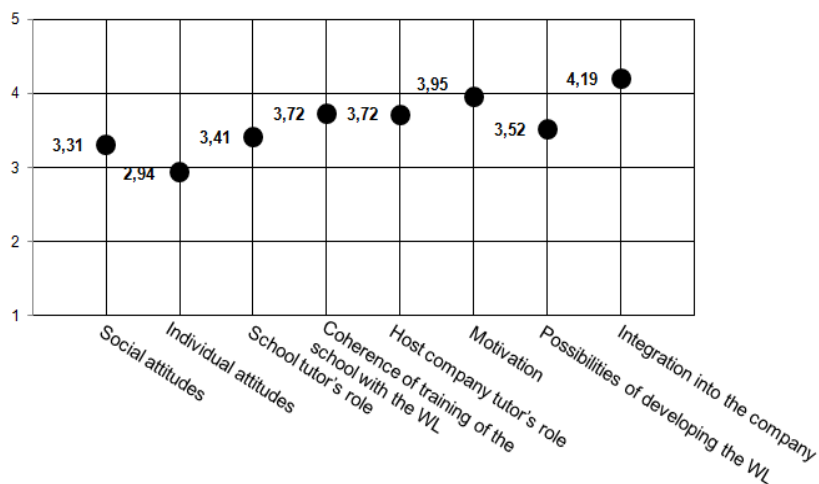
We administered the FET-WL questionnaire to a sample of 1,026 VET students in the Barcelona area, Spain; with a margin of error of 2.52% ($Z^2_a=1.96$). These students were participating in the WL or had already completed it during that academic year (2010-2011) by the time they took the questionnaire. The distribution of the surveyed students was quite balanced between men (47.5%) and women (52.5%) and the average age was 21 years old (standard deviation of 3.7). 41.5% of the students had no

1 The present paper is a part of a broader study conducted in 2011 – 2012: "FCT on plus: Avaluació de l'eficàcia de la formació en centres de treball". It was coordinated by Professor Pilar Pineda-Herrero, and financed by the Fundació BCN Formació Professional. Other researchers involved in the study are: Oscar Mas-Torelló, Carla Quesada-Pallarès, Berta Espona-Barcons, Natalia García, Anna Ciraso and Adrià Zancajo.

prior work experience at all. The majority of companies where the WL took place were small organizations with 10 to 49 employees.

Factors with an average of less than 2 points (on a scale from 1 to 5) could be considered as barriers to the *effectiveness of the WL*; factors with values between 2 and 3 could become barriers; factors with values between 3 and 4 points are considered weak facilitators of effectiveness; and factors with an average above 4 points are strong facilitators. As shown in Figure 1, the *individual attitudes* factor has the lowest value of the set. On the other hand, the *integration into the company* factor received the highest score, and it acts as a strong facilitator for the effectiveness of the WL. We analyzed descriptive results from the *effectiveness of the WL* factor separately and obtained a mean value of 3.77 (on a scale from 1 to 5)..

Figure 1: Average WL effectiveness factors. Source: Authors.



To carry out the multiple regression analysis, we simultaneously inserted all the independent values into the model. The result displayed that the model could explain the 66.9% *WL effectiveness*. Nevertheless, when we looked at the T-test significance, the *social attitudes* factor did not reach the 95% level of significance.

With this result, we carried out the multiple regression analysis again without this factor and we obtained an adjusted R^2 value equal to that of the previous model, .669. In this model, the *individual attitudes* factor was not 95% significant either.

We carried out a third multiple regression analysis with six factors out of the initial 8, and, in this last case, the model could explain the 66.9% variance in effectiveness, obtaining the same value as the two previous models. All the T-test coefficients were significant. Table 2 displays a summary of the values obtained by the factors in the third multiple regression model.

Discussion

The effectiveness of VET studies is a key element for the economy and the welfare of our society. Workplace learning, as a part of VET studies, is the ideal space to assess its effectiveness as it allows the students to improve their training and apply it to a real workplace. Our 6-factor model, which resulted to explain 66.9% of variance, allows us to determine the effectiveness of workplace learning in VET from the student's point of view. The coherence of school training with the WL factor alone obtains the highest impact in the multiple regression on effectiveness (β of .656; $p < .01$). Nevertheless, descriptive results reveal that student appreciation can be enhanced (3.41 out of 5). Consequently, this is the first element where actions need to be taken regarding policies and school practices in order to WL learning. Some of the strategies can be aimed both at increasing contacts between schools and organisa-

tions where workplace learning takes place and at improving communication between the company tutor and the school tutor. The *host company tutor's role* is the second factor that should obtain better results in order to enhance effectiveness.

Table 2: Multiple regression on the effectiveness of WL. Source: Authors.

Factors	Non standardized coefficients		Standardized coefficient
	B	Standard error	Beta
(Constant)	,124	,097	
<i>School tutor's role</i>	-,038	,018	-,041*
<i>Coherence of the school training with the WL</i>	,748	,029	,656**
<i>Host company tutor's role</i>	,149	,022	,155**
<i>Motivation</i>	,086	,022	,084**
<i>Possibilities of developing the WL</i>	,070	,018	,071**
<i>Integration into the company</i>	,083	,027	,075**

Note.*p < .05, **p < .01

This factor has the second highest impact on effectiveness (β of .155; $p < .01$), and obtains a medium score from students (3.72). This result could suggest it would be recommendable to professionalize more the tutors' tasks and recognise their function; as well as provide them with specialised training that places an emphasis on the pedagogical elements of their actions as tutors. Our results suggest that workplace learning achieves its main goals, and that students believe it allows them to improve their knowledge and skills and apply what they have learnt in classroom activities. Nevertheless, this result could have a more significant impact on effectiveness if we act on the factors identified herein. The results obtained from this first factor model help us understand how WL system functions in the Barcelona area slightly better. Our next step is to develop a factor model that includes the opinion of other key agents in the process and thus obtain a complete vision of the elements that make WL in VET effective.

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A typical experiment of cooperation between a vocational college and enterprises – a case study of Guangzhou Electromechanical Technician College

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Summary: This paper is a case study of college-enterprise cooperation in vocational education. The production and research work of enterprises are transferred to college. Students are arranged to work in an authentic working environment, so that they can finalize the work-based learning in campus. The enterprises can make full use of college resources from equipment and human resources aspects. Workplace-based learning and work-oriented learning is realized in campus. The college and the enterprises develop a solid and long-term cooperative relationship and a win-win situation is realized.

Keywords: Authentic working environment; college-enterprise cooperation; typical experiment

Introduction

In China, skilled labours are mainly educated and trained in vocational schools and Colleges, while at this moment, more and more graduates from vocational schools lack of sufficient work competency and experience due to the gap between vocational colleges and schools and the authentic production environment in enterprises so the graduates cannot fit the needs of economic markets. To close the gap, vocational colleges and schools in each city are exploring the cooperative mechanism of college-enterprise cooperation, training method of innovating high-skilled talent, and how to improve the quality of vocational education. This research tries to meet the following challenge in college-enterprise cooperation:

- Relatively loosely cooperative relationship. In most cases, college-enterprise cooperation is manifested as a spontaneous behavior and in a low level. Developing and maintain a cooperative relationship mainly depend on friendship and trust between the managers of the two parties. In case of changing managers, in any party, the relationship usually fails to continue.
- Enterprises lack of interests and enthusiasm. There are no effective policies or laws to encourage enterprises to participate in college-enterprise cooperation. In most cases, colleges and schools play an active role and enterprises are passive in college-enterprise cooperation, which often stays at the internship level. No appropriate positions are offered from enterprises to students. Some enterprises even take students as their cheap labors.

At this moment, how to get rid of traditional college-enterprise cooperation mode and explore an effective approach in college-enterprise cooperation has become an important issue for vocational and technical educators in China

Guangzhou Electromechanical Technician College is a key vocational college in Guang Dong province. Its mission is to cultivate skilled workers and primary level managers. With excellent teaching and learning resources, the college has developed close cooperative relationship with enterprises. Since 2008, the college launched serial typical experiments in college-enterprise cooperation and explored new models in integrating work and study, training talent and career development with the support of Administration of Human Resources and Social Security of Guangzhou. This paper mainly focuses on two cases in these typical experiments.

Case description

Case 1: Developing cooperative relationships with enterprises by productive projects.

In 2008, based on teaching demands of numerical control machining programme, the college intends to find out suitable enterprises and developed cooperative relationship with them. After several investigations, the college finally selected a local modern large-scale enterprise—Guangzhou Die and Mould Manufacturing Co., Ltd. as cooperative partner.

According to the cooperation agreement signed by the college and the enterprise together, the college provided 800m² workshop and 23 cutting and processing machines with 5 machining centers. The enterprise offered production orders from market and manufacturing technique. The enterprise is in charge of the production orders from market, making the manufacturing plan purchasing all the needed equipments and materials and bearing all the expenses in the production process. According to the requirements of [machinery production technique](#) and production technology process, a new standardized teaching and production plant was established by two parts. It was named “Practice Center” by the college.

In the center, computers, projectors, teaching and learning facilities and technical materials for students’ information acquirement were prepared. This center mainly produces small amounts of parts and accessories of die-casting dies or large amounts of versatile parts. Work organization is under the lean production mode. Students engaged in whole production process with the support of technicians and backbone teachers arranged by the enterprise and the college respectively.

Teachers from the college were responsible for teaching and counseling of theoretical knowledge. They selected developing working task to enhance students’ comprehensive vocational competency. These teachers also involved and support enterprise staff to administrate production in the workshop.

The enterprise arranged one technician for each student as supervisor to guide his or her work, until the student was able to work independently. Since a student worked in the center, he or she would become a formal employee of the enterprise. They must abide relevant rules and regulations, went to work and left work as formal staff in this enterprise. Students had to complete the allocated tasks independently. At the end of each month, the college and the enterprise offered corresponding payment, based on quantity and quality of the tasks each student completed.

So far, altogether 169 teachers and students have taken part in productive practice in the center. These students have acquired required vocational competency in machining stuff and gained national technicians vocational qualification certificates. Most graduates have been employed by local enterprises with high salaries, and some of them were appointed as supervisors who are responsible for production after one year’s work. Some outstanding graduates and teachers of the Center won the golden medal and silver medal in the fourth National CNC Skill Competition in 2010.

Comments

In this case, the college imported production line from enterprise and established a standardized workshop, and the enterprise provided productive projects and technology support. All teaching and learning work can be carried out in an authentic working environment.

As participant and administrator of the workshop, the college can integrate the whole production process into teaching and learning. Based on the training objectives, teachers can select appropriate work tasks and make corresponding training plan for students. This typical experiment integrated work and learning in one process. Theory knowledge and practice skills are integrated in work and producing process by providing authentic working conditions to fit work requirements (Zhao, 2009). And students' learning outcomes have achieved great success. In this experiment, technicians of the enterprise and college teachers play double roles as producers and trainers, and students also have double roles as producer and trainees. It ensures the close connection between the college and the enterprise, and guarantee long-term effectiveness of the cooperation. Meanwhile, enterprise can expand production scale, reduce personnel cost, gain economic benefits and enhance brand influence in such cooperative mode.

Case 2: Import research and development projects from enterprises and promote college-enterprise cooperation

The college believes that students should develop not only comprehensive vocational competency and work experience to fit the requirement of enterprises but also certain innovation and design ability should be trained. Since 2008, the college has signed cooperation agreements with more than 10 small and medium-sized enterprises, such as Hangzhou Boyang Company, and imported technology research and development projects from these enterprises. The college provided a building as research and development center. Based on specific demands of each research and development project, the college and the enterprises provided needed facilities, equipment, technical material and other resources together. Considering the needs and characteristics of each project, the college arranged corresponding teachers and students to engage product design, research and development tasks together with technicians from the enterprises. Plenty of research achievements have been made during four years cooperation. For example, two national patents were gained from the project "Articulated Arm Type Measuring Machine with Six Degree of Freedom", and the production "Automotive Lighting" which developed by the college and Thai TFP Group had entered Thailand market successfully. Teachers and students of the technical center have made many achievements in various design competitions. For example, four of our college students designed "The Intelligent Controlled Electric Robot Programme"; this programme won the first prize in "The 4th Guangdong College Students Competition in Creative Design and Manufacturing".

Comments

In this case, the college import research and development projects from small and medium-sized enterprises which fit the needs of teaching and learning. A new sector is responsible for the administration of this researcher center and it runs according to the law of market. Students involve in the whole process of project research. As a result, students not only complete their theoretical study, but also develop comprehensive vocational competency and relevant work experience in this progress.

Through such kind of cooperation, the college can made full use of available resources, expand professional field, and train high quality graduates. In the cooperation, potential of specialized teachers are stimulated and and they obtain great research achievements. Small and medium-sized enterprises also get benefit from the cooperation. In these projects, staff cost is reduced, developing cycle is shortened, and they also obtain economic benefit and enhance market competitiveness.

Conclusion

College-Enterprise Cooperation is not only a mission, but also an action. As a mission, it pushes vocational college to adjust policies according to its own resources, fit the needs and interests of enterprises and attract them to take part in education and teaching progress, especially in the situation of lacking national guidable policy in school and enterprise cooperation.

As an action, it imports production lines, research and development projects from the enterprises into colleges. These experiments enhance the relationship between college and enterprises, a new sector is responsible for administration and planning and a solid and long-term cooperative relationship is guaranteed.

The following experience might have popularization value in the college-oriented vocational education and college-enterprise cooperation:

- Import production lines and research and development centers from enterprises into campus. Teaching and learning activities can be integrated with production process. Since all teaching and learning activities are carried out in the college, teaching resources can be made full of and the college can manage and supervise both production and teaching progress independently and flexibly. Small and medium-sized enterprises can make full use of equipment resources, manpower resources and technical resources. It closes the gap and realize production capacity improvement and product innovation. To college, the progress also benefits for curriculum development and action-oriented teaching.
- At beginning stage, students study in a school training center, and then they transfer to the productive workshop to work as professional staff (Zhang, 2010). Students obtain skill training and professional development in the integrated work-study process.

It has been found in the practice of this multi-win cooperation mode also has its own limits. It depends on local economic and culture development, teaching and learning facility and teachers competency. In particular, the college needs a certain number of teachers with excellent professional competency and abundant practical experience to cooperate with technicians from the enterprises.

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COMET learning tasks in practice - how to make use of learning tasks at vocational schools

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Summary: This paper describes the process of developing COMET tasks to foster competence development during a project for car mechatronics and industrial mechanics in the German *Land* of Hessen. Focussing on the development process, it treats typical aspects COMET tasks have to fulfil as well as the way to address these.

Keywords: COMET, competence development, learning tasks

Method and results

COMET projects (Rauner et al 2012) have had two connected main aims: to measure occupational competence as well as to develop it. A main tool for the latter is the use of learning tasks that have the same characteristics as the COMET test tasks, i.e. the use of complex tasks close to the realities of the world of work. These complex tasks address different dimensions of work and call for a holistic solution (fig.1). For such a complete solution, a high level of work process knowledge is required as well as the ability to weigh up the different dimensions against each other. COMET tasks do not have a yes/no-solution but a more or less adequate one.

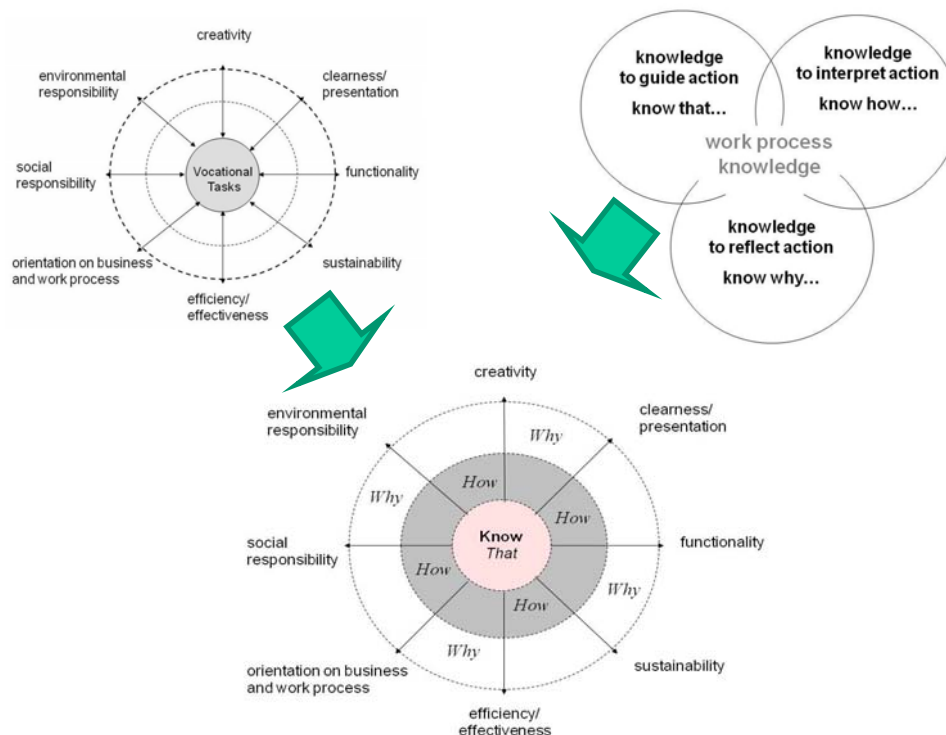


Figure 1: Dimensions of COMET tasks and work process knowledge

Already in this structure, the learning tasks show a relation to modern concepts of VET instruction. These concepts (like the idea of 'learning areas') do not focus on factual knowledge but on problem-solving, project-oriented and practical learning. Because of the growing complexity of work processes inherent in technological change and work organisation in flat hierarchies, occupational competences differ strongly from the idea of transferring factual knowledge. Thus, they aim at a different didactical concept. Introducing this approach becomes an important part of VET schools quality development - perhaps even the most important as it changes the core of instruction.

This paper will focus on the first step of such a process - the development of learning tasks. This has been done extensively during a COMET project for industrial mechanics and car mechatronics in the German Land of Hessen 2010-2012.

When developing learning tasks, one important issue is the competence, skills and knowledge of the target group. For beginners in their first year of learning, one possibility is the didactical use of 'Leittext' instructions. Here, a beginner receives detailed help and specifications, an advanced learner just the task. This method has been chosen in the COMET project electro technology 2008 (see Katzenmeyer et al. 2009). This method is not without possible pitfalls. It may lead to a sequential execution of sub-tasks where there is almost no room for reflecting on practice. Complex relations do not become apparent. The development and active use of technical terminology, too, is not facilitated.

The first pretests of COMET tasks in industrial mechanics revealed that the presentational level of the solutions was often rather poor. They stayed on descriptive level, rarely structured. To overcome this problem, detailed *Leittext* is not very helpful. Rather, the teacher has to discuss the different solutions with his students, *why* one answer is adequate and another not.

In the beginning, developing COMET tasks in the working groups of teachers was a process of trial and error. Although all materials from other projects were present as well as presentations on the COMET approach by the scientific advisory group, the group of experts first tried to create COMET tasks much in line with 'normal' learning tasks they produce or their students. The teachers were surprised, then, that these tasks showed as rather imperfect compared to the COMET standards. Task development then was accompanied by an intensive discussion process with the scientific advisors as well as external lecturers from other COMET projects and first of all discussions in the team itself. The whole process turned out to be essentially an advanced training in didactics. Discussions on every phrase and word during the development of tasks lead to a common understanding of open COMET tasks, turning the process into a systematic approach. The use of groupware for data management and collective development of the tasks turned out to be quite helpful.

It is important to not isolate the development of learning tasks from the development of a space of possible solutions. This means for all of the eight dimensions to describe typical aspects of a solution that are covering the respective dimension.

The whole process lasted until conducting the second main test, after more than a year of the project. As all team members in industrial mechanics and car mechatronics acted as raters of the open test tasks' solutions, evaluating the tests enormously helped to develop an understanding of the COMET tasks' logic. The rater training, aiming at raters' high concordance in evaluating the open tasks' solutions, was especially helpful. Here, the teachers explained to each other, why they regarded aspects of students' solutions as more or less sensible. In various iterations, tasks were rated,

Example: COMET learning task
Sun Shading Equipment for a Single-Family Home

The Situation

Four years ago, the Parker family (parents, grandparents, one child) built a new home. The southern front – made of glass – has manually controlled sunblinds out of adjustable aluminium slats (see photo). Because of a fire in the room, caused by an electric iron that was not switched off, the Parker family has to totally renovate their living room. Within this renovation, control of the sun shading equipment shall be automatised.



During a customer dialogue and an inspection of the room, the Parkers expressed the following wishes:

- „I want to control the sunblinds centrally from one place in the living room.“
- „On strong sunshine as well as in the evening on a given hour, the blinds should move down automatically.“
- „In the morning, we like to begin our day seeing the rising sun – then the blinds automatically should move upwards.“
- „As I am used to, I want to be able to iron in the living room. Is there a technical possibility that the iron automatically goes off after half an hour?“
- „We are open for further suggestions so the sun shading equipment offers even more comfort“

Assignment

It is your task to create a documentation as complete as possible in order to realise the control system. If you have to put any additional questions, e.g. to the client, the users or workers of other crafts, please write them down to prepare a meeting about these issues.

Explain the solution you suggest comprehensively and in-depth.

Please give a detailed and comprehensive explanation of your proposal, taking into account the following criteria:

- the functionality of a good complete solution
- the clear presentation of your solution so as to be able to discuss it with customers or work superiors
- the utility and economy of the proposal
- the aspects of environmental compatibility and related regulations
- the effectiveness of the process and its integration into the business operations
- the aspects of (work) safety and health
- Finally, you are always encouraged to show your creativity

Auxiliary material:

You may use all of the standard materials such as table manuals, textbooks, your own notes and a pocket calculator.

the individual ratings directly statistically compared, and discrepancies between the ratings openly discussed.

Ideally, developing learning tasks works according the following algorithm:

1. Describe concrete learning areas
2. Describe typical fields of action inside these areas
3. Find tasks for every field of action
4. Develop solution spaces for every task.
5. Formulate didactical help for every task.

Using COMET tasks as learning tasks requires some quality standards. These are e.g. the complete solution, addressing all aspects of the task. Solutions have to be justified using the adequate terminology. The tasks have to lead to thinking in complex relations and need to be close to the reality of work.

To use the tasks at VET schools means to:

- generally ask for justifications of solutions
- show the tasks' complexity
- find authentic relations to the reality of work
- focus on the role of business and work processes already at early stages of training
- make clear the importance of a solutions use value for the customer/client
- use the COMET rating categories for evaluating the tasks (this often should be done by the learners themselves)
- discuss solutions as well as evaluation criteria

Those tasks, then, offer a great variety of concrete use. Learners can work on them individually or in groups. They can work them out either focussing on planning, i.e. using paper and pencil (or computer), on building models or as a real-life product executed in a learning project that may require some weeks or months. To show the creative scope of such tasks, fig. 1 gives an example of a learning task used in the field of electro technology. Again, a multitude of solutions is possible that more or less adequately cover the needs of the clients.

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CHAPTER III

APPRENTICESHIPS IN INFORMAL CONTEXTS

Lessons learnt from informal apprenticeship initiatives in Southern and Eastern Africa

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Summary: Formal training system, in most of countries in Southern and Eastern Africa, is only the tip of an ice-berg, as most of young women and men acquire skills through informal apprentices, which is cost effective, easily accessible, have low entry barriers and results in better outcomes in terms of employment. However, informal apprenticeships have several shortcomings as well, which can lead to exploitation of young women and men. Considering the importance of informal apprenticeships for promoting youth employment, the ILO initiated a programme for upgrading informal apprenticeships. In Southern and Eastern Africa, studies were undertaken in Tanzania, Malawi, Zimbabwe and Zambia and a pilot project was implemented in Tanzania. Lessons learnt from these studies and the pilot project led to refining strategies for informal apprenticeships, which were implemented in Zimbabwe on a larger scale. The programme is highly successful and the governments of Zimbabwe and Tanzania are mainstreaming this approach as a national programme for skills development and youth employment. This paper presents findings of the studies and lessons learnt from the initiatives to upgrade informal apprenticeships.

Keywords: Informal apprenticeship, traditional apprenticeship, apprenticeship in informal economy, skills development, training, business development services, youth employment.

Introduction

Informal apprenticeship can be broadly defined as an informal system of skills transfer from a Master Craftsperson (MC) to a young apprentice who acquires skills by way of observation, imitation and repetition while working with the MC. The transfer of knowledge and skills is based on an agreement (written or verbal) between MC and apprentice in line with local community norms and practices, and the training is not regulated by law of a country.

The characteristics of this self-regulating system vary among various countries and the regions. Informal apprenticeship systems in Western African countries are much more structured than those in Southern and Eastern African countries, where an apprentice is usually referred to a 'helper' or an 'assistant' and agreement between MC and apprentice is mostly verbal and weak. Even the use of terminology can be different- Informal apprenticeship, traditional apprenticeship or even apprenticeship in the informal economy. Despite differences, Informal apprenticeships are the most prominent means to acquire skills by young persons in most of the developing countries, particularly those having a large informal economy, as it offers many advantages. But it has few shortcomings as well and thus needs interventions to overcome those and realize its true potential. This paper mentions the ILO initiatives to upgrade Informal apprenticeships in Southern and Eastern African countries to improve the outcome of training and decent work aspects, and the lessons learnt in the process. The paper is based on the studies conducted by the ILO in Tanzania,

Malawi, Zimbabwe and Zambia; projects implemented in Tanzania and Zimbabwe and the evaluations carried out by the author in various countries.

Importance of informal apprentices

Formal training system, in most of countries in Southern and Eastern Africa, is only the tip of an ice-berg, as most of young women and men acquire skills through informal apprentices, the reasons are mentioned in table 1.

Table 1: Why informal apprentices are so prevalent in Southern and Eastern African countries

Situation in Southern and Eastern African countries	Advantages of informal apprentices
Formal training systems have inadequate training capacity to meet huge social demand for acquiring skills i.e. from young women and men entering labour market and those who want to upgrade their skills.	Small and micro enterprises (SMEs) in informal economy have vast potential to impart skills to large number of young women and men.
Concentration of formal training facilities, generally, in urban areas	Informal apprentices provides youth easy access for training in nearby workplaces
Formal training focuses on meeting demand of formal economy, whereas jobs in formal economy are not sufficient to meet demand from increasing number of new entrants to labour market. In addition, quality and relevance of formal training is not sufficient to meet demand of even the formal economy.	Informal apprentices are more relevant to labour market demands, particularly informal economy, provide soft, technical & business skills, establish business networks and link with business development services. For example, in Malawi, 97 percent of apprentices got employment (Aggarwal et. al., 2010).
A large percent of youth drop out of schools, and thus they are not eligible for admission to formal training programmes.	School drop outs can access informal apprentices.
A large percent of population lives under poverty and they can't bear cost of training; governments too have insufficient resources to provide training to all.	Informal apprentices are cost effective and affordable for the poor; rather many apprentices start earning some wages after they have become proficient in performing some tasks. Governments don't spent money for informal apprentices.

Shortcomings of informal apprentices

Despite many advantages of informal apprentices, studies found that it is not the most preferred choice of youth. In Malawi, apprentices were relatively old (average age – 23.4 years), when they started apprenticeships as they tried other options for getting employment (Aggarwal et. al., 2010). Similar was the case in Tanzania- average age was 23.5 years (Nubler et. al, 2009). Shortcomings of informal apprentices as indicated by studies in the Southern and Eastern African countries are listed below:

- Quality of training provided by various master craftspersons (MCs) varies due to lack of uniform standards, variations in the technology and facilities in different enterprises, variations in the skills and knowledge of MC.
- Training is neither systematic nor structured.
- Underpinning knowledge to apprentices is not adequately provided.

- Agreement for apprenticeship between MC and an apprentice is mostly verbal and not enforceable. Therefore, exploitation of apprentices is possible as:
 - training period is clearly mentioned;
 - MC may not impart full skills set to apprentices by not allowing them to do complex tasks;
 - MCs may use apprentice as cheap labour; and
 - apprentices lack or have limited social protection.
- There is a lack of effective mechanism for quality assurance; trade associations generally do not have role in informal apprentices, unlike their counter parts in Western Africa.
- Recognition of skills acquired by apprentices and their mobility is a challenge.
- Occupational segregation along gender lines is very prominent.

Initiatives taken to improve informal apprentices system and lessons learnt

Based on the findings of various studies, the ILO initiated pilot projects in Tanzania and Zimbabwe to upgrade informal apprentices system using the following strategy.

- Strengthening the capacity of MCs by:
 - improving access to technology, markets, finance and other business development services (BDS); and
 - upgrading technical, pedagogy and business skills of MCs.
- Improving knowledge, soft, technical and business skills of apprentices by:
 - organizing short term training programmes before, during and after completion of on the job training; and
 - rotating them in various small businesses.
- Providing post training employment support to apprentices in terms of tool kits, mentorship, financial and business development services.
- Introducing contracts between MCs and apprentices and quality assurance mechanisms.
- Improving occupational safety and health and working conditions as well as awareness about HIV/ AIDS.
- Special provisions for promoting gender equality and inclusion of persons with disability.
- Strengthening the capacity of small business associations (SBAs) to:
 - function as regulators of informal apprentices and in developing training standards;
 - provide vocational & career guidance;
 - develop & register apprenticeship contracts between MCs and apprentices and resolve conflict between them;
 - monitor and evaluate quality of training;
 - carry out testing of skills and issue certificates.
- Revising national competency standards and recognition of prior learning (RPL) methods to meet the needs of informal economy.

Outcome of these initiatives have been very good and have benefitted both MCs and young persons. MCs have reported an increase in average income by 20 percent per annum, while the employment rate of apprentice is more than 90 percent. Key *lessons learnt* from these initiatives are:

- Governments should recognize the important role being played by the informal apprenticeships for skilling the youth and promoting employment. They should create conducive policy environment for upgrading informal apprentices system, provide land and sheds for MCs, ensure availability of microfinance, training and business development services (BDS) to MCs and apprentices, and publicly recognise and award best MCs and trade associations. Government should also earmark a portion of national budget and training levy for improving informal apprenticeships.
- The interventions need to be designed carefully without distorting basic principles of informal apprentices or oversaturating market with skilled workers. For example, the system has an in-built mechanism to balance demand and supply of artisans; MCs should not be influenced to recruit more apprentices than needed by them or by encouraging government or training providers to select apprentices.
- Use sectoral approach for assessing growth potential and needs for informal apprenticeships.
- Strategy and interventions should be designed after an assessment of specific needs and motivation of MCs and apprentices and should benefit both of them. Generic strategy may not be suitable for a particular target group.
- Services to MCs may preferably be provided by practitioners and through attachment of experts with a group of MCs who can demonstrate and guide use of improved practices and technology in the context of their business operation i.e providing tailor made services.
- Selection of MCs and apprentices should be done meticulously and purpose of initiatives should be clearly explained to them.
- Built partnerships and dialogue between MCs, local training institutions, financial and BDS providers, social partners and local government authorities at local levels.
- MCs should be encouraged to form trade associations and to let associations and local community perform role of a watchdog of apprenticeships.
- Closely monitor, evaluate and take remedial measures to address challenges.

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Linking informal apprenticeship and formal education in South-Eastern Nigeria through market/mechanic village schools

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Summary: The Nigerian government as well as international agencies have implemented several informal apprenticeship intervention programmes aimed at improving productivity, trade union leadership and literacy/numeracy of practitioners. One of such interventions is the Education Trust Fund (ETF) intervention in boy-child education within south-eastern Nigeria aimed at improving the Market/Mechanic Village schools (MMVS) established by UNICEF. This paper highlights the process, nature, and scope of the ETF intervention in relation to informal apprenticeship. As research methodology, the research & development (R&D) design was used for the study. Among other outcomes, the UNICEF market/mechanic village school curriculum was modified using open-learning principles by incorporating existing formal education curricula to suit circumstances of informal apprenticeship. School is taken to the apprentices rather than the apprentices to school by incorporating formal education into informal apprenticeship thus ensuring certification and enhanced social status for informal apprenticeship graduates.

Keywords: Nigeria, informal Apprenticeship, Market/Mechanic Village School (MMVS), formal education

Introduction

Informal apprenticeship remains a major component of human capital development in Nigeria. It was the only means for technical workforce development before the advent of colonial government and has disproved the projection of fizzling out with the expansion of formal sector economy. The International Labour Organization (ILO) (2000) noted that the informal sector activities remain largely outside the scope of official statistical enumeration. However, in a number of African countries, national level surveys such as Labour Force Surveys, particularly designed for the informal sector collect information about apprenticeship (ILO, 2012). The isolation of the informal sector sustains the practice of embedding local culture, traditions and customs in the incentives and programme implementation systems of informal apprenticeship (ILO, 2011). In the five south eastern states of Nigeria, for example, the increased rate of unemployment of the formal education graduates has swelled the ranks of those involved in informal apprenticeship. This is confirmed by higher boy-child dropout rate in primary and secondary schools within the five states from 90.3 per cent to 85.5 per cent from 1992 – 1995 (FME, 2002; UNICEF, 1999). The UNICEF in 1996 established the Market/Mechanic Village School (MMVS) run by the Agency for Mass Literacy as part of the intervention programme introduced to ameliorate the adverse educational impact of early boy-child dropout from schools and the unusual situation of girls outnumbering boys in that part of the country. The MMVS are located inside the cluster/massive work area (mechanic village) allocated to auto mechanics/allied trades and targets male traders/artisans who had no formal education.

The key feature of the MMVS is the interaction between learning and work/production and its location in the curriculum (Singh, 1998). The new curriculum is composed of vocational subjects and regular basic education curricula for the MMVS. Through this interaction between the workplace and a school setting, adequate attention is given to market enterprise, profit and income-generating capacity, while at the same time acknowledging the primacy of imparting related specialized technical, commercial and general competencies (knowledge, skills, attitudes and values) directly linked to employment (Iwanowitsch, 1996). The structure of the MMVS necessitates a programme that is a hybrid of formal, non-formal and informal systems of education. In the MMVS, the apprentices attend school in a location closest to their place of business thrice per week from 12.00 noon to 2.00pm while others attend from 4.00pm to 6.00pm. In spite of its seemingly flexible structure, the UNICEF out-of-school curriculum became unpopular among the MMVS students because they were restricted to only literacy/numeracy content and they did not offer any transferable certificate on the completion of the programme. The apprentices also complained about too much time for attending schools. On the other hand the regular school curriculum meant for the formal basic education is unsuitable for the age and circumstance of the apprentices. Thus the Education Trust Fund (ETF) (now Tertiary Education Trust Fund, TETFund) sought for an intervention to evolve a synergy/hybrid of the two curricula as well as address any implementation challenges.

The process of redesigning the UNICEF out-of-school and regular basic education curricula for the MMVS started with a commissioned survey (local needs analysis) and overseas study tours to The National Institute of Open Schooling (NIOS), India and Botswana College of Distance and Open Learning (BOCODOL). The experiences of these institutions in the use of open learning and information communication technology were studied in relation to how they could be adapted in MMVS. However, even for home-grown measures, there is indispensable need to involve major stakeholders in improving the intervention programme for the MMVS. According to the International Bureau Education (IBE, 2001), it takes empowerment and ownership of change to achieve effective intervention that results in a functional educational programme that can unleash people's potentials. In this instance of improving on boy-child education, the stakeholders were: traders, artisans, government officials, parents, students, academics and NGOs that participated in an interactive forum, preliminary and final curriculum critique workshops on subjects to be offered, mode of delivery, method of evaluation, types of certification and development of Memorandum of Understanding (MOU) for implementing developed programme.

The products (curricular and the MMVS intelligent tutor) of the ETF intervention have been applauded by the government and major stakeholders. The system-wide implementation is expected since the government in 2012 re-launched the boy-child education programme in south eastern Nigeria. This innovation in informal apprenticeship promises to bridge the gap between traditional informal apprenticeship and formal education in Nigeria. Hopefully, as the year 2013 unfolds and the related political issues are resolved, the next segment of the ETF intervention will mark the state wide implementation of the curricular and the MMVS software.

Methodology

The Research and Development (R&D) design was used for this study. The design consisted of taking several steps in studying an education problem. The process's end result is the development of an educational product (Gall, Gall, & Borg, 2007). The steps among others include identification of the problem, conducting instructional analysis, analysing learners and contexts, obtaining baseline data, and

curriculum review and development. The term R&D covers three activities: basic research, applied research and experimental development (UNESCO Institute for Statistics, (UIS, 2012)). It comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humanity, culture and society, and the use of this stock of knowledge to devise new applications (UIS, 2012). In this project, three-stage data collection and analysis were involved namely: survey of the general population, study tours to Botswana and India and curriculum design/development by subject-matter specialists.

This paper focuses on the third stage of the R&D process which involved 200 subject matter-specialists and 35 masters/trade union leaders in an Interactive Forum, Preliminary and Final curriculum Critique workshops. The qualitative data collected from the focus group discussions and key informant interviews were analyzed by identification of key concepts and categories, establishment of categories for structuring the data, coding the data into the categories and integration of data. Documents were analyzed by content analysis techniques. The techniques involved: delineation of the universe of content, unit analysis (words, phrases, themes, issues, etc.), establishment of code categories and coding of information (manifest and latent content).

Results

Based on the interactions with subject matter experts on various school subjects at the basic and post-basic levels, and with major stakeholders, the redesigned MMVS curricula have the following highlights:

1. Thematic restructuring of the existing two curricula (regular basic education curriculum developed by National Educational Research and Development, Council (NERDC)) and UNICEF out-of-school curriculum) into one flexible curriculum (lower and middle basic syllabi) to be completed in three years instead of six years (for apprentices and interested master craftspersons). The restructuring of the six-year NERDC curriculum into a three-year basic education curriculum took into account the higher average age and diverse prior experiences of the apprentices compared to regular school children that it was originally designed for.
2. Thematic restructuring of the existing Upper Basic and secondary school curriculum into a more flexible four-year programme instead of six years. The informal apprentices will be sitting for the first school leaving/secondary school certification examination with students of every other equivalent level of education in the country.
3. Inclusion of life coping skills themes from the old MMVS curriculum into a new subject consisting of ethics, Information Communication Technology, Health and Physical Education etc. It is meant to give the students an immediate return on investment attending the MMVS by providing the information needed to solve pressing life problems.



Figure 1: Curriculum of the MMVS

4. Inclusion of ICT-based interactive tutor (software) that supplements face-to-face instruction and ensures more flexible curriculum implementation. The MMVS Intelligent Tutor is a multithreaded platform structured on plug-in architecture. It consists of the central core, referred to as the controller, the presentation layer, the profiling engine, and the data

layer. The intelligent tutor is based on the development of the dynamic-profiled lessons that gives immediate feedback and remedial measures while studying a particular lesson. The tutors will be hosted on the MMVS website and also have the standalone version in the CDs. Furthermore, since these apprentices in MMVS could easily dropout from the lesson if given an overt negative feedback on their poor performance, the MMVS Tutor sought to redirect learners to appropriate content without explicitly allowing feedback on poor performance to discourage them from completing the lesson. The MMVS tutor is developed in Java due to Java's capability of running applications across a wide variety of computing platforms (servers, personal computers, mobile phones and other devices), robustness and, object oriented nature and the fact that Java is open source.

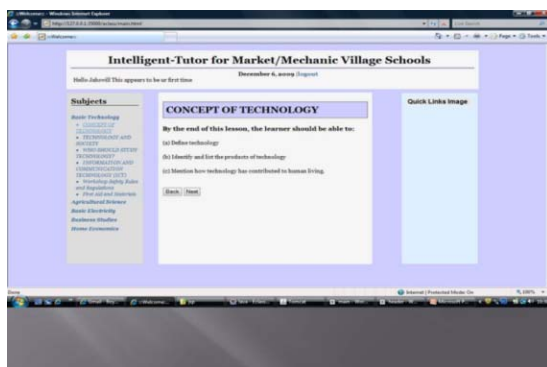


Figure 2: Screen shot of the MMVS Intelligent Tutor

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Benin: Expériences avec deux certificats formels

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Résumé: L'apprentissage dans le secteur informel est, en Afrique, le principal mode d'acquisition de compétences pour l'emploi. Au Bénin, le secteur de l'Artisanat notamment, emploie plus de trois cent mille (300 000). C'est donc un large pan du dispositif national de qualification professionnelle qui était laissé à lui-même, aux mains des artisans et de quelques mécènes composés essentiellement de partenaires financiers, d'ONG ou d'associations professionnelles. En mars 2005, deux décrets pris par le gouvernement du Bénin déclenchèrent un vaste mouvement pour l'introduction du système d'apprentissage dual dans l'enseignement technique et la formation professionnelle d'une part, et la certification des qualifications professionnelles par apprentissage d'autre part. Depuis, l'industrie de la formation professionnelle au Bénin s'est enrichie de concepts nouveaux et de démarches spécifiques, mettant en synergie une foule d'acteurs expérimentant des dispositifs de formation améliorés, dans un environnement qui se remodèle et se reconstruit progressivement.

Cadre réglementaire des deux certificats

Parmi les textes réglementaires sur la formation par apprentissage au Bénin, deux décrets font autorité en ce qui concerne les modalités de transfert de compétences et de certification des qualifications par apprentissage. Il s'agit de :

Décret n°2005-117 du 17 mars 2005 portant sur la certification des qualifications professionnelles par apprentissage

Il instaure la reconnaissance par l'Etat des compétences professionnelles, techniques et générales acquises par l'apprentissage ou l'exercice d'un métier ou d'une activité professionnelle qualifiante. Ces compétences sont certifiées par l'Etat à travers deux diplômes :

- Le Certificat de Qualification Professionnelle (CQP) ouvert aux candidats des deux sexes remplissant les conditions spécifiques de compétences acquises et les niveaux d'exigences requis pour l'exercice d'un métier pour l'obtention dudit diplôme.
- Le Certificat de Qualification aux Métiers (CQM) ouvert aux apprentis des deux sexes ayant suivi une formation professionnelle d'une durée conforme à celle fixée par les corps de métiers. Il devra progressivement remplacer le diplôme dit de « libération » délivré par les maîtres artisans.

Décret n° 2005-118 portant sur l'orientation et l'introduction du système d'apprentissage dual dans l'enseignement technique et la formation professionnelle au Bénin

Aux termes de ce décret, l'apprentissage de type dual est une formation professionnelle initiale dont la responsabilité est partagée entre les institutions de l'Etat et les organisations du secteur privé. C'est un système de formation dont le principe

consiste à compléter les connaissances théoriques et pratiques de l'apprenti par une formation plus approfondie dans un centre de formation professionnelle.

Il est ouvert aux apprentis des deux sexes remplissant les conditions spécifiques ci-après :

- Etre âgé de 14 ans au moins sauf dérogation de l'inspecteur de travail
- Etre titulaire d'un contrat d'apprentissage écrit et conforme à la loi
- Avoir le niveau minimum d'instruction du Cours Moyen
- Réussir au test de sélection.

Cette formation qui dure trois ans est ouverte aux :

- Métiers liés aux filières existantes dans les lycées et collèges des enseignements techniques (industriel et agricole), les centres de métiers publics et privés ;
- Métiers du secteur de l'artisanat, de l'agriculture, de l'élevage et de la pêche ;
- Métiers de la santé à caractère non médical ;
- Métiers de transport, du commerce, de l'hôtellerie et du tourisme ;
- Métiers liés aux nouvelles filières porteuses induites par l'évolution des NTIC

Le volet de la formation complémentaire du système d'apprentissage dual a une durée de trois ans à raison de 32 semaines par année de formation dans le centre, soit une masse horaire de 200 heures. Elle est réservée aux candidats au CQP. L'obtention du CQM ne donne lieu à aucune formation complémentaire dans un centre de formation en dehors de l'atelier du maître artisan.

Schéma conceptuel de la certification des qualifications professionnelles par apprentissage

Un dispositif en quatre étapes décrit comme ci-dessous dans le schéma méthodologique de mises en œuvre des deux formes de certification.

Figure 1: Schéma de la certification des compétences acquises par apprentissage informel

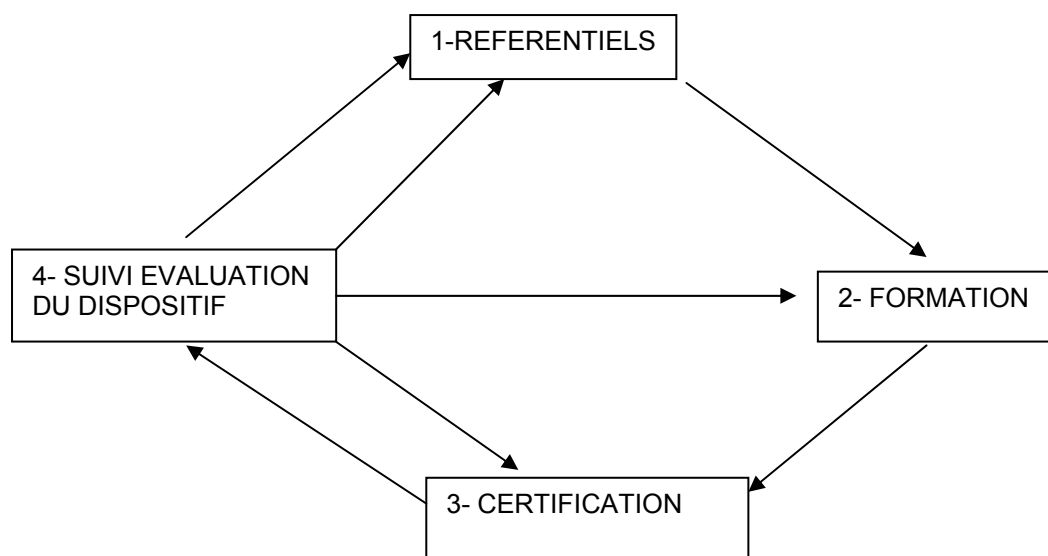


Tableau 1: Description des 4 étapes du schéma de certification

Etapes	Contenu	CQP	CQM
Référentiels	Compétences	Chartes de compétences	Matrices de compétences
	Formation	Programmes de formation	Non exigé Remarque : La formation pour l'obtention du CQM se déroule seulement par la pratique dans les ateliers des maîtres artisans
Formation	Formation des formateurs des centres	Andragogie	Non exigé
	Formation des formateurs	Andragogie et techniques de production	Non exigé
	Formation des maîtres artisans des ateliers d'apprentissage	Andragogie et techniques de production	Andragogie et techniques de production
	Formation des apprentis	Par semaine, cinq jours dans les ateliers des maîtres artisans et un jour dans un centre de formation	Toute la formation se déroule pendant le cycle d'apprentissage dans les ateliers des maîtres artisans
Certification	Organisation	Une fois par an	Deux fois par an
	Ancrage	National	Local (commune)
	Epreuves Théoriques	Pondéré à 30%	Non exigé
	Epreuves pratiques	Pondéré à 70%	Pondéré à 100%
Suivi-évaluation	Suivi de mise en œuvre des programmes dans les centres de formation et dans les ateliers	- Formateurs de suivi - Inspecteurs de l'enseignement Technique et de la formation professionnelle - DFQP - FODEFCA - Swisscontact	- Commissions professionnelles - Point focal artisanat de la Mairie - Parents d'apprentis
	Evaluation intermédiaire des compétences	- Formateurs des centres - Formateurs endogènes - Formateurs de suivi	- Commissions professionnelles - Point focal artisanat de la commune
	Evaluation finale des compétences	- Commission nationale de supervision - Jurys d'examen	- Commissions d'organisation au niveau des communes - Jurys d'examen
	Evaluation du dispositif	Experts évaluateurs commis par l'Etat et/ou les partenaires techniques et financiers ayant investi ou cherchant à investir dans l'ensemble ou sur un volet du dispositif	Experts évaluateurs commis par l'Etat et/ou les partenaires techniques et financiers ayant investi ou cherchant à investir dans l'ensemble ou sur un volet du dispositif

Financement de la formation par apprentissage

Le schéma du financement de la formation par apprentissage est un dispositif multipolaire où les partenaires interviennent à des degrés divers dans un mécanisme de partage des coûts. De façon générale, les étapes d'élaboration des référentiels de compétences et formation ainsi que celles de la formation des différentes catégories de formateurs sont à la charge de l'Etat et des partenaires techniques et financiers dont notamment Swisscontact, la Coopération Suisse, la Coopération française, la DANIDA et le Bureau International du Travail.

Par contre, les formations en techniques de production des maîtres artisans et des apprentis sont supportées en grande partie par le FODEFCA (90%) et les bénéficiaires (10%). Lorsque ces formations sont directement exécutées par les partenaires, très souvent, il n'y a pas de partage de coût.

Tableau 2: Evolution des effectifs et des métiers du CQP

ANNEES	Niveau 1	Niveau 2	Niveau 3	Total	Métiers
2003	160	--	--	160	Mécanique 2 roues
2004	388	122	--	510	Mécanique 2 roues, Coiffure, Coupe-Couture (03)
2005	573	272	86	931	Mécanique 2 roues, Coupe-Couture, Coiffure, Froid et climatisation (04)
2006	712	401	190	1303	Mécanique 2 roues; Coupe-Couture; Coiffure; Electricité; Plomberie; Froid et climatisation; Maçonnerie (07)
2007	979	698	281	2618	Mécanique 2 roues; Coupe-Couture; Coiffure; Electricité; Plomberie; Maçonnerie; Menuiserie, Froid et climatisation; Construction métallique (09)
2008	1265	1460	609	3334	Mécanique 2 roues; Coupe-Couture; Coiffure; Electricité; Plomberie; Maçonnerie; Menuiserie, Froid et climatisation;
2009	1481	1170	1231	3882	Mécanique auto, Construction métallique, Tissage (11)
2010	1143	1328	1025	3496	Mécanique 2 roues; Coupe-Couture; Coiffure; Froid et climatisation; Plomberie; Maçonnerie; Electricité; Menuiserie, Mécanique auto, Construction métallique, Tissage, Photographie (12)
2011	--	952	1089	2041	Mécanique 2 roues; Coupe-Couture; Coiffure; Froid et climatisation; Plomberie; Maçonnerie; Electricité; Menuiserie, Mécanique auto, Construction métallique, Tissage, Photographie
2012	2 360	1 180	879	879	Mécanique 2 roues; Coupe-Couture; Coiffure; Froid et climatisation; Plomberie; Maçonnerie; Electricité; Menuiserie, Mécanique auto, Construction métallique, Tissage, Photographie

Les chiffres ci-dessus montrent que les effectifs ont été en constante progression de 2003 à 2010. En 2011, il y eut une baisse parce que tous les candidats admis au test de recrutement n'ont pu obtenir le financement pour leur formation. En effet, suite au retrait du financement de la DANIDA, (Projet d'Appui au Secteur de l'Education au Bénin) les ressources allouées au FODEFCA pour couvrir les besoins en formation ont été réduite de moitié.

Conclusion et perspectives

L'introduction des deux certificats pour reconnaître les qualifications acquises au moyen de la formation par apprentissage apparaît comme un début de formalisation du secteur informel par l'ingénierie des compétences. L'adhésion des partenaires techniques et financiers et des acteurs étatiques et non étatiques en assure le succès. Toutefois, le démarrage tardif du CQM (programmé pour 2013) et le nombre restreint de métiers dont les référentiels sont élaborés (13 pour le CQP et une cinquantaine pour le CQM) par rapport au nombre de métiers concernés atténuent la popularité du dispositif. Des efforts restent donc à faire pour la mobilisation des ressources nécessaires pour généraliser l'expérience.

"Upgrading informal apprenticeship in Egypt - a formalized approach with off-the-job learning"

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Summary: Apprenticeship is considered the oldest means for acquiring vocational skills and the transmission of experience in many crafts. Despite changes in labor market needs, apprenticeship as a method of work and learning is still being practiced and contributes to the transmission of skills from one generation to another. That is why the Egyptian Government calls for promoting and raising the level and effectiveness of this kind of vocational training, which would in turn improve the performance of the enterprise and increase its productivity and quality. This document presents the achievements made up till now in collaboration with ILO.

Keywords: Egypt, informal apprenticeship, curriculum

Introduction

A project for "Upgrading Informal Apprenticeship" will support the Ministry of Manpower and Migration (MoMM) in addressing youth unemployment and combating the worst forms of child labour by regularizing the training relationship through a tripartite contract, setting skill standards, tracking training progress on the job and introducing an "Off the Job" learning and training component. The project's approach includes enhancing working conditions in the engaged enterprises, and provides social protection to youngsters who choose to work and train in private businesses. This project focuses on establishing and organizing the relationships between all parties and beneficiaries involved: Employers, Apprentices and Government agencies, including empowering the MoMM regulations and other Child Labor Laws. It also aims to stimulate the Civil Society represented by partner NGOs to play an active role in providing social protection to involved members. The pilot program targets 6000 apprentices from the age group 14– 18 years joining work in the private enterprises which carry out their activities in 10 governorates. Of this target group, about 30% are girls and 5% are people with disabilities.

The project actions in brief:

- Building on labour market information and a quick situational analysis, the project decided to pilot by selecting 8 – 10 apprenticeship occupations in each governorate – attractive to both male and female youth – and in sectors and activities that serve the governorate's investment objectives.
- Civil society participates in the project implementation through partner NGOs selected based on their expertise in implementing community-based activities related to improving working environments.
- A high-level Steering Committee to be established in each governorate with tripartite representation from the three main stakeholders: Government - Employers – Workers, including representatives from the community and the governorate.

- The Steering Committee will select one or more entities from among those institutions enjoying high community status and good reputation in the governorate to collaborate in publicizing the project in the governorate.
- When an enterprise joins the “Apprenticeship Program”, the employer registers him/her as an apprentice (gradient trainee worker).
- The employer or his authorized representative will sign an apprenticeship agreement with the apprentice’s parent or guardian. This agreement will also include the Manpower Directorate manager as one of its signatories.
- Once an apprentice joins the program, he/she acquires professional skills by working alongside a master craftsperson in the enterprise. Successfully acquired skills will be recorded in a “Skills Scorecard”.
- The apprentice registered in the program shall enjoy health and accident insurance and benefit from the technical support provided by the project.
- The apprentice will attend a one-day per week training program to be held outside the workplace offering: aspects of occupational health and safety, the behavioral benefits of learning in the workplace, labor rights, conflict resolution and environmental awareness. This program provides the additional soft skills and competences that are not necessarily linked to a specific profession.
- At the same time, the project will offer illiterate apprentice and mentors literacy classes in collaboration with the Agency for Illiteracy Eradication & Adult Learning Authority.
- Apprentices and their mentors will also be allowed field visits to large projects to get acquainted with skills of the profession and its future in the labor market.
- The enterprises will receive “Occupational Safety and Health” OSH equipment, each depending on the nature of their respective activities. Workers and apprentices will be trained accordingly.
- Employer or master craftsperson overseeing apprentices will receive a free training course as needed for developing practical and technical skills.
- The top performing enterprises that are engaged in the project will be publically rewarded, and will receive a token and a certificate of appreciation to be displayed in their workplaces.
- By the end of the apprenticeship program, a public ceremony will be organized and awards granted. Graduates will receive certificates that are endorsed and stamped by MOMM and carry the logos of partner organizations, in order to increase its marketing value.

Apprenticeship curriculum development

The program introduced an alternation between on- and off-the-job learning (including sport) – which aims at creating an effective learning path for the target group of young apprentices. On completion of the proposed modules, a successful apprentice would acquire: work ethics, a right attitude, initiative, knowledge of risks and hazards at work, social responsibility, and environmental awareness. This will enable the apprentice to graduate as a competent well groomed future industrial worker with a clear career path, or even as a potential future micro entrepreneur.

Rationale and methodology of proposed modules for 'off-the-job' learning

The cornerstone of our proposed methodology is to build a positive, dynamic and rewarding learning environment to motivate apprentices, who might have left school contexts a long time ago. Quality education results in a productive and beneficial experience for learners and leads to their all-round development, enabling them to apply knowledge and skills in their everyday life at work or at leisure.

First, it is important to stimulate the young person's interest in additional learning.

Second, as a way to maintain interest, teaching methods are 'natural', as opposed to conventional scenarios where 'restraint' and 'pressure' are often the norms.

Third, the off-the-job learning benefits from a wide variety of teaching and learning methods in all the topics of the selected modules. Since the learner's interest is the basis of his or her concentration, methods alternate between discussions, team work, games, audio-visuals, individual or collective production, and role plays among others. This also develops the apprentice's co-operative, linguistic, social and communication skills. Learning sessions are designed to be interactive.

Fourth, the methodology, 'learning by doing' is applied - rightly considered by leading educationists to be the most permanent and effective form of learning, specifically in the context of vocational education and training. All five physical senses will be activated. Traditional academic teaching centers predominantly on the first 2 senses (see, hear), which limited learner participation and development of learners' abilities. Through creating a fruitful learning environment we bring about desired development of apprentices.

Module topics and number of allotted hours

Allocation of total number of hours for each module is based on the importance of the discipline, as well as the profile of the target group. Module topics are either 5 or 10, corresponding to 20 or 40 hours adding up to a total of 300 assigned hours.

Proposed modules are: 1. Life Skills; 2. Numeracy; 3. Occupational Safety & Health; 4. Green Skills; 5. Information & Communication Skills; 6. Labor Rights; 7. Career Guidance; and 8. Entrepreneurial Skills.

Continuous assessment

The methodology lays importance on continuous formative assessment of apprentices throughout their learning period in all the modules. In order to provide constructive and timely guidance and enable a sustained development of apprentices, assessments happen at the end of each topic to ensure a system of continuous evaluation and feedback. These consist of learning module-related micro assignments which can be carried out at the apprentices' workplace (or during their leisure or both), individual and/or group exercises, comprehension and practice of topic exercises, oral and/or written evidence of topic knowledge among others.

Learner's portfolio

As an integral and crucial part of the learning and assessment process, apprentices prepare an individual portfolio containing evidence of all learning and assessment materials for all the topics covered in the proposed modules.

Summative evaluation

A 'star rated' skills score card is proposed at the end of each module to record the overall performance of the apprentice. The score card will provide evidence of an apprentice's learning achievements on completion of planned the modules. Assigned

trainers provide a qualitative assessment against each completed module to determine their summative off-the-job learning competences. Stakeholders will endorse the skills card of successful apprentices.

Main accomplishments (up to date):

1. Developed a “*Concept Note*” to assist in generating the appropriate procedure and recommendations that helps decision-makers take the appropriate interventions for upgrading the apprenticeship system.
2. Finalized the “*Implementation Plan*” covering project activities over the next 2 years. Finalized a *survey in seven* Governorates to select the occupations. The criteria for the selection of apprenticeship occupations includes: The existing demand and geographical concentration of businesses, as well as the attractiveness of career for youngsters regarding working conditions and future wage level.
3. Developed a Tripartite “*Modern Apprenticeship Contract*” regulating the relationship between the employer and the apprentice and endorsed by MoMM.
4. Formed a team of TVET specialists to develop “*Skill Standards*” using the “DACUM” analysis. They designed a “*Skills Score-Card*” to be used for assessing the progress of training.
5. Developed the “*off the job*” training modules.
6. Coordinated with NGOs working in each governorates, and selection of CDAs based on their previous collaboration in developing programs with Project Partners. (The WFP Project on Combating Exploitative Child Labor through Education in Egypt; and the ILO Pilot of Continuous Apprenticeship Project).
7. Established local partnerships to form the “*Program Steering Committee*” in the engaged Governorates on tripartite bases, and including reputable institutions.
8. Liaised with the Agency for Illiteracy Eradication & Adult Learning.
9. Conducted a “*Needs Assessment Survey*”, and implementing the OSH component.
10. Formed a team of Trainers to cascade training for the “*off the job*” modules.

Main challenges:

- Due to the implications of the current political situation on decision making in Egypt and due to the continued unsettled conflicts it has been difficult to launch the pilot project in the engaged governorates.
- Many enterprises have incomplete legality and lack the required licensing documents while having potential for providing training.
- Lack of awareness of the importance of vocational training and the reluctance of youth to avail training opportunities.
- Changing community culture and perceptions to vocational craft work.
- Lack of mechanisms for disseminating good experiences in apprenticeship and vocational training.
- Apprentices have no social and health protection.
- Businesses do not comply with health and safety regulations.
- Possible discrimination in recruitment of women and people with special needs or disabilities, etc.

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Policy options for improving informal apprenticeship - Experiences from Ghana -

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Summary: Almost twenty five years after the World Conference on Education For All (EFA) in Jomtien, the EFA policies have started to result in some of the largest cohorts of primary and Junior High School (JHS) leavers ever witnessed in Ghana. This is occurring at a time when Ghana's formal sector is unable to generate sufficient formal employment and income opportunities, resulting in high youth unemployment. In addressing these issues, a Government White Paper on Education Reform (2004) recommended the setting up of National Apprenticeship Program. This program is targeted at JHS graduates who could not get access to Senior High School (SHS) to be given employable skills through traditional/informal apprenticeship. It further recommended a period of one year for the program implementation and the cost to be borne by the Government of Ghana. The program aims to expand access in education making appropriate apprenticeship part of secondary education.

Keywords: Apprenticeship, informal sector, youth unemployment

Introduction

In response to the Jomtien Declaration, the Government of Ghana (GoG) in the 1990s launched a program focusing primarily on access, the Free, Compulsory and Universal Basic Education (FCUBE) program. By the mid-2000s, the FCUBE started to result in some of the largest cohorts of primary and JHS school leavers ever witnessed in Ghana. The rapid expansion of enrolment in primary and JHS education as part of the Education for All (EFA) process has led to concerns about the youth population who do not have a chance to continue their education beyond Junior High School (JHS), hence an increased demand for post-basic¹ education opportunities.

Policy makers and politicians have responded to this demand by proposing dramatically increased support to post-basic levels, including Technical and Vocational Skills Development (TVSD). The major drivers for the government's interest in technical and vocational skills development are divided between social and economic considerations: the social concerns include the increased demand for post-basic education and training opportunities by the individual students and their families; and, concerns about unemployment among the youth (World Bank, 2008a). The issue of unemployed JHS graduates who are unable to take up further education and training either because of scarce places or due to lack of information or weak performance is a serious concern to government at the highest level – as is the fact that the majority of JHS graduates end up working in low productive informal jobs. Table 1 shows the transition from JHS to SHS over a seven year period.

¹ Under the new education reforms, introduced in September 2007, basic education in Ghana consists of 2 years of KG, 6 years of primary and 4 years of junior high school. However the 4 year duration for JHS was changed to 3 years in 2009.

Table 1: Transition from JHS to SHS

Indicators/ Year	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Enrolment Total JHS	984,111	1,048,367	1,121,887	1,170,801	1,224,964	1,285,577	1,301,940
Enrolment Total SHS	328,428	333,002	384,455	485,742	454,681	490,334	537,332
Early Leavers	655,683	715,365	737,432	685,059	770,783	795,243	764,608
% of Early Leavers	67%	68%	66%	59%	63%	62%	59%

Source: Ghana Education Service

Youth unemployment

The early leavers from JHS to SHS include those who enrolled at the JHS level but could not finish and those who finished but could not continue to SHS. It is however estimated that out of those who finished JHS about 45% continue to SHS and out of the 55% of the graduates who are unable to enter SHS, only 7% continue to formal TVET institutions, with about 10% going to private and informal TVSD including traditional apprenticeship. Majority of this group are “*Not Employed, Not in Education and Not in Training*” (NEET).

As per the World Development Indicator Database (2012), the unemployment rate in Ghana is 8.2%, while the youth unemployment rate is 15.7%. Policy makers and politicians have responded to this by proposing dramatically increased support to post-basic levels, particularly TVSD, which has resulted in an increased demand for post-basic education and training opportunities. (Palmer, 2005, 2009b)

Government's response

The Government of Ghana established an Education Reform Committee to review the entire educational system in the country and make it more responsive to current challenges. The Committee was required to examine the structure of education and to discuss issues affecting the development and delivery, the constrained access to different levels of the educational ladder, Information and Communication Technology (ICT) and Distance Education, professional development, and the management and financing of education, in addition to other cross-cutting issues. The Committee was established in 2002 under the chairmanship of Prof Anamuah Mensah with 29 knowledgeable stakeholders from public and private sectors.

The Committee's recommendation on apprenticeship

On apprenticeship, the Committee stated that: The large number of youth who drop out of Primary, and JSS school-line, is a source of worry to government. It reinforces Government's conviction about the urgent need to restructure the current officially disengaged attitude towards their participation in the world of work generally and their adult/family life. Apprenticeship to acquire proficiency in the numerous areas of skill, industry and craftsmanship is today dominated by the Private Sector. Henceforth, it will become a commitment of the State to partner with the private sector in a more systematic way to promote apprenticeship programmes. Government will assume full responsibility for the first year of the apprenticeship programme.

It further stated that Government accordingly accepts the recommendations of the Committee and further has decided to:

- constitute a National Apprentice Training Board, among other things, to oversee and regulate apprentice training and handle issues concerning registration, content, duration and certification;

- formalize community-based apprentice training schemes in all Districts to cater for the youth.
- support institutions such as the Regional Technology Transfer Centres (RTTCs) and Ghana Regional Appropriate Technology Industrial Service (GRATIS), ICCES, Opportunities Industrialisation Centres (OIC), Youth Leadership Institutes, the Private Sector and other organizations including NGOs to increase capacity and expand enrolment of apprentices.

It also stated that: “The financial commitments, which the state makes to second-cycle education in general education, agricultural, vocational and technical institutions should now be matched by commitments to industry-based apprenticeship and training”.

The National Apprenticeship Program (NAP) Committee

In line with the recommendations made by National Education Reform Implementation Committee (NERIC) which led to the establishment of the Council for Technical and Vocational Education and Training (COTVET), and in pursuance of one of its mandates to operationalize the national apprenticeship program, a sub-committee on the COTVET Board was formed in 2009. The Committee is the policy formulation and supervision body for Apprenticeship. Its overall function is to advise the COTVET Board on and how to do all things necessary for the maintenance of a credible, effective and efficient TVET Apprenticeship.

The implementation

The initiative was announced through local radio and newspapers. Task forces were formed in the various districts comprising of representatives from the District Education Office, District Assembly and the specific trade area. The task force also visited various religious bodies to inform them about this initiative. For the first phase of the program, the NAP Committee in consultation with the National Development Planning Commission and the various trade associations agreed on four trade areas for the implementation. In preparation for the training of the apprentices and in line with the adoption of competency based training for TVSD delivery in Ghana, selected master craft persons underwent a two week training program to equip them for the training of the apprentices (see table 2).

Table 2: No of Master Craft Persons Trained by Gender in the Four Trade Areas

TRADE	NO OF FEMALES	NO OF MALES	TOTAL
Auto Mechanics	00	250	250
Cosmetology/ Hair dressing	265	05	270
Electronics	02	263	265
Tailoring and dressmaking	220	40	260
TOTAL	487	558	1,045

Topics treated during the training program included; health and safety, appropriate tools, choice of materials, Competency Based Training (CBT) delivery and specific technical subjects relevant to the trade area. The task force then conducted interviews after the applicants had submitted the filled forms. The interviews were based mainly on applicant’s interest in the chosen trade area, parental concern and proximity to the training site. At the end of the interview, 5,000 applicants were chosen to start the first phase of the NAP.

Alignment with the National TVET Qualifications Framework (NTVETQF)

The training and its assessment are aligned with the NTVETQF so that the graduates can obtain certificates at the 2nd (Proficiency 2) and 3rd (Certificate 1) levels of the NTVETQF. To be able to succeed at these levels, the graduates have to demonstrate a broad knowledge base incorporating some technical concepts, demonstrate knowledge of the theoretical basis of practical skills and also demonstrate basic numeracy, literacy and IT skills. As a result, occupational standards, unit specifications and learning materials are developed specifically for this training.

Evaluation of the training

The Council has signed a Memorandum of Partnership with Innovations for Poverty Actions (IPA), a United States based non-profit organization that specializes in creating, evaluating, and replicating innovative solutions to development problems, for IPA to undertake an independent evaluation of the program with its impact and to disseminate the findings. The results would be ready for dissemination towards the latter part of the year 2013.

Challenges

The program as innovative as it may be faced a number of challenges during implementation. These included:

- Lack of awareness of the program to the target group in the rural areas.
- The program is targeted to JHS graduates who could not get access to SHS, however it did not state when the person graduated, as a result people who graduated from JHS about 10 years ago also applied.
- The duration of the program seems too short as most apprenticeships take an average period of three years but this is for a one year period.
- Oversubscribing of some trade areas (cosmetology, garment making).
- Proximity of training places to where the apprentices live
- Identification of committed master craft persons to undergo training for the program implementation
- Lack of commitment from the District Assembly authorities and the District Education offices.

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Vocational skills formation in the informal economy in Tanzania

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Summary: The paper presents and discusses vocational skills formation that takes place in the informal economy in Tanzania. It draws on a qualitative field study artisan communities in the seven crafts and trades basketry, car mechanics, carpentry, charcoal stove making, mattress making, “paper craft” and radio repair. Characteristics of the formation were a formation based on daily orders, reversed formation and production processes, common formation instrument as observation in practice while specific apprentices asking question within the motor vehicle mechanical trade, hand-on-hand within the stove making. The value of trust was central for the operations. It is argued that the formation took place in a specific form of apprenticeship which is loose in its frames as contrast to the West African traditional apprenticeship with its formal contracts, training periods and certification.

Keywords: Skills formation, informal economy, Tanzania, apprenticeship

Introduction

The paper sets out to give an account of skills formation in the informal economy of Tanzania based on an empirical study of artisan communities within the seven crafts and trades, basketry, car mechanics, carpentry, charcoal stove making, mattress making, “paper craft” and radio repair. The term skill-formation was understood to mean a process whereby individuals develop the skills necessary for everyday life and gainful employment (Ashton and Sung 2002) and focus was on form and content. By form and content in their turn were understood tasks, activities, tools and social organization related to concrete social and material circumstances (Levinsson and Holland 1996). The body of research on the Tanzanian informal economy is substantial regarding size, composition, conditions and the origin of the operators (see for example Malyamkono & Bagachwa 1991; Livigia & Mekacha 1998; Mnewa & Maliti 2010) however little is known on production processes and the pedagogical principles supporting them a gap which the study discussed here attempted to fill.¹

The notion of informal economy was used instead of informal sector in order to avoid addressing the informality as confined to a specific sector of economic activity but rather cut across many sectors. This aligns with the early notion of a second economy by the Tanzanian researchers Malyamkono and Bagachwa (1991). They coined the notion “the second economy” to cover the broadening and intensification of informal activities in almost every aspect of economic life and argued that this economy includes all production and exchange activities that, under current conventions, are not measured by national statistics. The definition used in its turn adhered to the definition by the Tanzanian Integrated Labour Force Survey of 2006 which defined the informal sector as being part of household enterprises of unincorporated

¹ The study was part of the author’s doctoral dissertation which also focused on skills formation in primary schooling in the school subject Stadi a Kazi as well as attempted to answer the question: How can the relationship between skills formation in the two cultural contexts be conceptualized?

enterprises owned by households with the following characteristics: not being separate legal entities, not keeping a complete set of accounts, activities might be carried out inside or outside the owners home, and at least some of the produced goods or services should be for sale.

Methodology

Artisans were interviewed and observed on their premises. On average, three sessions of intertwined observing and questioning took place covering the following broad areas: entrance to the craft/trade, operations (products, raw materials, tools, and working process), apprentices and skills formation (curriculum and practices), market (customers) and community (shared repertoire of routines, tools, and ethics). Interviews were also made with apprentices focusing on the skills-formation process, the motive for undertaking an apprenticeship and the qualities required to learn the craft/trade. Still photographs were taken of work processes, tools and materials. The photographs and previous interviews formed the basis of the subsequent interviews and observations. A set of photos illustrating steps and activities in the production process were shown to the artisans, who were then asked to arrange the photos according to how the process unfolds and to discuss problematic steps in the process. In the same way the apprentices were asked to arrange the same set of photos according to the skills formation process. In this way, the still photos became an integral part of the work and provided a means of enhancing the artisans' communication about their own work as well as the apprentices' communication about their skills development

Results – the artisan communities

The artisan communities in average had ten years of operation and between three to 21 apprentices attached. Family heritage and acceptance of apprentices on kinship basis which is usually connected to traditional apprenticeship was rather weak. Still the mattress makers and charcoal stove makers had inherited the craft/trade but from elders in the ward in which they were living. The apprentices had with few exceptions completed primary school and the masters themselves were also primary school leavers and had in general had some other type of job before engaging in the craft/trade or been apprentices themselves. This pattern aligns with common pathway to self-employment that includes a few years of work after completion of schooling before establishing an enterprise (Mc Grath & King 1997; Barasa & Kaabwe 2001; Adams 2008).

Formation practices and processes

The formation practices were built on an apprenticeship scheme that was loose in its framework. Apprentices were accepted on the basis of a mutual understanding and not a written contract. In most cases the acceptance contained a scrutinizing process which could be considered as a legitimating action but also as representing the issue of trust. Within carpentry a "godfather" was required and within garage and radio repair the artisans had recently started to charge an entrance fee and ask the apprentice to bring some tools.

Within the overall milieu, apprentices were assigned to one of the masters for the whole training period, for example, within the mattress community, or sometimes to one master per day at the garage. There was no specific length stated for learning the various crafts and trades and the duration was not fixed in advance. In most cases the apprentice would be asked to stay on as a full member of the community after completion, but would also be free to leave and establish his own business.

The skills formation was based on daily orders with one exception the mattress-making. Mattresses were produced whenever the weather conditions allowed and were stored for future selling. The mattress community was unique in another sense as well, it embraced a division of labor, the mattress-makers and their apprentices who made the actual mattresses and contracted laborers who, together with apprentices, fetched and sorted the raw materials. The laborers also watched over the ready-made mattresses exhibited along the road for sale. Sewing the covers was done by mattress-makers who specialized in this work or by contracted tailors, and managers dealt with sales agreements with the big customers, the wholesalers.

The skills formation process and the production processes (leaving out the business stages i.e. receiving the customer, purchasing raw materials and selling) were to varying extents reversed. For example, one of the first tasks for the apprentice in carpentry was to smooth the surfaces of ready-made beds, tables or cupboards (the finishing stage). By doing this, the apprentice got the feeling of the final product before embarking on the task of making one and developed an overall sense of meaning, viewing the whole process to be mastered. This reversed production and formation process is well documented in the studies by Lave of tailoring in Liberian communities (Lave 1989). It is however not possible to draw the conclusion that the reversed process is a specific characteristic of skills formation within informal economy enterprises. Palmer (2007) in his study in Ghana found that a new apprentice was initially given simpler tasks to perform often unrelated to the trade e.g. running errands, cleaning, washing, and fetching water.

Common formation instruments that were used within all crafts and trades were instructing, co-working, apprentices observing in practice and doing individually. Craft/trade specific ones were hand-on-hand within the charcoal stove makers and apprentices asking questions within the garage. Hand-on-hand was used by the stove makers for the apprentice to get the feel of the materials' responses to the movements when cutting the scrap metal. Within the garage (car mechanics) skills formation relied heavily on the apprentices asking questions. The initiative lay with the apprentice which breaks with the skills formation of traditional apprenticeship, which involves a submissive trait, in relation to both skills and social order and made the apprentices responsible for their own learning.

Written texts were almost totally absent within the artisan communities, both for consulting and for recording. The only reference to texts was within the radio repair. Customers sometimes brought manuals and trouble-shooting charts that normally follow with the purchase of electronics. Still, the artisans seldom used them as they were written in English and their primary-school English was not good enough to be able to understand them.

The most central value that the artisans articulated during the interviews was trust and to be trustworthy. It was particularly stressed by the artisans in the two more modern trades, car mechanics and radio repair. Within these trades the communities relied on cooperation with other artisan communities for borrowing tools and providing assistance in problem solving which was done on mutual trust and did not involve any payments. The mattress communities had even established common guidelines or rules focusing on avoiding abusive language, theft, violence, and creating chaos and misunderstanding and if anyone should break them, he or she would be given a fine or be expelled from the group.

Concluding

It is concluded that the skills formation took place in a specific form of apprenticeship that seems to be common within the informal economy in Tanzania and which some

researchers refer to as informal apprenticeship (Nubler et.al 2009). It is loose in its framework and thus differs from the more formal West African one encompassing a contractual agreement, a specific training period and a certification (Palmer 2009). The specific form is further argued to link both to traditional and to late modern forms of apprenticeship. By traditional is referred to apprenticeship in the form of guilds and communities encompassing mutual obligations, collective support and protectionism that has been associated with pre-industrial societies. Late modern forms in their turn are referred to the apprenticeships that are part of new post-fordist ways of production and a return to artisanal autonomy (Guile & Young 1998).

In spite of the common apprenticeship framework of the crafts and trades it is concluded that the skills formation practices and processes to some extent were unique for each craft and trade. This has implications for the on-going discussion on formalizing the informal formation and raises the question if a formalizing can adhere to the uniqueness and keep what is working well.

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Informal collaborative learning opportunities at Mozambique's TVET institutions and industry

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Summary: This study paper discusses the current approaches to prevailing neglect of informal learning both at TVET institutions and industry in Mozambique. A qualitative small-scale case study was conducted to collect data based on 17 respondents in Maputo. Eraut (1994) indicates that “learning happens on a daily basis almost from birth. Learning (...) takes place at work, formally or informally” vis-à-vis outside workplace to meet its commercial needs, improve practice (Pickerden 2004). The emerging results show that informal learning conceptually encompasses setting clear vision and mission; operationalize and codified informal learning culture; research, development and utilisation of knowledge; situated learning and employee and employer's contract. Thus, the link between work-based learning and opportunities for informal collaborative learning allows a more reflective learner-based control of the experienced informal learning (Fominykh et. al. 2012) that occurs in irregular time and space patterns.

Keywords: Mozambique, informal, collaborative learning, coded-learning experiences

Introduction

This research study paper discusses the current situation and different approaches to prevailing neglect of informal learning both at technical vocational education a training (TVET) institutions and industry in Mozambique. How the TVET institutions and industry should be convinced to acknowledge that there are useful informal learning settings? Theoretically speaking, informal learning concept at workplace is an elusive and yet hard to define. For example, Eraut (1994) asserts that “learning happens on a daily basis almost from birth, but the majority of what is learned over a lifetime is likely to be restricted to facts and abilities learned through school, college, or from in-plant training courses” at times neglected and not codified.. The Mozambique's Instituto Nacional de Formação Profissional e Emprego (INFPTTE) has recently (2012) itself committed to ISO 9000 (City & Guilds) through curriculum reform that impacts shaping competences, while Mozambique aluminium (Mozal) company has learning activities for working processes, as opposed to that occurring in informal settings, such as a mechanics and carpentry workshop. Informal learning is an elusive and hard to define. For Pickerden (2004), informal “learning (...) takes place at work, formally or informally” vis-à-vis outside workplace with a learning syllabus designed and approved by the employer to meet its commercial needs, improve practice. However, there are also formal on-the-job training programmes. It is a “type of learning never organized. Rather than being guided by a rigid curriculum, it is thought of as experiential and spontaneous” (Ainsworth & Eaton 2010). Informal learning is within the control of the learner (Pickerden 2004). Yet, it is dependent whether the learner has control over what he learners (self-directed learning) but, “if the learner knows that s/he wants to learn, decides how, when and where to learn it, and decide her/himself

whether s/he have then learnt it, that would fall within this definition of informal learning” (ibid.).

Cullent Report proposes informal learning as fourfold: Domain – the environment in which learning is deemed necessary by the learner; context – e.g. whether self-directed or community action or education outreach; arrangements for learning – pedagogic characteristics, and the process – how it originates and what it does (2000) however more generic/community-oriented than work place-based. Livingstone (2007) warns that “in light of general conceptual confusion, varied measures, and the very limited amount of comparative data, researcher knowledge of extent, processes, content, outcomes and trends of (...) informal learning and training remains very crude” (p.218) yet workable scientific field. .

Methodology

To study this seemingly phenomenon of informal learning, a qualitative small-scale case study was conducted. An in-depth interview technique of data collection was used to elicit 17 respondents’ insight (nine apprentices of a TVET institution and eight workers of a company in Maputo) over the informal learning opportunities. The study used a purposeful sample to collect data from workers’ and apprentices’ communities in their formal and informal settings. An ‘informal learning’ theory generation was through an iterative, reflective and cyclical research procedure to adopt, in turn, an analytical approach to capture the main themes arising from data setting and yet remaining there not manipulated like what happens with a longitudinal, experimental type of study. This allowed a more thorough discussion with participants leading to data in-depth analysis, saturation and indigenous informal learning constructs.

Results

The emerging results show that informal learning encompasses five conceptually categories, viz:

Category 1: Settings clear vision and mission of a learning vocational education organization

In this category, respondents portray informal learning opportunities as follows: “...a [learning] organization (...) without vision and mission is a failing institution” (Apprentice-Respondent1). Then “the TVET institution should be governed by a vision and mission-driven because these factors lead to smooth implementation of planned actions and activities”. (A-R2). Before implementation stage, a TVET organization should indicate very clearly what constitutes its vision and mission to the members (A-R3). “What seems to me (...) TVET’s underestimated the centrality of a vision and mission statement, leading to its debacle. (A-R9). The industry which thinks of and considers what vision and mission to take (...), develops both the product it produces and people are smart and competent (Employee-R17). TVET /industry, therefore, should be vision and mission–driven for its full development as it has also found by a CARICOM Survey (p.48) cited in MLSS (2001) that TVET encompass all vocational/professional programmes and schemes. It transcends education systems provided by Ministries of Education and includes many additional non-formal programs (...) by informal in-plant and on the-job training. The clarity of vision and mission bring us down to operationalization of a culture in which informal learning is codified.

Category 2: Operationalize a codified informal learning culture catering for improving practices, processes e qualifications

Responses for this category have shown that codified informal learning is mainly threefold: First, that it “would have been better if our college approves and imparts a culture that will help apprentices not only to use informal learning moment to improve what they do but also this type of learning to be recognised and coded accordingly.” (Apprentice-Respondent 1).

Secondly, that (...) coded informal experiences of learning increases productivity and values apprentices’ efforts.” (A-R9) “...matters of policy will to implement ...coded informal learning experiences (Employee-R11). Lastly, that “(...) ‘uncodified’ learning practices still many than the codified ones. (E-R14).

The evidence shows that TVET/Industry imparting a coded informal learning takes policy/political will and off course decision making. The best form of vocational education is one which helps students to develop their capacity to learn, to think critically, to adjust to rapid changes in technology, and to gain some understanding of their later-working environment (Cantor 1989). More importantly, codified informal learning can be studied on to inform the practice.

Category 3: Research, development and utilization of knowledge in all its dimensions

The results clearly show that research, development and utilization (RD&U) is necessary, deemed to knowledge utilization, applying needed resources and training relevant to the industry needs.

“Research is important but I don’t know whether the TVET institutions take it seriously” (A-R2), while another acknowledges that “in Mozambique there is no greater application [utilization] of [informal] knowledge (A-R5). One respondent’s (A-R7) view shows that “we need more training ...”[in RD&U] and was also evident that informal learning opportunities is “a major field of investment (...) needs resources to work out” (E-R13) “(...) more knowledge-based and transformative research [to what the] industry strives for.” (E-R15). Informal learning/settings research may not yield exactly what one might anticipate or, at the outset, even hope for (Smith 2012). (...). These ideas bring us also to a category of situated learning that entails and/or envisages a different organizational structure of the vocational curricula and its implementation in such a way that differ from that of a discipline/subject-based learning.

Category 4: Situated learning

Situated learning (SL) (Lave & Wenger, 1991) seems to be organised in such way that “we always share what we know to each other”. (A-R7). Indeed, in sharing atmosphere, “there has to be a more collaborative learning between learners so that different dimensions of learning to be utilized”. (A-R2). SL is participatory in nature and procedural in its approach.(A-R5). SL is activity-based accompanying a variety of fields of learning...” (E-R17).

As opposed to discipline/subject orientation of learning, the data above show that situated learning may entail participation, processes, collaboration in an activities and fields of learning and work. These findings are also evident in Clancey’s (1995) study which appears to classify SL as threefold: (i) identity and participation. (ii) evolving membership and capability (iii) means of reproduction and development of communities of practice.”

This represents a paradigm shift from subject/discipline to learning fields as hence it boils down to contractual ties and issues facing the intervening parts.

Category 5: Employees and employers' contract over informal learning needs.

It appears that industry/employers and employees have to bridge the gap between understanding the latter informal learning needs and existing learning opportunities: "The employer needs smart attitude towards employees' continual learning needs" (A-R8). Lack of understanding of the contractual valuing of learning does always impact negatively on the learning needs... (E-R15). Overall, Dale and Bell (1999) who corroboratively suggest the employer to design opportunities for informal learning at agreeable schedule while pursuing the work contract (induction, refresher courses, and apprenticeship (Lave & Wenger, 1991; Vygotsky, 1978) and peer-reviewing/sharing to test and validate new ideas/knowledge (Barnett) for the organization benefit.

Last but not least, work-based learning and opportunities for informal collaborative learning allow a more reflective learner-based control of the experienced learning through employers and/or TVET institutions face-to-face and 3D virtual (Fominykh et. al. 2012) support bearing in mind what Livingstone (2007) points out that informal learning occurs in irregular time and space patterns.

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Youths between urbanisation and poverty: Livelihood opportunities and challenges of informal apprenticeships in Ghana

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Summary: This paper summarises the results of a study by the German Development Institute's Postgraduate Training Program, which focuses on youths' challenges and opportunities in the informal apprenticeship system of Ghana's capital Accra¹. Informal apprenticeships are the only form of vocational skills training available for many poor youths in Ghana and they are associated with hardships for the apprentices, which makes many to abandon their apprenticeships. Looking at informal apprenticeships in a holistic perspective, apprentices are facing four severe barriers. These are: access to the apprenticeship, the training phase itself, the blessing/graduation at the end of the apprenticeship and the transition towards opening one's own shop. Programs and policy initiatives focusing on upgrading informal apprenticeships can only be sustainable and effective, if (a) they recognise all of these barriers; (b) they are gender-sensitive; (c) they also integrate innovative sectors.

Keywords: Youth, poverty, urbanisation, informal apprenticeships

Introduction

2008 was the first year in the history of mankind when more than half of the world's population lived in towns and cities. It is estimated that by 2030, around five billion people will be living in urban areas (UNFPA 2007). Both, natural population increase and migration are the main drivers of this process. Predominantly in Africa and Asia, urbanisation takes place in inner-city areas as well as at the urban peripheries. It is oftentimes associated with severe destitution. Poverty is increasingly being transferred from rural areas to urban areas via migration, leading to an urbanisation of poverty.

Especially in the African context, demographic development is highly interlinked with urbanisation and poverty. In contrast to the ageing societies of Europe, the share of the population being 35 years old or younger is extraordinarily high in sub-Saharan Africa. African youths are particularly affected by poverty and the lack of sustainable income-generating activities. For a large majority of urban, young poor, the informal economy with its volatile income prospects and the lack of formal social security mechanisms offers the only available economic perspective.

This can also be observed in Accra: particularly in Ghana's capital, rapid urbanisation, severe poverty and immense demographic pressures diffuse and mutually reinforce themselves. The typical implications of this process - e.g. increasing crime rates, growing land tenure insecurity, more ecological pollution - are hitting Accra at full tilt (Grant 2006). Although Ghana has been experiencing enormous economic growth for years, poverty remains at staggering levels in many parts of Accra and a growing part of the population is being excluded from this economic boom. Against this background, many poor youths perceive an apprenticeship in the informal econ-

¹ This paper is mainly based on Schraven et al. (2013).

omy as the only way to improve their livelihood prospects in the long run as competition for secondary education is harsh and school fees are too high for many families. Yet, to what extent apprenticeships offer a way out of poverty remains an open question. On the one hand, informal apprenticeships might pass on poverty from one generation to the other by keeping young people in already saturated markets with little scope for improvement. Even those who manage to open their own independent businesses oftentimes remain poor, as profit margins in many occupations are low. On the other hand, informal apprenticeships might be a way to escape poverty because they allow young people to acquire the necessary practical skills to perform common and respectable trades within their communities. Moreover, informal apprenticeships are widely accessible in terms of requirements for those who lack prior education. Furthermore, they are regarded as a feasible strategy to escape severe poverty. In other words: apprenticeships are highly relevant for the poor youths. Accordingly, up to 90 per cent of all basic skills training in Ghana takes place in the informal economy (Johanson & Adams 2004; ILO 2012).

Based on the example of Accra, this paper identifies the opportunities and challenges that youths from poor areas experience in the informal apprenticeship system. Unlike the oftentimes rather systemic perspective of many studies in that field, this study is based on a livelihood approach. Referring to these findings, the paper furthermore formulates policy recommendations addressing the upgrading of informal apprenticeships, which has become a crucial strategy of many organisations dealing with vocational training.

Methodology

Several instruments were used to acquire a profound insight into the informal apprenticeship system of Accra. Structured interviews with the target group were used as the main data-gathering instrument. In total, 138 structured interviews in three different districts of Accra were conducted. These districts were chosen due to their high poverty levels and their heterogeneity concerning other population characteristics. In order to get a full and sound picture of the informal apprenticeship system, the sample was split up in four sub-groups, which were: apprentices in apprenticeship, former apprentices who have abandoned their apprenticeship or who are now working in a different occupation, apprentices who are in a transition towards opening up their own shop and master craftspersons. For each of the sub-groups, a different questionnaire was created. The respective questionnaires consisted of standardised questions (e.g. social and demographic background of the respondent) and many open questions addressing rather qualitative issues (e.g. problems during the apprenticeship). The interviewed apprentices and master craftspersons work in ten typical trades of Accra's informal economy.

Furthermore, ten life stories – in order to illustrate cases reflecting typical trends or aspects of the informal apprenticeship system in Accra - and several dozens of expert interviews with academic experts, local authorities from the research areas (e.g. Youth Development Officers), representatives of the Ghanaian government, staff members of development cooperation agencies and relevant NGOs were conducted. Finally, six group discussions with members of various trade associations were conducted.

Results

Informal apprenticeships are the most important form of skills training in Ghana. Pursuing an apprenticeship requires a high level of commitment from the apprentices as they are facing long working hours, they oftentimes do not receive any kind of remuneration, their families have to pay fees and they are depending on their master craftsmen's goodwill. For most of the young apprentices, this is a situation of severe hardship and sacrifices. Therefore, many drop out of the apprenticeship due to financial problems or conflicts with their master craftsmen.

Although there are no formal regulations, informal apprenticeships are strongly influenced by social rules. Accordingly, the process from starting an apprenticeship to setting up one's own shop or business usually follows similar pathways.

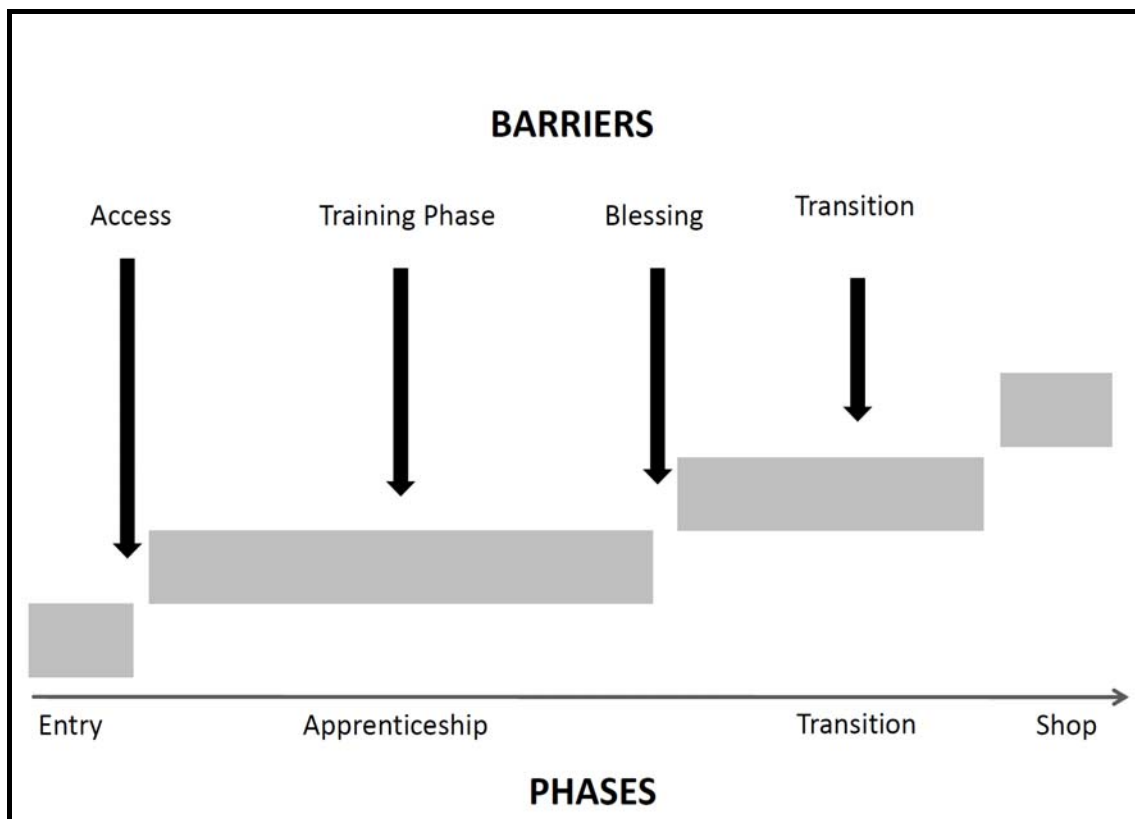


Figure 1: Phases and barriers of informal apprenticeships

For the purpose of this study, the research focus went beyond the training phase. It also included the transition towards opening one's own shop. This allowed for creating a holistic picture of the various difficulties that apprentices face in the struggle to become an independent craftsman. The four barriers that were identified are: the access to the apprenticeship, the training phase itself, the blessing at the end of the apprenticeship (=a graduation ceremony the apprentice or his/ her family needs to pay for) and finally the transition towards opening one's own shop or establishing one's own business, respectively (see Figure 1). At each of these barriers, some apprentices fail and drop out of the system. Generally, the apprenticeship is not a linear process; apprentices may drop out of one apprenticeship and enter another one, or they may become stuck in one of the phases for years, unable to proceed to the next stage. Having an own shop marks the end of this process and is the ultimate goal for the great majority of apprentices. In this study's sample, nearly all apprentices and

recent graduates stated that they were working towards opening their own shop and working independently. However, the way towards independence is characterised by continuous precarity and high vulnerability to shocks.

Policy initiatives and programmes should therefore address all the barriers mentioned in order to be effective and sustainable. Many policy measures predominantly focus on the access to apprenticeships whereas other important barriers are often neglected. For instance, options to secure the apprentices' maintenance during the training phase would need to be created as their families often cannot care for their basic needs, which is a main reason for dropping out. Likewise, the receiving of the final blessing should be facilitated. Many apprentices have already finished their training in terms of skills acquisition but are still not allowed to work due to the fact that they still have not received a blessing ceremony. They often cannot afford the final blessing fees because they did not have the possibility to save during the training phase. Generally, it is also essential that young people should be empowered in the informal apprenticeship system – particularly in the trade associations, which are justifiably important partners in all efforts to upgrade informal apprenticeships. There is still a strong power asymmetry between master craftspersons and their apprentices as the latter depend strongly on the benevolence of their master craftspersons.

Furthermore, it will be highly important to increase the number of female apprentices in occupations besides the typical female occupations of hairdressing/ cosmetics and dressmaking. The living situations of female apprentices are usually more precarious than those of male apprentices since profit margins are lower in “female” occupations than those in male-dominated ones. Programmes that support female apprentices in rather technical and so far male-dominated occupations certainly would have the potential to improve the situation of women in informal apprenticeships.

Finally, programmes should also direct young people towards new and innovative sectors that have growth potential in order to enhance their livelihood opportunities in less saturated markets. However, supporting innovative sectors must not necessarily exclude the support for traditional trades and occupations.

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Transitions in informal apprenticeship: Results from ILO research in several African countries

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Summary: Informal apprenticeship is a major route for African youth to gain employable skills and enter the labour market. Transitions in informal apprenticeship are discussed in terms of access to apprenticeships, drop-out rates, and transitions to the world of work upon completion. Building on studies conducted in several African countries, this paper concludes that, while each of these countries is diverse in their settings, transitions in informal apprenticeship remain entrenched in local tradition and practices. Transitions to formal sector jobs are possible, but only for a lucky few.

Keywords: Transition, informal apprenticeship, gender, drop-out rates

Introduction

Informal apprenticeship remains an important form of training in many African countries. Large youthful populations are bound to work and learn in the informal economy due to shortage of formal training opportunities and formal jobs. Investing in the informal economy by upgrading its training system – with a long-term perspective of transitioning to formality – offers economic prospects and chances for more decent work for youth.

This paper looks at studies conducted by the ILO on the functioning of the system in several countries with a view to understanding how to address its weaknesses and build on its strengths. Informal apprenticeship is defined as the system by which a young learner (the apprentice) acquires the skills for a trade or craft in a micro- or small enterprise, learning and working side-by-side with an experienced craftsman. Apprentice and master craftsman conclude a training agreement that is embedded in local norms and traditions of a society.

Transitions in informal apprenticeship are discussed in terms of

- access to apprenticeships,
- drop-out rates, and
- transition from apprenticeship to (self-) employment upon completion.

Informal apprenticeship is strongly embedded in an informal social structure. These informal institutions determine the way informal apprenticeship is socially perceived by the youth, the informal networks that support the functioning of apprenticeship, the way informal rules are reinforced by reciprocity, social sanctions, and economic compulsions, and finally how apprenticeship also functions within the kinship system.

Table 3: Reasons of master craftsmen for not hiring female apprentices

	Malawi	Tanzania	Sudan	Tunisia
No female asked to become an apprentice	83%	97%	28.5%	41.7%
Females cannot do this job	9%	1%	20.1%	34%
By tradition this is a male business	8%	1%	45%	19.1%
Other	2%	5%	-	5.2%

Equal access to apprenticeships¹

1. Access to informal apprenticeships for young women and young men is determined by a gendered social structure. All studies highlight a strong gender bias towards access to vocational occupations. Most enterprises are run by men except for those in traditionally female occupations. Women are limited to jobs that are perceived to be feminine such as, hairdressing/beauty, and dressmaking, while men are predominant in “male” jobs such as carpentry, auto mechanics, and metalwork. When master craftspersons were asked about the reasons for low numbers or no female apprentices, the majority in Malawi and Tanzania stated that young women simply did not apply (Table 1). Perceptions that the trade was inappropriate for women did not seem to play a role. In both countries, most surveyed trades include at least some apprentices of the opposite sex, ranging between two and 15 per cent.

2. By contrast, in Sudan where women were practically absent from apprenticeship trades, and in Tunisia, where all female apprentices in the sample were concentrated in the same occupation (hairdressing), perceptions that the given trade is “male” or that females cannot do the job are much stronger (65 per cent in Sudan and 53 per cent in Tunisia). This form of gender bias appears to be largely a result of the social norms and values that – in this context – limit the choices of women to learn an apprenticeship trade.

Table 2: Reasons of master craftspersons for not hiring apprentices with disabilities

	Malawi	Tanzania	Sudan	Tunisia
No person with disability asked to become an apprentice	93%	98%	54.9%	57.7%
A person with disability cannot do this job	4%	1%	21.5%	40.5%
Other	3%	1%	-	1.8%

3. While research suggests that people with disabilities account for around 15 per cent of the global population (WHO/WB 2011), the study samples included much smaller shares: two per cent of apprentices in Tanzania, and five per cent in Malawi. In Tunisia and Sudan, the surveyed workshops included nearly seven per cent of apprentices with disabilities in Tunisia and 2.3 per cent in Sudan, within the past two years. In many African societies, disability carries a stigma and is perceived with superstitions. Interestingly, perceptions that persons with disabilities cannot do the required job are most widespread in Tunisia and Sudan. Why this is the case requires further research.

4. Yet, improving access to apprenticeship is not enough. Research in Tanzania, for instance, revealed that even if women were trained in car mechanics, they would face difficulties in being hired after completion of apprenticeship.

High drop-out rates jeopardize the system and its sustainability

Informal apprenticeship can only act as a system that provides employable skills to youth if apprentices complete their apprenticeship period. Early drop-out means an incomplete acquisition of skills and thus fewer chances to transition to decent work.

Incentives for businesses to offer informal apprenticeship depend on their capacity to recover training costs. Usually, this is achieved through an apprenticeship period

¹ This section focuses on gender and disability as determining factors for access. Other factors including apprenticeship fees (a common practice in many West African countries), level of formal education (between 35 and 40 per cent of businesses in Malawi and Tanzania mention this as criterion for selecting apprentices) and migratory background are not discussed.

of one to four years which allows businesses to benefit from the apprentice's productive work while still paying lower apprenticeship allowances. If apprentices repeatedly drop-out early, this might act as a disincentive for master craftspersons to offer apprenticeship altogether. Instead, they may revert to the practice of engaging low-skilled labour without putting emphasis on skills transmission.

In formal apprenticeship systems, e.g. in Germany, or the UK, drop-out rates oscillate around 25 per cent (BMBF 2012; Peacock 2011). The study in Malawi recorded a dropout rate of 43 per cent. Drop-out rates in Egypt are particularly high (48.6 per cent), which points to a weakness in the system. In Tunisia, drop-out rates (at 31 per cent) are lower since the sample includes both informal and formal apprentices. Formal apprentices are awarded a certificate upon completion and thus have stronger incentives to stay until completion.

In some West African countries (coastal ones, CCPAM 1999), graduation ceremonies for apprentices are seen as a necessary element for successful transitions to skilled craftsmanship. In this respect, they act as an incentive for completion, which explains their lower drop-out rates of 20-25 per cent (Fluitman 1992)¹.

Reasons for drop-out can be related to changes in interests and thus in career choices, care responsibilities for family members, pregnancy, or conflicts with the master craftsperson. The most important reason in countries with high drop-out rates is likely to be the lack of incentives to complete apprenticeship, and thus the (potentially false) impression that the acquired skills level suffices to make a living. A strong informal social structure, kinship relations and expectations of future benefits from collaboration are factors that tend to reduce drop-out rates. Introducing certificates valued on the labour market and/or end-of apprenticeship assessments (e.g. by business associations) can also act as incentives to reduce drop-out rates.

Transitioning from apprenticeship to (self-) employment

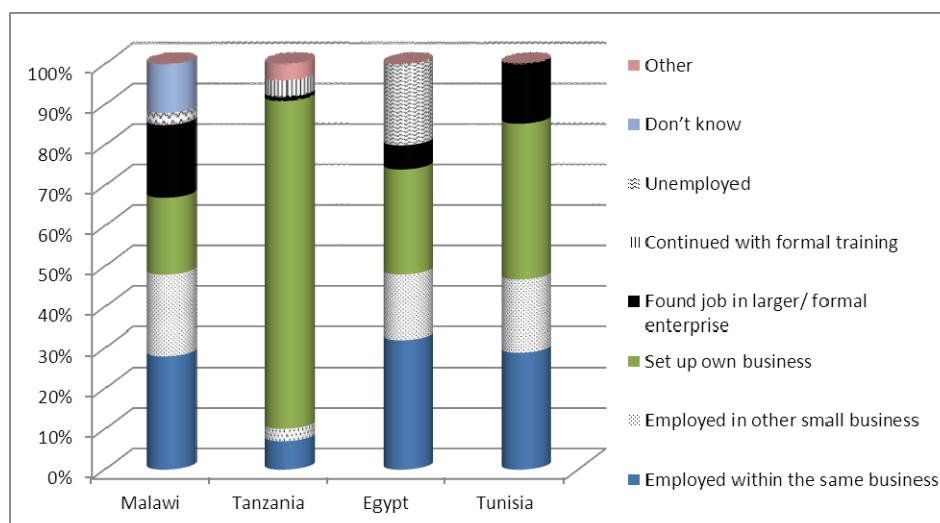
The size of the informal economy, skill shortages in certain vocational trades, labour market regulation and dynamics, the quality of formal technical and vocational education and training (TVET) provision, quality gaps between skills acquired formally and informally, and the demand for concerned occupations determine the way young people transition from informal apprenticeship to work. Self-employment might be a desired option by youth since it entails – in certain contexts – higher community status than working as an employed skilled worker. If (formal and informal) markets are saturated, self-employment might also be the one and only option for survival, with higher risk of low earnings and low job quality.

Among apprentices who completed apprenticeship in the past two years, Tanzania registered an exceptionally high percentage of apprentices who ended up starting their own businesses with very few of them finding jobs in larger enterprises. This is in contrast to Malawi where formal wage employment seems to be more accessible for informal apprentices. This is mirrored in Tunisia, where the sample included both formal and informal apprentices, and thus access to formal sector jobs is more likely.

With the exception of Egypt, informal apprentices run a very low risk of being unemployed, which confirms the high labour market relevance of skills they acquire. In Egypt, overall labour market rigidities and low reputation of informal apprenticeship might be reasons for the relatively high share of unemployed graduate apprentices.

¹ While this estimate is relatively old, Ahadzie confirms that drop-out rates in informal apprenticeship in West Africa (Ghana and other coastal countries) are “very low” (Ahadzie, 2009).

Figure 2: Employment outcome overview of graduated apprentices in past two years



The study in Malawi compared aspirations of current apprentices with the actual employment outcomes of the previous apprenticeship cohort. While only 13 per cent expressed the wish to stay within the same business, 28 per cent of the earlier cohort was still employed within the same business. 49 per cent aspired to start their own businesses compared to 19 per cent of the earlier cohort who actually did – yet this might still happen in future. Challenges for setting up businesses, including in the informal economy, are well known (financing, location, etc.) and a strong reliance on family support remains a common feature. The studies, however, did not investigate whether the established businesses are thriving.

Conclusion

Social norms, traditions, and cultural perceptions can act both as an impediment to the development of (in the case of equal access) and a safeguard (in the case of drop-out rates) for the functioning of informal apprenticeship. In terms of labour market entry, apprentices run a low risk of being unemployed, yet accessing formal jobs remains the exception. Building stronger bridges to the formal labour market and the formal training system for apprentices who strive to further improve their skills is an important policy challenge that calls for further pilot projects and policy learning.

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Les Examens de fin d'apprentissage traditionnel (EFAT): un accélérateur d'amélioration de l'apprentissage traditionnel au Bénin

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Résumé: Le Bénin se distingue par sa tradition légendaire de développement de la formation professionnelle initiale par apprentissage auto organisée par les maîtres artisans. Nonobstant le succès populaire et l'engrègement social de ce mode de formation professionnelle initiale par apprentissage, ce dernier rencontre des difficultés d'harmonisation des fondamentaux de son organisation et végète sous le poids d'une tradition en panne d'évolution. Malgré les efforts de réglementation entrepris par l'Etat central dans le sens de l'amélioration de ce système, et s'agissant des résultats escomptés, les fruits n'ont pas tenu la promesse des fleurs. L'organisation des EFAT reste une trouvaille novatrice d'amélioration accélérée du système d'apprentissage traditionnel grâce à une intervention appropriée en aval avec des répercussions positives sur ses éléments de structuration jusqu'en amont. Son engrègement au niveau des collectivités décentralisées permet aux acteurs locaux de jouer les premiers rôles et en faire un instrument auto organisé, auto financé et auto géré.

Keywords: EFAT, apprentissage, formation, initiale

Introduction

L'apprentissage au Bénin offre une grosse opportunité de formation professionnelle initiale des jeunes filles et garçons. C'est une voie d'accès à l'exercice d'un métier. Il est sans nul doute le système de formation le plus ouvert parce que accessible à toute personne indépendamment de ses conditions de vie et de son niveau d'éducation. Ce type de formation initiale professionnelle dispose d'une capacité d'accueil importante et croissante. En 1979, il a été recensé 36 322 apprentis et cet effectif est passé en 1992 à 144 444, soit dix fois l'effectif des élèves des enseignements technique et professionnel. Le diplôme de fin d'apprentissage traditionnel est le parchemin qui sanctionne plusieurs années d'apprentissage et de dur labeur. Les lauréats sont chaque année plusieurs centaines à venir grossir le rang des jeunes et de toute personne en quête d'un emploi décent pour l'embauche ou l'auto-emploi. C'est un diplôme socialement reconnu et officiellement toléré par les pouvoirs publics. Ainsi, le Bénin se distingue en Afrique de l'Ouest par sa légendaire tradition de formation par voie d'apprentissage portée essentiellement par les patrons indépendants et/ou associés au sein des organisations professionnelles. Mais, malgré son fort impact dans la société béninoise, la principale faiblesse de ce mode de formation réside dans le déficit d'harmonisation de ses principaux éléments structurants.

Pour remédier à cette situation, l'approche novatrice mise en œuvre est l'institutionnalisation et l'organisation des Examens de fin d'apprentissage traditionnel (EFAT) axée sur l'uniformisation du mode d'évaluation des compétences acquises à l'issue de la formation par apprentissage. L'institutionnalisation de cet examen au niveau des collectivités décentralisées a servi de locomotive d'auto-harmonisation des éléments structurants de l'apprentissage traditionnel (durées d'apprentissage, frais d'apprentissage, contrats écrits d'apprentissage, bases d'évaluation des compé-

tences etc.) à l'échelle communale et municipale. Elle a surtout servi de substratum d'opérationnalisation du dispositif du Certificat de qualification aux métiers (CQM).

Cadre

Les efforts précédemment entrepris par les acteurs publics allant dans le sens de l'amélioration de la formation professionnelle initiale par apprentissage n'ont pas produit les résultats escomptés. Il s'agit notamment des actes réglementaires relatifs d'une part aux cérémonies de libération des apprentis et d'autre part aux conditions de fonds, effets et mesures de contrôle de l'exécution du contrat d'apprentissage qui n'ont pas connu une application sur le terrain. En outre, l'organisation du Certificat de qualification professionnelle CQP qui a introduit officiellement l'alternance dans l'apprentissage en se greffant sur le système traditionnel n'a toutefois pas permis d'apporter les améliorations attendues. Mieux, les acteurs publics longtemps restés en marge du développement de l'apprentissage traditionnel étaient confrontés à des difficultés réelles d'opérationnalisation du CQM créé pour remplacer le diplôme de fin d'apprentissage traditionnel délivré par les patrons.

Compte tenu de ce qui précède, l'initiative des EFAT apparaît comme une expérience novatrice et un catalyseur sans précédent d'amélioration rapide de l'apprentissage traditionnel. Son succès repose sur le paradigme d'intervention en aval (évaluation finale) pour agir de façon significative et accélérée sur l'ensemble du système jusqu'en amont (entrée en apprentissage) couplé d'un encrage communal assorti d'une capitalisation au niveau national.

Caractéristiques / principes

Les EFAT représentent une expérience inédite d'évaluation des compétences acquises par les jeunes au cours de plusieurs années d'apprentissage dans les entreprises et ateliers artisanaux. C'est une expérience auto organisée, auto gérée et auto financée essentiellement par les acteurs locaux avec un *encrage communal / municipal*. Elle représente une intervention à l'aval du processus d'apprentissage qui engendre une dynamique d'auto structuration jusqu'en amont. C'est un examen qui revêt un caractère essentiellement pratique. Il est organisé dans chaque commune 2 fois par an et est l'objet d'une reconnaissance par l'Etat local.

Dispositif institutionnel et organisationnel des EFAT

Le cadre institutionnel et organisationnel des EFAT est régi par trois arrêtés communaux ou municipaux portant respectivement : institutionnalisation des EFAT, création, attributions et fonctionnement des organes de gestion des EFAT et enfin, nomination d'un Point focal artisanat de la commune. Le cadre est composé des organes ci-après : (i) Conseil consultatif communal (CCC) qui est l'organe de supervision des EFAT ; (ii) Comité d'organisation (CO) assure l'organisation pratique des examens ; (iii) Collectif qui est l'organe de concertation des artisans de la commune et enfin ; (iv) Assemblée générale qui est l'organe de lancement des EFAT.

Ces différents organes au niveau local sont animés par plusieurs acteurs locaux à savoir : la Mairie qui définit les conditions cadre ; le collectif des associations et groupements d'artisans responsable de la formation des apprentis et de leur évaluation ; l'association des parents d'apprentis qui assurent le financement de l'apprentissage ; le Point focal artisanat qui joue le rôle d'interface entre la Mairie et les artisans et enfin l'association de développement, les ONG et structures d'appui etc. qui sont parties prenantes du processus d'organisation des EFAT

Effets induits sur l'amélioration de l'apprentissage

Évaluation des compétences acquises

L'évaluation des compétences de fin d'apprentissage traditionnel était dans une large mesure du ressort de l'artisan formateur. Les bases d'évaluation variaient d'un patron à un autre. Les apprentis en fin d'apprentissage n'étaient donc pas assujettis à un test de contrôle et de validation de leurs compétences.

À présent, tous les apprentis en fin de formation dans une même commune et municipalité ont l'obligation de passer les EFAT organisés par les artisans sur des bases objectives de façon concertée et consensuelle. Ce faisant les EFAT garantissent aux apprentis l'égalité des chances d'accéder au diplôme de fin d'apprentissage. Les EFAT ont permis par ailleurs aux patrons d'échanger régulièrement sur le contenu des compétences transférées au cours de l'apprentissage et surtout sur les champs d'évaluation, ce qui n'était pas le cas par le passé.

Pratiques ruineuses

La fin de la formation par apprentissage était précédemment marquée par la libération caractérisée par la dot et la cérémonie de libération. La dot de libération est constituée de divers présents que l'apprenti doit offrir à son maître d'apprentissage afin de mettre un terme à sa formation. En plus de cette dot, une cérémonie de libération à caractère festif doit être organisée par le patron sur financement des parents ou tuteurs d'apprentis. Cette cérémonie est surtout marquée par le « rituel du dernier coup de palmatoire », signe d'affranchissement de l'apprenti qui change de statut pour entrer dans le cercle des artisans. Ces deux rituels de par leur caractère onéreux sont un véritable problème pour les apprentis et leurs parents et tuteurs. Bon nombre d'apprentis abandonnent le diplôme de fin d'apprentissage traditionnel en raison des moyens financiers importants que requiert la libération.

Maintenant, les examens de fin d'apprentissage traditionnel ont mis un terme au phénomène de la dot et des cérémonies ruineuses de libération. La dot, qui était un sujet tabou en milieu artisan et un casse-tête pour l'État et dont la réglementation est restée lettre morte, a pu être réglée à la base dans une démarche concertée.

Frais d'apprentissage

L'apprentissage dans le secteur de l'artisanat est un mode de formation professionnelle initiale payant. Ce coût communément appelé frais d'apprentissage est généralement partagé entre l'artisan maître d'apprentissage et le parent ou tuteur d'apprenti. C'est un montant qui couvre la durée totale de l'apprentissage à partir duquel l'artisan formateur s'engage à accompagner le jeune apprenant dans le processus d'acquisition de compétences professionnelles liées à un métier bien précis.

La fixation de ces frais d'apprentissage ne fait l'objet d'aucune réglementation. Le laisser-aller est donc de mise dans de pareilles circonstances. Ainsi, les frais d'apprentissage pratiqués sont disparates non seulement d'un métier à un autre mais aussi dans une même profession. Mais, avec le développement du mouvement associatif, des efforts d'auto-harmonisation ont été perceptibles. Ainsi, des patrons membres d'une même association s'accordent sur un taux fixe de frais d'apprentissage. Cela n'est donc valable que pour les membres associés et les patrons indépendants ne sont pas concernés.

L'organisation des EFAT a permis de réaliser dans chaque commune ou municipalité concernée *un consensus des acteurs locaux* sur le montant des frais d'apprentissage. Deux pratiques de fixation ont émergé de ce consensus. La première est un coût unique applicable à l'échelle de toute la collectivité décentralisée

indépendamment du métier, du lieu et surtout du patron. La seconde pratique contrairement à la première permet la fixation des frais d'apprentissage par métier.

Durée d'apprentissage

L'indétermination d'un contenu précis de la formation par métier laisse la porte ouverte au caractère disparate de la durée d'apprentissage traditionnel. Au sein d'un même métier, la durée d'apprentissage varie d'un patron à un autre. Elle est donc déterminée par chaque patron, sur la base de son propre vécu. Sa principale référence est le temps qu'il a mis personnellement pour apprendre le métier. Même si un patron fixe unilatéralement la durée d'apprentissage requise chez lui, celle-ci varie aussi d'un apprenti à un autre.

Tous les apprentis d'un même patron n'ont pas une même durée d'apprentissage. Un(e) apprenti(e) peut dépasser la durée convenue par son patron pour diverses raisons¹. L'institutionnalisation et l'organisation des EFAT ont engendré *une prise de conscience* des patrons de la nécessité de mettre de l'ordre dans les durées d'apprentissage. Ce sont les collectifs qui se sont engagés dans la résolution de ce problème. Ainsi au niveau de chaque commune, les patrons mobilisés au sein des associations regroupant des professionnels d'un même métier ont été amenés à se concerter pour convenir des durées d'apprentissage applicables à tous.

Information sur les flux entrants et sortants de l'apprentissage

Dans la pratique, le choix des dates de libération est du ressort du patron, parfois en concertation avec les parents ou tuteurs d'apprentis. Il en est de même au niveau des associations pour le choix des dates de cérémonies de libération de fin d'apprentissage traditionnel. Ce mode de gestion de la fin de l'apprentissage ne permet pas la connaissance des flux des sortants de l'apprentissage. Les statistiques n'existent pas pour apprécier les effectifs des cohortes des sortants de l'apprentissage.

À présent, les EFAT permettent la production d'informations statistiques à partir des contrats et registres d'apprentissage et des résultats par session et par commune du flux des apprentis. Cela permet aux communes de disposer de statistiques fiables en vue de mettre en place dans le cadre des plans de développement communaux une stratégie d'insertion de ces jeunes apprentis pour la dynamisation de l'économie locale.

Opérationnalisation du CQM

La certification de la formation professionnelle initiale par apprentissage est l'objet du décret n° 2005-117 du 17 mars 2005. Mais c'est seulement l'organisation effective du CQP qui s'est vite concrétisée l'année même de sa création en raison de sa similitude avec le mode de formation et d'évaluation dans l'enseignement technique. Le CQP en est en 2012 à sa 8^e édition. Par contre, la première édition d'organisation du CQM se fait toujours attendre.

En effet, la marche vers le CQM est restée longtemps sans boussole. Comment s'y prendre était une préoccupation majeure. C'est dans cette impasse que l'expérience d'institutionnalisation et d'organisation des EFAT est venue à point nommé *baliser la voie* qui a fortement inspiré les acteurs publics et privés à envisager avec sérénité l'opérationnalisation du CQM.

Congés de libération

¹ Les raisons sont évoquées dans le document intitulé *Apprentissage traditionnel dans l'artisanat au Bénin* de Comlan Cyr DAVODOUN, p.78-79.

Le congé de libération est la phase qui précède la cérémonie de libération au cours de laquelle l'apprenti présenté au public aura son statut d'artisan confirmé. Le congé est accordé à l'apprenti pour préparer sa cérémonie de libération. Les apprentis issus de milieux défavorisés mettent ce temps à profit pour travailler afin de mobiliser les moyens financiers nécessaires pour s'acquitter de la dot de libération.

Les difficultés qu'ils éprouvent à mobiliser les ressources financières amènent beaucoup de jeunes à renoncer à remplir les formalités pour accéder au Diplôme de fin d'apprentissage traditionnel (DFAT). *Cette pratique de congé de libération a pris fin* avec les EFAT. La maintenir serait préjudiciable à la préparation optimale de l'examen. Si l'apprenti s'éloigne quelques mois de l'atelier, il court le risque de perdre la main. Par ailleurs, du fait de la suppression de la dot et de la cérémonie de libération, il n'est plus nécessaire d'aller mobiliser de gros moyens financiers avant d'accéder au DFAT.

Conclusion

Les EFAT constituent une approche inédite d'amélioration des éléments structurants de la formation par apprentissage. Ils se révèlent comme un instrument précieux et efficace de rénovation de l'apprentissage traditionnel, et participent ainsi à la réglementation nationale de ce mode de transmission de savoir-faire, en servant de tremplin à l'opérationnalisation du CQM. Le succès des EFAT réside entre autres dans son ancrage au niveau communal, et de la responsabilisation des acteurs locaux publics et privés. Mais au-delà de son rôle de catalyseur de l'aménagement de l'apprentissage traditionnel, il apparaît comme un instrument de dynamisation du développement local et de l'activation de l'intercommunalité.

Reference

Davodoun C.C. 2011, Les raisons sont évoquées, dans le document intitulé : *Apprentissage traditionnel dans l'artisanat au Bénin*.

CHAPTER IV

COMPETENCE ASSESSMENT AND DEVELOPMENT

“Between a rock and a hard place” – structural dilemmas of workplace trainers in German apprenticeship training

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Summary: In the context of the general policy debate on professionalisation of teachers and trainers in VET, the paper presents results of a number of case studies about the general situation of apprenticeship trainers in German companies. Starting from their personal accounts in interviews, competing demands of the work context are identified. These feed in a structural analysis of their position and status in the organisational setting. The resulting challenges with regard to individual professional development are described and further implications for VET policy suggested for discussion.

Keywords: Workplace trainers, work context, economic organisation, professional development

Introduction

Within the European political agenda of the Copenhagen Process 2011-2020, VET teachers and trainers are considered key actors in all strategies targeted at stimulating the development of society and the economy. It is assumed that their roles change in a knowledge society and that they need particular support as they respond to these challenges in the perspective of lifelong learning (Bruges Communiqué 2010, p. 8). Member states are asked to raise the attractiveness of the respective professions and to improve their initial and continuing training.

According to the legal regulations of the dual VET system in Germany, any company wanting to offer apprenticeship training needs to register at least one employee who can function as the designated responsible trainer (*Ausbilder*) and fulfils the necessary requirements. Proof of qualification besides a vocational qualification is the successful completion of an examination as defined in the Trainer Aptitude Regulation (AEVO, § 2) or an examination for a master craftsman's diploma. Trainers in craftsman businesses are usually master craftsmen. Outside the craft trades, any AEVO qualified trainer is acceptable. In 2010, a total of 675,198 persons were officially registered by the chambers as trainers and contact persons of the company respectively (BIBB 2013, p. 14). The actual number of persons practically involved in apprenticeship training in German companies is, however, much higher.¹

While company-based “training” within the German apprenticeship scheme is a rather precisely defined activity, the “trainer” as a person is difficult to conceptualise. We have to speak of a function rather than of a defined occupational group. The training function is shared by several categories of persons - depending on the nature of the activities, the size and the hierarchical structure of the enterprise (Gérard 2000, p. 26). In small companies, all employees mutually take care of the apprentices, and in medium and large companies there can be a wide differentiation of roles. “Training managers” (*Ausbildungsleiter*) are responsible for the whole process

¹ Previous national employee surveys suggest that across all sectors approximately 16 per cent of the economically active population (i.e. 10 of 41.55 million in 2012), but at least six million employees regularly fulfil training responsibilities in apprenticeship.

of steering initial training in all occupations offered by the company. “Full-time trainers” (*hauptberufliche Ausbilder*) are primarily found in the industrial manufacturing sector and mostly in large companies that can afford to run and equip separate training workshops (only 4.8 per cent of all companies involved in apprenticeship). The huge majority are “part-time trainers” (*ausbildende Fachkräfte/ Ausbildungsbeauftragte*) who engage in training as a part-time activity directly at the workplace. These can also be classified as “informal workplace ‘educators’” (Ostendorf 2012). Besides the AEVO training programmes, many other educational offers exist for this extremely large and heterogeneous target group, but the demand and application in practice is rather low. So far there has been little research about the work context of apprenticeship trainers in German companies. It is an open question which internal parameters are decisive for the support and professional development of this group (Bahl 2012).

Methodology

Since the training of apprentices is actually carried out by a group of employees rather than by clearly identifiable individual “trainers”, one can say it is rather the “community of practice” (Lave & Wenger 1991) as a whole that trains. Therefore the unit of analysis was the company, and I chose a qualitative approach based on semi-structured interviews, document analysis and in one case participant observation. To discover the social mechanisms steering the training process and the resulting scope of action of the employees involved, we tried to gather as many company perspectives as possible. As part of a regular BIBB research project on “The situation of apprenticeship trainers in companies” we looked at 14 companies all over Germany (Bahl et al. 2012). We picked cases that differed widely with regard to size, sector, years of training experience, region and supplementary support from external training providers. Following the theoretical sampling approach of grounded theory, the case studies were successively chosen and carried out between 2009 and 2012. In eight companies we conducted 10-15 interviews and in the rest 1-6. Three big companies with more than 1500 employees opened their doors, five of medium size (500-1000 employees) and six small ones (6-90 employees). They belonged to the following sectors of trade and industry: power and electrical engineering, vehicle and engine construction, chemical industry, tool making, drive systems and components, facility management (cleaning), building, insurance business, information technology, hotel and catering trade, health, electrician trade, motor vehicle trade. A total of 127 interviews with various types of trainers, HR managers, line managers, employee representatives and apprentices were carried out and interpreted hermeneutically in order to develop a first sketch for an empirically “grounded theory” on the situation of workplace trainers in German apprenticeship training.

Results

The position of apprenticeship trainers in economic organisations is generally characterised by “institutional weakness” (Pätzold et al. 1986) due to an ambivalent and precarious status (cf. Schlösser et al. 1989) in the company context. This phenomenon can be observed as soon as the training responsibility is delegated to specific colleagues or business units rather than continuing to be shared collectively. Therefore it primarily applies to medium and large companies regardless of their sector. Here trainers face a number of structural dilemmas. First of all, apprenticeship trainers act at the threshold between the education and employment system and need to balance conflicting role expectations. On the one hand, they have to fulfil a public

task regulated by the VET system. They are asked to prepare young people to attain an educational qualification and successfully pass the chamber examination. Here they have to respect standard regulations set up by the state, i.e. the Vocational Training Act (BBiG § 14). On the other hand, they have to develop well qualified and loyal new workers that meet the specific needs of the company. Finally they have to respond to the personal needs of their individual apprentices, for whom they often feel a moral responsibility. Last but not least, motivated young people are also a prerequisite for their personal success as trainers. One training manager described his specific intermediary position as follows:

"You are always caught between a rock and a hard place. You have obligations to management, of course. You also have obligations to the apprentices, to the workers' councils and to the parents. You need to remain very balanced and keep a clear head when approaching things. [...] This involves considerable personality skills, [...] like a politician, [...] to ensure that everyone is happy to some extent."

An institutional handicap of the formally designated trainers is that they are dependent employees and at the same time employers to the apprentices. Besides the general work organisation of the company and branch, their scope of action depends to a large extent on their individual position in the organisational hierarchy. If they happen to be middle managers themselves or personally get along particularly well with their line manager, they have a better chance to adapt and improve their training activities according to their own as well as their apprentice's needs than someone whose job description is more limited. The same obstacle applies to the training manager coordinating all workplace trainers in the different departments of the company. If this function is delegated to someone in a separate service department rather than being administered by the boss him or herself, such a person has very limited administrative power. Primarily in the tertiary sector, where general cost investments in apprenticeship training are significantly lower than in the industrial manufacturing sector, training managers mostly do not have an individual budget for training matters at their disposal. Generally speaking, training managers strongly depend on personal networks and informal ways of cooperation with all parties involved in the training process of apprentices. The better the corporate culture of the company, the better the training will be.

Due to their specific task and intermediary position between employer and employee status, trainers formally also lack any institutional support by the works council. Both the Vocational Training Act (BBiG § 27-30) and the Works Constitution Act (§ 98) protect apprentices from training employers and trainers who do not display the proper personal aptitude. Therefore, committee members traditionally take sides with the apprentices when conflicts arise and are barely aware of the constraints of the trainer's role (cf. Busse 2011).

The vast majority of the training personnel involved in apprenticeship, probably 96 per cent (cf. Bahl 2012), provides training as a sideline. They have to fulfil both educational and profit-oriented tasks, and growing cost pressures and acceleration of work processes bring an exacerbation in personal time and goal conflicts as well as raising legitimisation issues within the employer context. While apprentices are visible, the trainers behind them are not and there is little official recognition for their contribution to the training success. An Austrian case study classifies them as "hidden protagonists of workplace learning" (Ostendorf 2012). Global processes of reorganisation such as outsourcing and segmentation further increase the structural pressures in-company trainers face and threaten the traditional role of workplace trainers in apprenticeship training. Most of the trainers interviewed were poorly prepared to do anything about this trend, and some were so frustrated that they quit their role.

Conclusions for policy/issues for discussion

The general call for professionalisation of VET personnel in German and European policy does not adequately respond to the particular situation of workplace trainers. The continuous comparison of their function with professional teachers is misleading. To develop and promote competence frameworks is of prime importance only for professional full-time trainers in VET institutions and for the few that exist in large companies. Promoting them entails the risk of masking the actual potential of facilitation processes provided by the majority of informal workplace trainers and of inadvertently pushing the general tendency of outsourcing the training function altogether. Furthermore, focusing on trainers as individual agents obstructs the view of the organisational challenges and realities of training provision in an economic setting. These circumstances have an essential impact on the daily practice of trainers but usually are not touched upon in schemes of professional development. In order to strengthen the potential of apprenticeship training and workplace learning in general, the scope should be broadened on the contextual factors affecting the general learning culture and address companies providing training as a whole. Even in Germany, apprenticeships cannot be continued as a cultural given any longer, but need to be promoted as a central operational field on the macro, meso and micro level of the economy. Learning in the workplace needs to be promoted as a concept that entails more than insular situations of instruction and that also requires a supportive and comprehensive strategy for the organisation as a whole. One element could be the “cultivation of learning support as a general assignment” for all employees during their induction in the work process as well as in later stages of their career (Grollmann 2010). The position of informal as well as formal workplace trainers should be strengthened by highlighting their role and by systematically enabling mutual exchange. Professional development of workplace trainers requires as a starting point the systematic reflection of their role within the respective company context. Strengthened awareness and self-esteem in their role as learning facilitators are prerequisites for the development of personal strategies to negotiate their contradictory demands.

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Competence development of pre-vocational and vocational teachers

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Summary: How can teaching competences be identified and defined for the process of TVET teachers' education and training? The article gives an overview of a concept of modeling teachers' competences based on the theories of stages and specific learning areas for competence development and of specific occupational tasks of vocational teaching. The model is used for the shaping of advising and mentoring processes in practical teacher education modules and for the shaping of learning situations regarding specific occupational tasks of vocational teaching.

Keywords: Teaching competences, advising and mentoring, occupational tasks, vocational teacher education

Research theory and methodology

Learning in vocational contexts is understood as a process of construction, reconstruction and deconstruction regarding the acquisition of knowledge. This means: building up a cognitive image of one's professional environment. Learning processes are connected with „learning situations“ (see the American concepts „situated learning“ by Lave&Wenger 1991 and „situated cognition“ by Cognition and Technology Group at Vanderbilt 1990).

Based on this understanding, the following approach comprises a concept for teaching competences which can be identified and defined for the process of TVET teachers' education and training. For concepts explaining the process of competence development in teacher's education we employ a dual theoretic orientation:

- The theory of the „Novice Expert Paradigm“.The theory describes the process of skill acquisition based on steps of development of professional expertise within four areas of competence development from beginners to experts and the corresponding types of knowledge (fig. 1).
- The model „Teachers' Occupational Tasks“ („Lehrerfunktionen“ – KMK 2000). The model describes typical tasks in teaching and educating of professional school's teachers and serves as a basic concept for the modeling of learning situations in the Magdeburg teacher's education program (fig. 2).

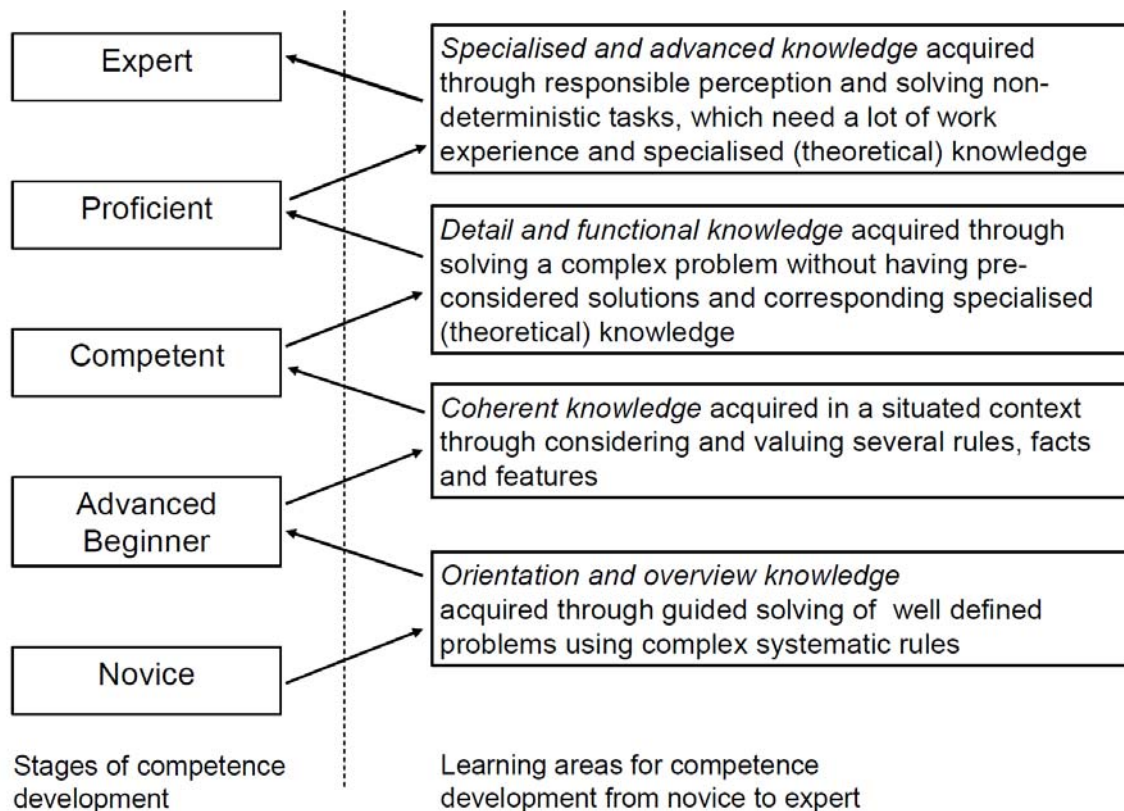


Figure 4: Novice Expert Paradigm (Dreyfus&Dreyfus 1986, Rauner 1999, 2007)

These two concepts are to be combined in the process of modeling a *vocational teacher's occupational profile*. Nine fields of competences are identified, each structured by different "competence indicators". This approach is focusing on three steps:

1. Defining a model of an "occupational profile of vocational teachers" (based on KMK 2000). This normatively defined concept is focusing on teacher's activities differentiated by nine occupational tasks.

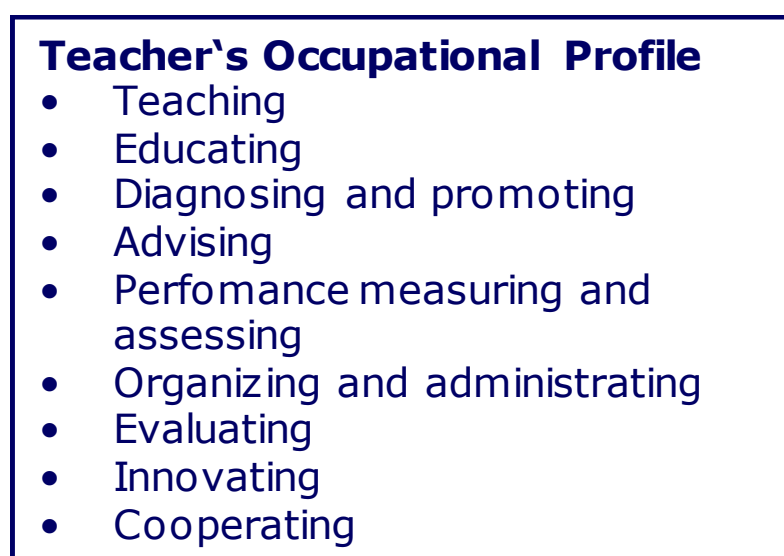


Figure 5: The teachers' occupational profile of the Standing Conference of the Ministers of Education and Cultural Affairs in the Federal Republic of Germany (KMK 2000)

2. Identification of typical sub tasks as basis for the identification of characteristic pedagogical skills. For example, the task “teaching” is broken down into four sub tasks.

Occupational Task: Teaching

- Planning of lessons
- Reflecting teaching and learning situations
- Shaping of learning environments
- Guiding students to self organized learning processes

Figure 6: An example of sub tasks for the occupational task: Teaching

3. Differentiation of sub task profiles for finding indicators for professional expertise on different stages of competence related to stages from beginners to expert in the novice expert paradigm.

Competence Indicators for the Sub Task: Reflecting teaching and learning situations

- Profound knowledge about relevant disciplinary subjects
- Teaching in accordance with the planning structure
- Developing and succeeding relevant learning objectives
- Reflecting the planning structure with due regard to student’s learning experiences

Figure 7: Sub task “Reflecting teaching and learning situations” – competence indicators

This concept has been developed based on “competence patterns” as a model of teachers’ occupational tasks and indicators for different stages of competence. The verification is based on a communicative evaluation and validation process in workshops with students in vocational teacher education programs and with practitioner experts (the latter are vocational school teachers with expertise in educating and training students in phases of teaching practice).

From the methodological view the process follows the concept of participative development in the tradition of action research.

Results and their implementation

The results can be useful in different research and development fields:

- Defining a theoretical concept for shaping learning situations in teacher’s education;
- As a framework for competence based advising in mentoring processes;

- Shaping a theoretic concept of indicators for competence assessment processes.

The presentation will focus on experiences gained concerning the first two topics, being introduced with the example of the implementation in a learning situation for students in their practical modules in relation to the advising and mentoring process. In the project, the model is used in three ways:

- Supporting advisors and mentors during vocational teacher's education in advising and mentoring processes for students in their practical education phases;
- Supporting students in self-reflecting processes regarding their skills/expertise development;
- Shaping of learning situations for different occupational tasks of vocational teaching.

An overview will be given of the theoretical background, the implementation of the Magdeburg model of TVET teacher education awarded by Germany's "Stifterverband für die Deutsche Wissenschaft" and the existing experiences using the model in research regarding the training of TVET teachers.

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Creating matrices of learning situations as a didactical possibility to fabricate an internal differentiation for action-oriented vocational education

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Summary: Teaching by using work process-oriented tasks means to give students the chance to develop their competence by working with a task and applying a special part of salience. However, looking at actual student groups it has been noted that their experience with this task varies. This report shows a method to create inner differentiated learning situations by using methods of vocational science. To illustrate the execution of these methods, they have been applied to the work process-oriented task “Diagnosing and Repairing an Intake-Manifold Fuel Injection”.

Keywords: Work-process-orientation, inner differentiation

Introduction

For quite some time now, vocational training has set itself the goal to foster the development of competence.

This means to coach trainees and students to be able to take the initiative to plan, execute and reflect upon solutions and their results for problems in situations, relevant for their vocation, which they have not encountered before (Spöttl/Becker/Dreher 2009, 142). The didactically adapted work process-oriented task (hereinafter referred to as learning situation) has emerged as the curricular structural element. The term “didactical adaptation” describes the fact that teachers are able to

- evaluate the shaping of the vocational value of a task, which is recognized in the vocational reality (actual complexity of the task, its occupational contentual and methodological relevance as well as the, thus, following logic classification of the development).

Moreover, they are able to

- diversify this task in a way that an inner differentiation develops. Only if this is the case, it is possible to satisfy a study group’s heterogeneity with regard to individual requirements, opportunity to perform and previously gained experiences.

The latter, in particular, is of crucial significance, because in order to actually develop lessons, which focus on the fostering of competencies, they have to have a developmental logic, preferably relating to each student. This is to constantly allow for the crucial step from “know that” to “know how”, needed in the students’ growth of competencies (Dreyfuss/Dreyfuss 1986).

Ideally, with reference to work process-oriented tasks, a variation of learning situations, which are as closely linked to the individual prior experiences of the students and, therefore, match the development task, are presented (Havinghurst 1974). Hence, competence originates from the preoccupation with didactically and specifically chosen vagueness (called salience, Neuweg 2004,32) – only, they cannot be chosen specifically for a study group, since the chosen learning situation has an individual mass of salience with regard to each student. In order to minimize this prob-

lem, it seems to be useful to vary work process-oriented tasks with the same core content in a way that results in different forms of vagueness. Thus, the question one should ask is: How can work process-oriented tasks be differentiated internally?

Methodology

In order to approach the previously set task, the following assumptions have been made:

1. A vocation is defined by its essential working tasks, which in turn can be identified through the analysis of vocational skilled work (Rauner 2002, 443f) by using vocational scientific methods.
2. The dominating work processes of a vocation have to be projected as its contentual core and, thus, present its curricular basic element like “learning field” german vocational curricula.
3. With this projection the principle of curricular exemplarity has to be followed (Huisinga 2006, 354). A choice concerning the substantiality and the shaping of job value (possibility of competence fostering by allowing space for designing, Neuweg 2004,31) has to be made.
4. This exemplarity has to be repeated in the adaptation of the respective teacher and his or her finishing touches: Therefore, it is the teacher’s responsibility to create a learning situation based on the respective learning field and decide on the specific content of the work, the methods used to determine problems as well as the needed specialist knowledge within the framework of didactical analysis, accordingly.

Figure 1: Steps to content analysis, problem solving and salience of a work process

Step	Methodology	Result (E.g.: Intake-manifold fuel injection)
Macro-analysis Market share	Sector analysis	Frequency of work on equipment for intake-manifold fuel injection (Job characterizing relevance)
Macro-analysis Problem area	Skilled worker-Experts-Workshop	Generic malfunction of the equipment (Job shaping relevance) Identification of job-oriented variations of the exercise
Meso-analysis Term paper	Working process matrix through observation and subject specific interviews	Illustration of diagnostic and maintenance processes for each variation of the exercises; overview of (non-) applicability of known fault tracing
Micro-analysis Description of working processes	Vocational scientific task analysis	Creation of matrix of learning situations based on significant known basic mistakes (“categorical errors”)
Lesson scheduling	Process strategy for the learning situation	Time designation for the phases of informing, planning, executing, controlling and reflecting; Expected/appraisable results for each phase; Medial requirements; Methodological standards for students based on gained insight; Methodological standards for the teacher when creating lessons

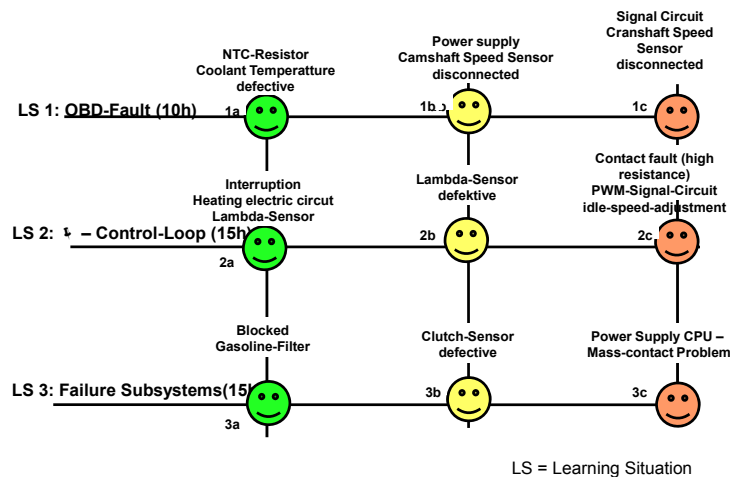
Ensuing from this, the method presented in the following has been developed. It enables the implementation of internal differentiated learning situations gained from work processes. For this purpose it has been determined that the actual work process (example used in this case: diagnosis of intake-manifold fuel injections) has to be identified. However, its content and, particularly, the salience of already monitored task variations have to remain unknown. In total, this leads to the following methodological steps (see Fig.1):

Results

(E.g.: Diagnosis / maintenance for Intake-manifold fuel injections)

Based on the previously described method, the matrix of learning situations, illustrated below (Fig. 2), has been developed for the chosen example of “Diagnosis and maintenance for intake-manifold fuel injection”:

Figure 2: Matrix of learning situations



The matrix in Fig. 2 shows that three learning situations have been determined in ascending salience:

1. An error, identifiable through On Board diagnosis at the lowest level of salience;
2. An error, identifiable with the help of multimeter and oscilloscope in the Lambda-control circuit with medium salience, because a full review of the Lambda- control circuit with an oscilloscope is necessary.
3. An error in the machine’s sub-systems with a high level of salience (fuel feed system, transmission sensor for reduction of torsional moment while switching gear, measuring error CPU-power supply), since the system has to be looked at with reference to its whole interconnection with the automotive.

Within the generic learning situation, an additional inner differentiation has been implemented (with reference to learning situation 1, see Fig.2) either by a defective sensor (coolant temperature sensor) or a malfunctioning power supply of a sensor (in this case, the crank sensor). Another option is a defect with the signal wire of the sensor (in this case with the crank shaft sensor, which is used as a redundancy for the crank sensor in newer machines).

The third task described in learning situation 1 requires the mandatory use of an oscilloscope, which is not expected of less strong students before learning situation 2. However, since student groups present their findings to each other during the course of a learning situation, it should be noted that the use of an oscilloscope for the registration of signals, which can vary periodically, is advised.

Thus, students will gain this insight regardless of the task they have worked on and they will then have to apply it in learning situation 2. This is due to the fact that this is the only way to determine if the Lambda-probe is in working order. As has been the case with learning situation 1, a link with the third learning situation will be made during the course of the second one since, in turn, the group with the highest aspiration has to deal with the problem that not the control circuit itself is defective, but due to a false signal for engine speed of the crankshaft, an unnecessary greasing of the idle mixture develops. In addition, it is necessary to deal with the concept of the pulse width modulation signal versus frequency-based signal information. Hence, with this matrix the teacher presents a spiral curriculum for a work process-oriented task, with which it is possible to address resp. let the students work through all the other essential subject related contents (structure and mechanics of an intake-manifold fuel injection, usage of the measuring instruments multimeter and oscilloscope, capabilities and limits of OBD).

Now, what the teacher has to accomplish on his or her own is to develop a method of pedagogic diagnosis in order to compose student groups, who then can be assigned to learning situations with a suitable level of challenge. In the course of this, a switch within a work process-oriented task (e.g. from 1a to 1b or 2c to 3b, see Fig.2) is explicitly intended.

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The influence of work process oriented learning context on learning outcomes in VET

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Abstract: With data collected from the COMET project, this study analyzes the influence of work process oriented learning context on learning outcomes in VET. Results show that six factors, i.e. support from instructor, variety of work, work process orientation, challenge of work, complexity of work, autonomy of work, represent the characteristic elements of work process oriented learning context; and that work process oriented learning context can considerably promote the formation of occupational commitment, but has insignificant influence on professional competence development and students' perceived learning outcomes due to the dominant position of school-based vocational education in China.

Keywords: Work process oriented learning context, professional competence, occupational commitment

Introduction

As its role of facilitating vocational learning, school-enterprise cooperation is promoted by vocational schools and colleges to improve the quality of vocational education and training (VET). Measures such as strengthening in-company training are taken in practice. However, problems still exist regarding school-enterprise cooperation. For instance, though arranged a longer schedule for in-company training, students are not capable of meeting requirements of a occupation or company (Wang, 2008). What influence does learning context design have on the quality of vocational learning? Within the framework of COMET international research project, this study focuses on the topic of learning context in VET.

A learning context is the environmental factors and their combination with which learners may interact during learning process, including specific learning contents, tools and people that might facilitate learning, physical and social psychological situation acting as a general background for learning activities (Chen and Zhang, 2003). From the perspective of situated learning theory, learning context involves learning contents, methods, sequences and sociality (Gao, 2000). Vocational learning mostly occurs in work place, but not all work places facilitate learning. A *learning-enhanced work place* should fulfill the following criteria: problematic situations, freedom and authority to act, flexibility of altering current work process, holistic work process, communication and support among colleagues, work tasks that match one's competence and certain stage of professional development (Franke, 1999).

Work process oriented learning context (WPLC) refers to a learning context that facilitates work process knowledge acquisition and professional competence development. It has the following characteristic elements: support from instructor, variety of work, work process orientation, challenge of work, complexity of work, and autonomy of work. Learning outcomes consist of occupational commitment, professional competence development and students' perceived learning outcomes. The research questions are: 1) are there any differences between students' perceptions of the above 6 characteristic elements? 2) does and how WPLC have any influence on learning outcomes, esp. professional competence development?

Methodology

1. Participants

724 students majoring in vehicle maintenance from 16 vocational schools/colleges take part in the test, of whom, 500 (62.2%) are from 9 vocational colleges and 274 (37.8%) from 7 technician schools.

2. Instruments and Measures

Four equated, open-ended test tasks developed by the COMET Project (Rauner et al 2012) are used to measure professional competence. Reliability and validity of the tasks are proved to be satisfied in Germany. Certain expressions are altered to make them more intelligible for Chinese when translating (Zhuang and Zhao 2012).

Test tasks are distributed randomly. Participant's solution to a given question is open-ended and rated according to 8 criteria with a four-item Likert Scale. Based on their scores, participants are assorted to 3 levels: functional, procedural and shaping competence. Rater reliabilities of the four tasks (Finnjust) are all above 0.7, signifying good consistency among raters. Other variables are measured with COMET questionnaires and sub-scale reliability (α) range from 0.676 to 0.940.

Data analysis and results

1. Differences among students' perception of the factors of WPLC

No significant perceived differences of the 6 factors exist among students with different competence levels (all $p < .001$). Significant perceived differences of the 6 factors exist between students with high occupational commitment and those with low occupational commitment (p range from .245 to .871). According to their perceived learning outcomes, students with good learning outcomes perceived the 6 factors significantly different from those without good learning outcomes (all $p < .001$).

2. The Influence of WPLC on Learning Outcomes

Analysis indicates that the correlations between professional competence and each factor of WPLC are weak and not significant. While professional competence correlates significantly with occupational commitment ($r=.079^*$) and students' perceived learning outcomes ($r=.082^*$), which can be an alternative variable of professional competence to investigate the influence of WPLC on learning outcomes.

On the basis of correlation analysis, the conceptual model is constructed: the WPLC represented by 6 factors, together with the conventional school based learning context including teachers and classmates influences the development of students' professional competence or perceived learning outcomes both directly and mediated through occupational commitment. The reason for adding conventional school based learning context into the model is that VET is mainly school based in China.

The model can not be recognized when taking professional competence as the learning outcome. Replacing it with students' perceived learning outcomes, the model can be recognized but still needs optimizing. Pathways without significant standard estimates in the expected directions are deleted, co-variation relationships between e2 and e5, e2 and e6 are added.

The revised model (Fig 1) is good fit with satisfied goodness-of-fit indexes (NFI=.989, CFI=.997, RMR=3.098, RMSEA=.022) as well as non-significant Chi-square value ($\chi^2=42.796$, $df=32$, $p=.096$). It indicates that:

- The 6 factors, i.e. support from instructor etc., are capable of representing the characteristic elements of WPLC;

- "Work process orientation" is in co-variation relationship with "supports from trainer or instructor" and "variety of work" respectively;
- WPLC significantly influences the development of students' occupational commitment (path coefficient= .33, $P < .01$), while it has insignificant influence on students' perceived learning outcomes;
- Conventional school based learning context significantly influences students' perceived learning outcomes (path coefficient= .60, $P < .01$), while it has insignificant influence on the development of students' occupational commitment.

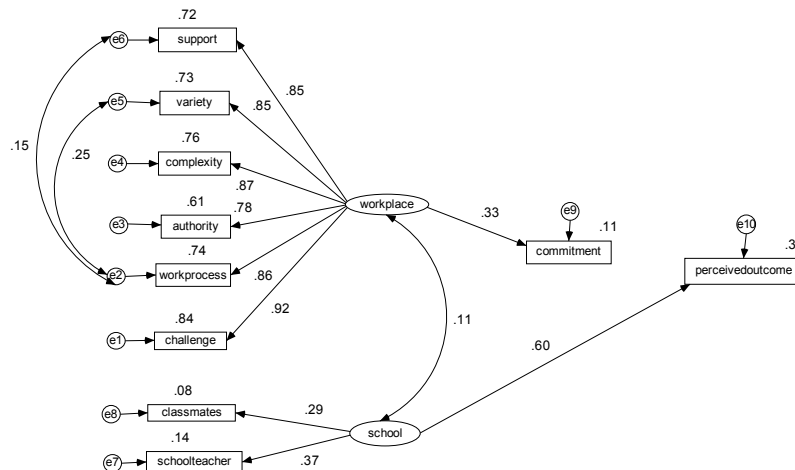


Figure 1 the revised model

To find factors that influence the development of professional competence, further analysis is conducted and indicates that professional competence is strongly related to items "the received task is a challenge to me" ($r = .101, p = .007$), "I would like to talk with others about my occupation" ($r = .110, p = .007$), "I am capable of concentrating on the test task" ($r = .126, p = .001$), and is negatively related to items "the learning tasks are not challengeable to me" ($r = -.115, p = .002$), "I am not interested in my current occupation" ($r = -.159, p = .000$).

Discussion and conclusion

A WPLC rather than a conventional lecturing approach contributes to the formation of occupational commitment.

Only "active" commitment has positive influence on professional competence. In China VET schools is a reluctant choice for young people. Though students demonstrate a high level of occupational commitment, it is merely a kind of "passive" adaptation, which is hard to promote professional competence, esp. shaping competence development. This could also explain why correlation between occupational commitment and professional competence is weak.

A challenging task has positive influence on professional competence development, while a routine one does not. Students participating in this study admitted that most tasks they performed during internship are of low challenge. When taking routine tasks instead of developmental tasks (Havighurst 1951) as learning contents, WPLC has less influence on competence development.

Students' expectations about learning outcomes namely perceived learning outcome are not the development of professional competence but the accomplishment of routine tasks. In structural equation modeling, a model cannot be recognized if professional competence is taken as learning outcomes; yet it can be recognized in the

case of students' perceived learning outcomes. Furthermore, the revised model indicates that teachers influence students' perceived learning outcomes most, meaning that students' expectations about learning outcomes originally derive from teachers' understandings of VET goals. Students rely mainly on teachers' instructions, lacking the chance and ability to solve problems on their own.

To effectively promote students' professional competence development, the characteristic elements of a learning context, especially the availability of developmental tasks, should be fully considered in instructional design. To make students better aware of the meaning of their works and the goals of VET could help promote professional competence development.

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The influence of apprenticeship systems on occupational-biographical orientations – findings of a qualitative comparative study of the VET in England and Germany.

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Summary: Starting point of the study are fundamental changes in the working world and its effects on European VET systems. The questions arise, how these changes affect the development of occupational-biographical orientations and how VET systems influence the development process of these orientations? Applying a purely qualitative research design (autobiographical-narrative interview; narrative analysis and grounded theory) car mechatronics from Germany and England have been interviewed about their life in general and their occupational life in specific. There are two findings: a) three occupational-biographical orientations which are valid for English and German car mechatronics have been reconstructed, i.e. 1) 'strategic use of VET institutions', 2) 'drawing border regarding the work field' and 3) 'passionate handling of the automobile'; b) institutional conditions (e.g. VET system) influence the development process of these orientations.

Keywords: Occupational-biographical orientations, English and German VET system, qualitative research

Changes of the working world and its effects on European VET systems

Throughout the last twenty years a macro-societal change can be observed in complex societies like Britain and Germany. This macro-societal change is especially visible in an increased individualisation and globalisation (cf. Beck 2003). These two developments affect the working system, for instance, occupational biographies have become much more flexible (cf. Voss/ Pongratz 1998). In addition, especially in Germany the occupational principle (Berufsprinzip) has become a site of much discussion and reform. This is also happening in the context of European VET policy and the co-called Copenhagen process: its intention being to make European VET systems comparable in order to secure transparency. European citizen are supposed to acquire vocational qualifications which are comparable and accepted throughout Europe and thus shall become mobile workers.

Furthermore, the introduction of a modularized VET system for whole Europe shall enhance the employability of every working European. One strand of German scientists question the anticipated positive effects the introduction of a modular VET system brings for German trainees. They fear that replacing broad vocational qualifications with partial qualifications will hinder the development of a holistic occupational self-conception as they argue that employability and Germany's occupational principle are incompatible (cf. Drexel 2008; Kuda/ Strauß 2006). In fact, up to now there have not been any studies which investigated the connection between the VET system and the development of occupational-biographical orientations. Apart from this

European policy context it is a worthwhile endeavour to analyse the development of occupational-biographical orientations as the working world itself changes rapidly and it is doing this constantly. For instance, the automobile industry has experienced a huge change within the last twenty years.

Whereas the automobile had been more or less a purely mechanic product, nowadays it is mainly an electronic device and employees need to rise to new challenges. In fact, these changes within the automobile industry led to a new occupation – the so-called car mechatronic. This occupation was introduced in Germany in 2003. Thus, employees do not only face European policy challenges like developing an increased employability and changes within the national VET system but they also have to deal with a fast-changing technology and thus being constantly challenged in their daily work.

Research questions

With this in mind I pose the following two research questions:

- A) Which occupational-biographical orientations do English and German car mechatronics develop?
- B) How do a fragmented (English) VET system and a holistic (Germany) VET system influence the development of such occupational-biographical orientations?

The term occupational-biographical orientation has been given favour over terms like 'identity' or 'self-conception'. The term 'identity' is too rigid. An 'orientation' has a cross-situational character and it does not stay the same throughout the time as new life situations lead to new experiences and thus change orientations (cf. Giegel/ Frank/ Billerbeck 1988). So, looking at a process – in this case, how occupational-biographical orientations are developed – it is important to use a concept which captures the process character.

Methodology and qualitative research design

The methodology applied is the grounded theory methodology according to Strauss/ Corbin 1990. It is characterised by theoretical sampling, coding and constant comparison. The autobiographical-narrative interview (cf. Schütze 1983) had been employed with the argument that the analysis of a whole life story enables the researcher to reconstruct biographical and structural influences regarding the development of occupational-biographical orientations.

Those life stories had been analysed in a two-fold manner. Firstly, the narration analysis had been applied (cf. Schütze 1983) in order to reconstruct biographical process. Secondly, grounded theory coding (cf. Strauss/ Corbin 1990) had been employed so as to develop a pattern of occupational-biographical orientations and the influence of the VET systems. The sample consists of eleven car mechatronics – five English and six German car mechatronics. The chosen car mechatronics had to be working in their occupation for at least three years and German car mechatronics had to complete their apprenticeship successfully. The informants had been interviewed once. Those interviews lasted from one hour up to three hours.

(Mind, the car mechatronics interviewed were between 30 and 67 years old, thus they have experienced the VET system in the 60ies till 80ies. However, it is important to look at this sample as they will be in the working world for another 30 years and the results present possible necessary improvements of the VET).

Three patterns of occupational-biographical orientations and the role of the national VET system

Three patterns of occupational-biographical orientations

The interviews have been analyzed on the one hand in respect to the individual occupational-biographical orientations with the result that both English and German car mechanics can be put in one of three re-constructed patterns of occupational-biographical orientations, i.e. 1) 'strategic use of VET institutions', 2) 'drawing border regarding the work field' and 3) 'passionate handling of the automobile'. Thus, it has been discovered that all interviewed car mechatronics go through a professionalization process as they belong to one of the three patterns. The respective pattern stands for the respective kind of professional acting, thus the term professionalization.

The role of the English and German VET system

The interviews have been analyzed on the other hand regarding the subjective perception of the VET system having as result that certain institutional conditions have to exist in order to choose the 'right' occupation and thus completing the apprenticeship successfully and having a smooth transition to the labor market.

These institutional conditions which are given in the German but surprisingly not in the English context are a) family addressing/ discussing the issue of choosing an occupation b) a school curriculum which includes the issue of vocational training by providing information about occupations or organizing a trip to the information centre and by providing the opportunity to get to know occupations hands-on via work-placements. In addition, this strand of analysis shows that crucial components for a successful apprenticeship as they exist in the German but surprisingly not in the English VET system are up-to-date teachers, trainers and college equipment as well as a balanced theoretical and practical input.

Discussion

Looking at the findings one can see that there is a connection between institutional conditions and a smooth transition in and successful completion of the apprenticeship. Whereas in Germany institutional conditions such as family support and school curriculum lead to a smooth transition from school to the VET system, in England are those institutional conditions missing, thus the transition from school to VET is brittle for English youth.

Furthermore, one can see that both car mechatronics – English and German ones – follow one of the three reconstructed patterns of occupational-biographical orientations, respectively one of the three kinds of professional acting in their occupation. They do this in spite of the different national institutional conditions. The only difference is that it takes the English car mechatronics longer and with personal costs to 'arrive' at one of the three patterns.

Those findings show that the VET system influences the development process of occupational-biographical orientations. However, the concern of some German scientists that replacing broad vocational qualifications with partial qualifications will hinder the development of a holistic occupational self-conception has been refuted with this study. Furthermore, the results of this study show which contents should be in the curriculum of the occupation car mechatronic and which competencies car mechatronics should have in order to rise to the new challenges of their occupation.

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Competence measurement and development in TVET: Result of the first COMET test in South Africa

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Summary: The results of the first COMET pilot test in South Africa have provided a meaningful platform from which to design and implement qualitative improvements in the teaching and learning associated with apprenticeships. This paper focuses on a summary of the results of 300 apprentices in the manufacturing and engineering sector in electro technology based apprenticeships. An analysis of the results has informed an improvement process in work integrated learning which is also reported in this paper.

Keywords: Large scale competence measurement, work integrated learning, dual system apprenticeship.

Introduction

The decision to participate in a large scale competence diagnostics exercise was informed by the rapid revival of apprenticeships in South Africa. Whilst the system was being revived against tried and tested governance processes, there was a new qualitative imperative which required international benchmarking of levels of vocational competency acquired during the apprenticeship.

Reforms through the National Skills Development Act, over the past decade have also supported more scrutiny of industrial productivity & competitiveness, levels of training investments, promotion of using the workplace as an active learning environment and improvement of employment prospects of those individuals who had been previously disadvantaged.

Methodology

This study was scoped to include apprentices in the electro-technology occupation from six different training institution types, namely: accredited in-company training schools (x2), public vocational colleges (x2), private vocational college (x1) and university of technology (x1). TVET teachers of the training provision institutions were introduced to the COMET methodology four months before the apprentices were tested in order for teachers to start teaching using work-process knowledge principles before the application of COMET tests.

The rater training followed the structure of the training which has been provided for all other international COMET projects. A very high level of inter-rater reliability with a coefficient at 0.89 was achieved in the last round of rating exercises. Approximately 25% of test takers completed the vocational identity questionnaire supported by further checks on data patterns where test takers chose not to participate in the vocational identity and commitment questionnaire.

Results

The results are summarised into three high level findings:

1. High motivation, but relatively low scores.

The test takers were highly motivated and interested in the test tasks, however, the results were often below the level of functional competence. Processual and holistic shaping competence had rarely been achieved, yet the South African learners were very motivated to take the test and were very committed to their learning in general. This indicates a lost opportunity in learning potential. Comparisons to similar studies in Germany and China show the following trends:

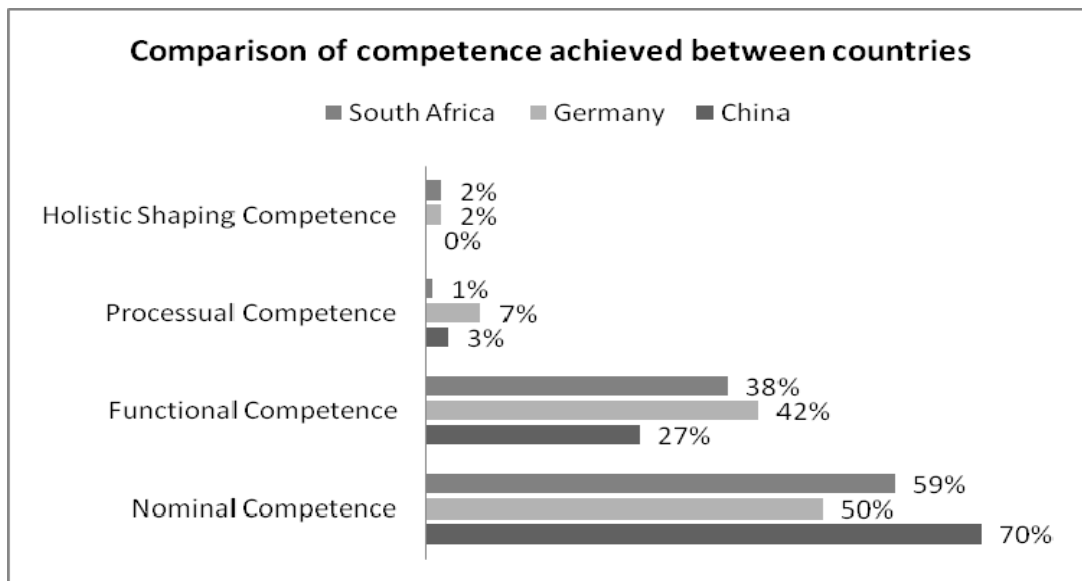


Figure 1: First South African pilot project results compared to other countries in the COMET Network.

2. Risk groups presented in “nominal competence” are lower at in-company training institutions.

The proportion of learners that remained on the level of nominal competence - the ‘risk group’ – was significantly lower where learners were trained within a company. Reflected work experience is therefore an important factor in acquiring occupational competence. Public Vocational Schools will require more structured work integrated learning built into the curriculum over the three years of vocational education to reduce the ‘risk group’ of learners.

For the pilot study COMET South Africa, this result was supported by an analysis of the context questionnaire: learners at colleges and in-company training centres did not distinguish between motivation related to organisation and occupation in the development of vocational identity. Learners indicated that they were proud of themselves being able to learn and become a qualified artisan, yet the study found that ‘the high estimation of what they are doing partially hinders an analysis of own and structural weaknesses’.

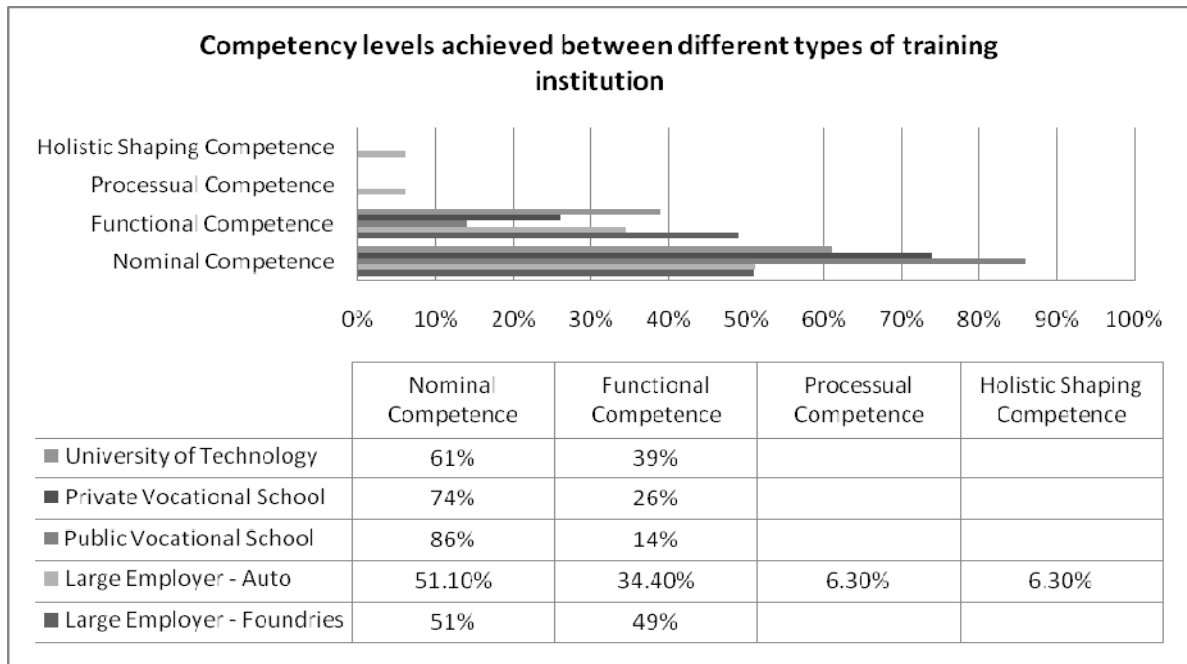


Figure 2: Comparison of competence levels achieved by institutional training type

3. Stagnation of competence development during the course of training.

There was no significant difference between the competence levels of apprentices of the first, second and third year of training. During the course of an apprenticeship of three years, more knowledge is acquired, but this gain of knowledge can only be considered as horizontal expenditure or increase of knowledge. A rise in competence level is not achieved (i.e., stagnation in competence development). Considering the high levels of motivation and commitment to learning indicated in the study, there is a measure of unused potential during the training years.

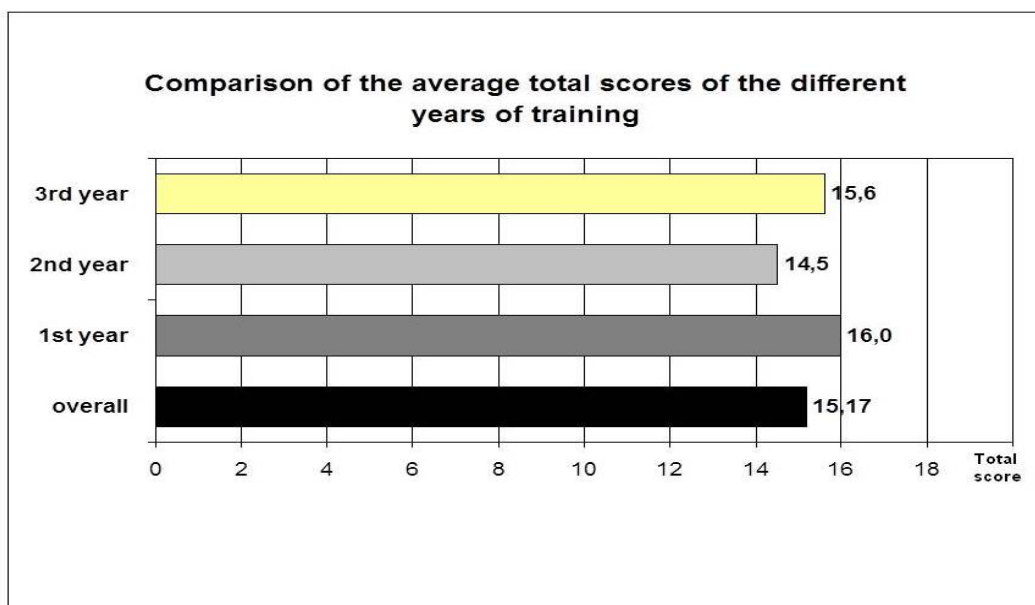


Figure 3: Comparison of competence level achieved by learning year.

These results have stimulated new initiatives in the South African TVET system with particular emphasis on the following priority interventions:

- A dual organisation of vocational education within Public Vocational Schools commences July 2013 through three institutions that will form the core of a new network for curriculum development and training of teachers supported by additional large scale competence diagnostics projects over an increasing number of additional occupations.
- Public Vocational schools in this dedicated network will be supported in their capacity to build relationships with local industry through support instruments designed to benchmark return on training investments against quality standards. In this way, opportunities for cooperation in reflected work experience become more accessible.
- In the context of between 10,000 and 15,000 registered apprentices in the manufacturing and engineering industrial sector of South Africa, cooperation in the production of related TVET knowledge and research will be supported through a bursary programme for a select group of PhD candidates in partnership with the University of Bremen I:BB and South African universities, thus securing a knowledge transfer to the domestic research and development TVET system.

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Applying the COMET competence measurement and development model for VET teachers and trainers

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Summary: The COMET competence model, which was developed for the assessment of professional competence of apprentices and students in various occupational fields, has been transformed into a procedure for the comparative measurement the professional competence of VET teachers. The new measurement model for TVET teachers and trainers has been tested in a first pre-test in Germany and is now ready to be applied in various international COMET projects. This article describes the foundation of the COMET teacher and trainer competence model.

Keywords: COMET, TVET teacher and trainer competence, competence measurement, competence development

Introduction

It is one of the major findings of the COMET project (Rauner 2009, 2010, 2011) that competence development of VET students is influenced in the first place by the competence of their teachers and trainers. Among others this had become obvious in tests, where teachers had anonymously participated at students' COMET tests, for example in China. Such tests resulted in individual competence profiles of students/learners which perfectly resembled those of their teachers - although on different competence levels. In other words: a student can only learn as much as his or her teacher is able to impart.

This was one of the reasons why it had been decided to develop a procedure for assessing and developing the competence of teachers and trainers on a pedagogical basis. A transfer of the COMET competence model towards a competence model for VET teachers and trainers should not only make it possible to assess the competence of VET teachers but in the meantime provide appropriate concepts for their continuing education and professional development. That's why the COMET model for VET teachers and trainers is now foreseen to be applied as a didactic concept that helps to shape VET teacher education and training processes.

Methodology

A: Requirements

A competence model for VET teachers requires a content dimension that reflects the specific quality of professional work process knowledge as well as the paradigm of enabling learners to take part in shaping the world of work. Four areas of activity that constitute this content dimension, i.e. teaching, educational programmes, learning environments and school development, must therefore be evaluated in terms of whether and to what extent they are organised according to the concept of the holistic solution of professional tasks.

In the case of VET teachers four areas of responsibility can be identified.

1. Planning, implementation and evaluation of vocational learning processes
2. Development of educational programmes
3. Planning, development and organisation of the learning environment
4. Participation in school development

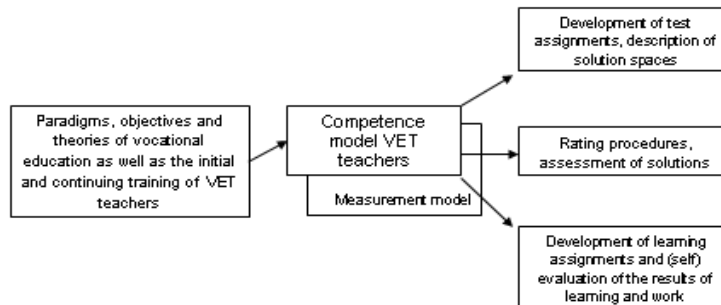


Fig. 1: The relationship between the objectives and theories of vocational education, initial and continuing training of VET teachers as well as the conceptualisation, evaluation and assessment of their competence.

B: The competence model for a “teachers’ work at vocational schools”

The main task of teachers at vocational schools is to enable students to take part in shaping the world of work and the society with a sense of social and ecological responsibility (KMK 1991). The paradigms and objectives of vocational education and of the professional education and practice of teachers constitute the normative framework for a competence model “TVET teacher & trainer” (Fig. 2).

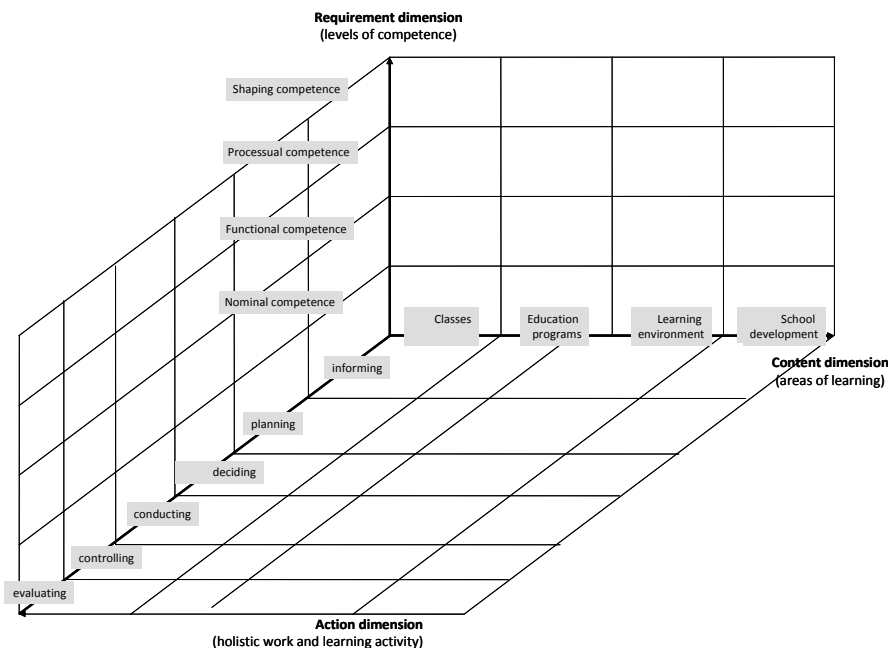


Fig. 2: The relationship between the objectives and theories of vocational education, initial and continuing training of VET teachers as well as the conceptualisation, evaluation and assessment of their competence

Requirement dimension

The objective and subjective requirements of the teachers' work are directly related to their specialist and pedagogical skills. The framework for interpretation is constituted by the nine criteria of the competence model with its four competence levels.

1. Nominal competence

This level of competence has to be excluded from the scope of professional competences when the development of professional competence is introduced as a characteristic of the success of teacher education. Teachers and trainers whose cognitive domain-specific disposition performance (competence) is below the first competence level (functional competence), and who work as teachers in spite of this, have an urgent need for further education.

2. Functional competence

Functional competence is the level attained by (prospective) VET teachers and trainers who have acquired fundamental vocational-pedagogical and specialist knowledge. Functional competence is based above all on the pedagogical and subject specific knowledge to guide actions. However, the test persons are not yet able to apply this knowledge to specific situations and to justify and reflect their pedagogical activity to a sufficient degree.

3. Processual competence

VET teachers and trainers have processual competence when they are able to apply their professional knowledge adequately in situations of VET practice, to reflect their knowledge and to engage in further learning. This competence level is characterised by the ability to design and organise vocational learning processes under the conditions of real life teaching and training. The teachers have a vocational pedagogical concept of work. They are part of the professional community of practice.

4. Holistic shaping competence

The highest competence level represents the ability to solve vocational pedagogical tasks holistically (completely). This includes the criteria of social compatibility of teachers' work as well as the ability to integrate vocational learning processes in the socio-cultural environment. The level of holistic competence includes the ability to weigh, with some creativity, the manifold requirements of holistic problem solving against each other, e.g. the specifications of the curriculum, available resources and the aim to give individual support to learners. At this competence level the teacher is familiar with subject-specific and pedagogical innovations in the occupational field.

Operationalisation

To each of the successive competence levels three competence components are assigned (see table 1). The operationalisation of the requirement dimension follows the psychometric evaluation of the COMET competence and measurement model, which has a similar basic structure (Erdwien, Martens 2009, 62 ff.; Rauner, et al 2011, 109 ff. and Rauner 2013).

Test tasks and structure of test

A COMET test for teachers has a duration of 180 min (max). The test task consist of

- A description of a situation: Outline of a realistic situation reflecting one of the four areas of responsibility of VET teachers (see: methodology). In the description, a test taker gets a detailed picture about the task that is to be solved.
- A task: This task consists of a request to develop and to justify (in detail) a situation-specific solution or alternative solutions.

- A reference regarding the use of auxiliaries: computers / internet facilities should be provided.

Competence Levels	Competence Components
Holistic competence	9. Creativity
	8. Socio-cultural integration
	7. Social compatibility
Processual competence	6. Organisation of teaching and training
	5. Efficiency
	4. Sustainability
Functional competence	3. Subject specific methods (teaching and learning forms)
	2. Subject didactics(of occupation)
	1. Subject knowledge/professionalism

Tab. 1: Components of competence levels

Outlook

Within the frame of various COMET projects in Europe, South Africa and China, the COMET TVET teacher and trainer concept is ready to be introduced. Nevertheless, an internationally standardized competence *assessment* of VET teachers is still very challenging since education of VET teachers and trainers differs considerably according to different national contexts (Grollmann 2005).

Moreover, it has to be stressed, that the structure of test tasks only allows to measure vocational competences of VET teachers as *cognitive dispositions*. They refer to one field of action which is the shaping of vocational teaching (planning, conducting, and assessing of vocational learning processes). Here, it must be left open, as to what extent teachers with a high level of competence in (theoretically) planning vocational lessons are also good practitioners, i.e. whether they are as well practically teaching at high competence levels. This context needs to be further examined and empirically tested.

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Changes to artisan status and identity: Implications for apprenticeship development

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Summary: In South Africa, artisanal work related change has been accompanied by quite radical change to artisanal training practice. While the implications of this strategic official transition from apprenticeships to learnerships in 2000, has still to be fully assessed, the impact of this shift on the status and identity of the artisan needs to be better understood. This will be particularly valuable in charting the future direction of artisanal training in the country. This paper explores initial findings of a study on the changing nature of the artisan over this period. Reflecting on quantitative results, it suggests key features of the sector that are likely to impact on artisan identity and status. These include changes in the profile of those involved in artisanal employment as well participation in apprenticeship and learnership training. It considers what such changes imply for identity and status as mediators of artisanal transitions into the labour market.

Keywords: Vocational education and training (VET), artisans, learnerships, apprenticeships

Introduction

The nature of work has changed extensively over the last few decades and is doing so much more rapidly than was the case in the past. This is associated with structural changes in the economy which include *inter alia*, technological developments (Christidis et al 2002), increasing mechanisation of processes and increasingly globalised production systems. These changes to the nature of work hold implications for our understanding of what work is and so the kind of activities that we conceptualise as important for different activities that constitute work. All these factors are important in understandings of work-related identity and given the close linkage between our conceptions of self and the central role of work in relation to that, it has important implications for our perception of status.

Artisanal occupations have been particularly affected by work related change over the last few decades (Scrase 2003). As a central component of the Vocational Education and Training (VET) field, they constitute an essential aspect of the changing nature of the labour market. Maclean and Wilson (2009, lxxviii), usefully summarise these changes, stating that VET has had to respond to “changes in demand over time for skills and technologies used in workplaces, the globalisation of production, the increasing utilisation of information and communication technologies (ICTs) and related matters”. The combined effect of globalisation and the increasing use of technology are hard to ignore and have profound effect on the nature of work and by implication, associated training practices. This is especially true for artisanal work which has traditionally, and still is, closely associated with manual labour. While it is evident that our economies and forms of production over the world have shifted in favour of more knowledge-intensive forms, the importance of the ‘productive manual labour’ component is still far from being obsolete. Where does this leave the artisan? This is a particularly important question to engage with, where issues around value and status are concerned.

Contextual considerations: Apprenticeships and learnerships in South Africa

While, the global changes constitute an important context to our understanding of changes to artisanal training and work, in South Africa, the introduction of learnerships constitute an important moment for evaluation. As a result of the post-Apartheid context, the political need for transformation made the learnership quite an enticing alternative. The learnership system was expected to address the inequalities of the apprenticeship system by widening access to skills development opportunities to those previously disadvantaged. Learnerships differed from apprenticeships in that it operated across all sectors and all skills levels, not only intermediate level or artisanal skilling, as was the case for apprenticeships.

At the same time, in the labour market, the profile (age and race) of those being employed was already changing and the introduction of learnerships had important implications for the way in which the 'new' artisan was to be perceived. The fact that the 'old' artisans were predominantly white and emerged from an 'apprenticeship' route and the new younger African recruits from a 'learnership' route was clearly likely to impact on both the perception of the quality of training and the new artisans emerging from this training. This has implications for the way in which artisan identities and status affects both occupational choice and outcome for national skills development. In addition, it will enable the country to engage with tough questions around the effectiveness of our current VET system and its linkages, or lack thereof, with the labour market. Indeed, questions around the nature of the transitions for our artisans into the labour market and its impact on status and identity become quite significant for the future of the training regime.

Objectives of the study

In light of this context, merSETA¹ commissioned the HSRC to examine current notions of artisans as they undertake their training and work, in order to reflect on what these notions might imply for the future of artisanal skills development in South Africa. Using the manufacturing sector under its jurisdiction² as an example, six strategic questions summarise the key areas of interest to be addressed through the study: 1) What has happened to the notion of being an artisan over time, and what are the contributory factors?, 2) How is identity and status determined?, 3) How has training of artisans changed over time?, 3) How have changes in the labour market impacted on artisan-status in differing contexts. 4) Are there differences in which older and younger (white and black) artisans perceive their identity and status, given differing historical background, training and contexts? and 5) How have FET Colleges impacted on the notion of being an artisan and the production of artisans?

The research design draws from these strategic questions and employs a mixed-methods approach, elaborated on in the next section.

Methods and research design

The first phase of the study, takes stock of artisanal skills supply and demand. Using a quantitative lens, it aims to describe analytically the size and nature of the artisanal population, as well as the extent and nature of artisanal skills supply and demand. This information is then to be used in the second phase of the study to contextualize

¹ As one of the 21 Sector Education and Training Authorities (SETAs) in the country funded on the basis of a national employer levy system, designed to encourage education and training for the workplace.

² merSETA incorporates levy manufacturing sectors of the economy including, the Auto sector (e.g. BMW, Daimler etc), Motor, New Tyre and Plastics sectors.

and direct the qualitative case study research. Case studies of specific trades interrogate what it means to be an artisan today, and how identity has changed over time. The final phase of the research integrates empirical evidence, framed by a Sociology of Work/Occupations approach, which offers a broad theoretical lens for the study that allows investigation into “occupational structure and the causes of change within it” Noscow and Form’s (1962, 3). The methodological framework derives from in-depth studies, conducted by the HSRC on four professions: medicine, nursing, social work and engineering, undertaken between 2005 and 2009. These studies established a methodology for mapping and understanding a profession at a particular point in time and prescribes in-depth and comprehensive investigations into four areas that underpin an accurate analysis of the drivers of change in an occupation (international and national labour markets and national and international occupational milieus).

Emerging results

The quantitative phase of this on-going study provides significant information regarding the artisan in South Africa at present. It reveals shifts in the nature of, and profiles of those participating in, artisanal skilling and signals employment dynamics that points to areas where shifts in artisanal identity and status are likely.

Key trends in artisanal skills demand

Initial data suggests that in the context of an overall decline in artisanal employment since 2005, there has been growth in employment in merSETA related industries. Not only has there been growth in artisanal employment in the sector, a substantial increase in the employment of qualified artisans is also evident (Roodt et al 2012).

A closer look at these trends reveals critical nuances that might have implications for the perceived status of artisanal employment and related identities. We find the growth in employment of qualified artisans in the MerSETA industries to be driven mostly by young (under 40 years old) and specifically African, artisans (Roodt et al 2012). These intersecting trends constitute a major shift in the profile of older, white individuals traditionally found in the South African artisanal labour market, and points to a complex potential mix of identities.

Key trends in artisanal skills supply

An evaluation of artisanal skills supply through the learnership and apprenticeship systems, indicates that artisanal skilling through the apprenticeship pathway dominates supply in this sector. Of all registered qualifications 47% are learnership while 53% are apprenticeship qualifications. Additionally, of all completed qualifications in this sector, 46% are learnership and 54% are apprenticeship qualifications.

Participation in the different pathway systems are also highly gendered and racialised. While participation in learnerships is dominated by Africans, Whites dominate participation in apprenticeships. It is also clear that apprenticeships continue to be heavily dominated by males (average of 9.5 to 1), while the male to female ratio is less pronounced in learnerships (average of 3.6 to 1) (Roodt 2012).

From a historical point of view, it is understandable that some pathway systems might be associated with certain races, genders and age groups. These trends indicate shifts towards transformation, although these are more evident in registration trends, rather than completion trends. It thus remains concerning that the propensity for success still appears to be prescribed by demographic and spatial factors (Roodt 2012). These indicate important dimensions for the evaluation of the effectiveness of changes to training and the nature of artisanal employment.

Conclusion

To summarise, in terms of demand for artisanal skills, initial findings suggest that demand in the sector since 2005 is characterised by a growth in the employment of qualified artisans, accompanied by an increasing trend towards less qualified individuals. This raised questions such as:

- How would an older group of employed artisans perceive the growing employment of young qualified African artisans? Will there be differences in either group's perception of what it means to be an artisan?
- Will this affect perceptions of status across industry sectors?
- If the sector, relative to other industries, is employing more under-qualified artisans how will this affect the qualified artisans in the sector? How will it affect their conceptualisation of their work identity and status?

Secondly in relation to the supply of artisanal skills, the study highlights that supply in the sector is characterised by the dominance of the apprenticeship pathway and that race, gender and location continue to prescribe the type of pathway individuals utilise to reach artisan status. This raised questions such as:

- Might it be appropriate to further interrogate the identities associated with artisanal training in different spatial and geographical areas? Why might certain individuals be drawn to certain artisanal pathways?
- How does this vary? How is this influenced by race, gender and age? What are the factors contributing to the persistence of such trends?
- How do these trends impact on the status associated with different education and training pathway systems?

Such empirically derived questions inform the next, qualitative stage in the study and it is anticipated that it will lead to a better understanding of the complexity of artisanal transition into the labour market.

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A competence analysis and competence creation tool to integrate employees in subsidized contracts

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Summary: To address the problem of the scarce reintegration of employees and the challenge of lifelong learning the Netherlands, the EU-country with the lowest unemployment rate, developed the reward-assessment method. Within an EU-funded project this method is analyzed and evaluated with regard to possibilities to transfer it to other EU-countries like Germany, Bulgaria, Greece, Italy, Hungary and Spain. The reward-assessment method allows to investigate an employee's job-related competences through a criterion-referenced questionnaire. The questionnaire is filled in by the responsible manager, the respective employee and a trained consultant. Based on this concrete tool, approaches for a more purposeful use of subsidized employment relationships are pointed out. The focus is on ways to an improved competency measurement and development as well as to a fast reintegration of unemployed.

Keywords: Reward-assessment method, lifelong learning, competence development, reintegration of unemployed

Initial situation and theoretical context

Against the background of increasing importance of lifelong learning in a complex and global work environment and the need to secure the employability of the unemployed, approaches to measure job-related competences within education or training and methods for informal learning become more and more important.

According to Eurostat (statistical office of the European Union) 24.87 million people have been unemployed in May 2012 in EU27, thereof 17.56 million in the Euro zone. A comparison of these numbers with the unemployment figures of May 2011 shows an increase of 1,952,000 for EU27 and 1,820,000 in the Euro zone. With 5.1%, the Netherlands show one of the lowest unemployment rates in Europe according to Eurostat 2012. Youth unemployment shows a similar pattern – with 9.2% the Netherlands have one of the lowest rates in the EU. Highest unemployment rates can be found in Spain (24.6%, youth 52.1%) and Greece (21.9%, youth 52.1%). Those countries show the highest growth in unemployment rates too, e.g. from 15.7% in March 2011 to 21.9% in March 2012 in Greece.

It is crucial to enable a fast return in labor condition for unemployed and to focus on underrepresented groups in order to downsize long-term unemployment and, closely associated, to reintegrate poorly educated and seniors (55+) into the labour market (see European Commission 2012). Given that social security systems in many EU-countries hit their financial limit, this task seems even more urgent (Giehle 2011).

A potential starting point to face these challenges could be “Activa Loonwaarde Methodiek” (short LWM, English: reward-assessment method). The main goal of this tool is to show ways out of long-term employment by analyzing and using the potential of the unemployed. Working with the LWM, trained consultants measure job-related competences of employees in the following areas: basis, personal and func-

tion-specific competence. The assessed data is then compared to necessary requirements concerning a specific position and workplace. The resulting level of fit between the employee's competences and the workplace requirements is the reward value.

Over the last few years different theoretical approaches dealt with diagnostic tools for job-related competence (Jude et al. 2008). Rauner (2008) for instance addresses competence measurement in the commercial and technical field. He defines job-related competence as "indicator for the degree of the achieved occupational abilities" (p. 81) and distinguishes it from qualification and general intelligence. Winther (2010) points out the meaning of general, as well as domain-specific knowledge and of learnable techniques. In this context she develops measurement tools for job-specific competences. In recent scientific examinations concerning competence development the role of developing and coaching staff is more and more assigned to managers (Kröll 2011). In addition education and training is increasingly becoming a target of criticism, because it does not reach the goals it promised to. Thereby the problem of learning transfer becomes focus of interest and one refers to the advantages of near-the-job learning. In this context, adequate practical tools for measuring professional competencies prove indispensable, since their results constitute the basis of workplace-based competency development activities.

Project's goals and method

Based on the problems mentioned above, the project presented in this paper aims to implement a method (the LWM) to improve the person-job fit through competence measurement and competence development in several EU-countries. Key topics are the increase of placement and employability of poorly educated individuals in the EU. Scopes for action are clarified through the analysis of labor market (e.g. employment legislation, subsidized contracts) with respect to needs and target group in selected European countries (Bulgaria, Germany, Greece, Italy, Spain and Hungary). In this context, the primary question is: *How can the EU countries learn from each other with regard to labor policy instruments?*

We intentionally dispense from simply implementing one EU-countries model to the other one-to-one. Instead we refer to the Dutch concept of LWM to develop country-specific approaches that build on the respective situation in the different European countries and their cultural and legal framework.

Target groups for LWM are (1) labor force, which are in need of support on the labor market (e.g. job-returnees, long-term unemployed and seniors), (2) potential employers that are willing to employ people who only partly possess the relevant competences and (3) job centers that receive regular feedback on the amount and duration of reward subsidy.

Reward-assessment method: Conceptual design and possibilities of implementation

In the context of LWM, competences are understood as contextual and task-specific, i.e. they are learned in a specific context and through specific activities/tasks. At the same time competences may be transferred into another context and a gradual modification caused by new learning processes is possible. Measurement of competencies within the framework of LWM is implemented with the help of a criterion-oriented questionnaire in form of a structured interview. By conducting the LWM, the STARR-method is used: S-situation, T-task, A-activity, R-result and R-reflection. To avoid socially desirable response patterns and get a preferably realistic competence as-

assessment, interviewees (employee and his/her manager) should describe concrete situations with multiple examples. In addition, one can elaborate in which context the competences mentioned were learned and used. Moreover interviewees shall describe concrete activities, so that consultants can assess their amount of involvement, independence and specific competences, e.g. against the background of customer demands.

Last but not least, the concerned persons (e.g. customer, colleagues) are asked to evaluate the result. Doing this, work quality, impression on others and realistic self-assessment is addressed. In case of any ambiguity concerning the assessment of competence dimensions, these are talked over in a joint discussion with the consultant.

Insurmountable differences are decided by the consultant. If the measurement detects that an employee for instance only possesses 40% of the relevant competences, the employer only pays 40% of the reward. In the Netherlands the residual 60% are paid by the local authority. Generally a minimum of two or more measurements are conducted. After the first measurement the consultant suggests concrete steps for competence development, e.g. training activities or work-related organizational actions. If, in a second measurement after ½ or 1 year, it is detected that the employee further developed his competences, the employer needs to pay a higher part of the reward and the local authority a lower one. The LWM concept is built upon three central principles: (1) dialogue between manager and employee, which is professionally supported through a consultant, (2) orientation towards strengths, not only weaknesses of the employees, (3) job-related alignment of individual competence development. Through the orientation towards strengths and potentials, one can overcome the sole search for applicant deficits and thereby the danger of stigmatizing people. LWM has been developed in collaboration of consulting companies and scientists at the Dutch University Groningen. To guarantee a continuous improvement the tool is regularly tested for evidence and validity by an independent research institute. In the Netherlands LWM has been successfully used about 4,000 times.

Moreover the need to use it in connection with subsidized contracts is currently governed by law in the Netherlands. While using LWM, Activa BV (a Dutch consulting company, which co-developed and uses LWM) could determine satisfaction for all participants by the following effects: (1) The use of LWM allows for a gradual integration into a normal working relationship and improves the employee's employability. (2) The concerned employees receive a comprehensive overview of their competences and are able to develop and expand them further. (3) The employer is given a realistic assessment of each employee's potential for the concrete job. (4) Local authorities and employers work together more closely and arrange things with each other more intensively. Based on the current state of innovation research, it should be considered that the initiation, transfer and implementation of the LWM must be designed as a process open for development. The process itself cannot be considered as fully predictable. To shape it intentionally it is necessary to identify and uncover the existing potential in the country on the one hand and to identify resistance that hinders or avoids implementation on the other hand. Based on the relevant country's potential and resistance analysis, appropriate and tailored solutions can be developed and implemented. To ensure the sustainability of project activities after project completion, the following actions are taken: (1) Agreements with companies are made with the aim that they are (further) willing to use the LWM; (2) it is attempted to build a consulting structure in the concerned EU countries.

Results & Discussion: Effects of the LWM use and outlook

By reflecting the usage of the LWM in other EU countries the following positive effects should be achieved: (1) systematic skill development of those involved, (2) improving the employability of employees, (3) rapid, efficient and effective reintegration into the labor market, (4) access to lifelong learning for educationally disadvantaged groups, and (5) maintenance and relief of social security systems. In the following the consequences for the different actors or groups (individual, business, society and the EU) are considered in detail. By using the LWM the interests of the public sector and the economy are combined (win-win situation). With the assignment of the LWM the allocation of public funds becomes more efficient and effective, and eases the identification of developmental opportunities for the concerned employers and employees. Cost units of wage subsidies are given the opportunity to individually customize wage subsidies and use them appropriately.

The possibilities to use public funds in a more targeted way for labor-policy tasks and to avoid wastage are improved. Additionally, a reduction of the duration of unemployment and shorter switching times, lower financial expenses to overcome unemployment and the associated discharge of social systems as well as lower public debt are expected. The pan-European labor market, with its increasing globalization and internationalization, can benefit from the introduction of an EU-wide competency assessment method by increasing the comparability and thus benefit from an improved permeability of the labor markets. Another aspect on the European level affects mobility of labor across national borders within Europe. A consistent, structured and validated measurement instrument can make the skills of a work force comparable across national boundaries.

It is obvious that a use of elements of the LWM concept can contribute to a development of appropriate mechanisms to uncover the labor market's needs concerning vocational and professional education. At the same time, further ways to revealing, developing respectively compensating and utilizing existing competency potentials and deficiencies with respect to workplace requirements are to be sought.

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CHAPTER V

MANAGING TRANSITIONS FROM VET INTO THE WORLD OF WORK

Does promoting permeability decrease social inequality in VET? Promises and pitfalls of a widespread idea

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Summary: The Swiss Federal Vocational Baccalaureate (FVB) was implemented to promote higher education related with the promise on decreasing social disparities. The presented results, based on secondary analyses of a Swiss longitudinal study show that the promise couldn't be kept. The achievement of an FVB depends highly of gender, socioeconomic background and aspirations and earlier school career characteristics. On this basis, the euphoric discussion on the compensatory effects of permeability should be founded on empirical research, rather than on policy promises.

Keywords: Permeability, higher education, social disparities

Introduction

In Switzerland, about 70% of the young people enter the vocational education and training system after compulsory school. Most of them graduate after three or four years of training and enter the labour market (c.f. figure 1). About 25% of the youth enter a general education track (Gymnasium) that leads to university entrance qualification. The early selection of children (after six years of primary school) in schools with different academic requirements produces social disparities. The correlation between highly selective systems (like Switzerland, Germany or Austria) and social inequality was shown amongst others by PISA results. Since two decades, educational policymakers are discussing how to respond on the social selectivity of educational systems. In this context, they often highlight the potential of promoting permeability not only but also in vocational education and training systems, with the goal of decreasing the effect of the social background on the educational success (e.g. Frommberger 2009). Plausible assumptions indicate this correlation, however, empirical evidence for this relationship is nearly inexistent (c.f. Bellenberg et al. 2004; Barabasch & Deitmer 2011). The aim of this paper is to analyze the potential of permeability between VET and Universities to ask whether the increase of permeability decreases the social selectivity or not.

Permeability in the Swiss VET system

In the scientific discourse mainly two facets of permeability are discussed (cf. Schlögel & Archan 2007): Horizontal and vertical forms of permeability. Whereas horizontal permeability focus on switching school types or training occupations within the same school level, in contrast vertical permeability refers to the possibility of switching educational paths between school levels. The major forms of vertical permeability from secondary to tertiary level in Switzerland are described in figure 1. The Federal Vocational Baccalaureate (FVB) is key for entering a University of Applied Sciences (UAS). The FVB can be achieved in two ways: parallel to the apprenticeship or after the VET Diploma in a one-year full time school. In Europe, permeability in VET is currently discussed with the focus on validation of non-formal or informal

learning for higher education studies (this is part of the discussion on national and European qualification frameworks). Current studies in VET show, that gender, family background and socioeconomic status are highly influential predictors for career decisions (e.g. Cedefop 2012). However, educational sociologists who are interested in questions on social inequality rarely look at the VET system and VET researchers are – vice versa – rarely interested in questions on social inequality. This may be a reason, why empirical studies lack issues of permeability and social inequality in VET.

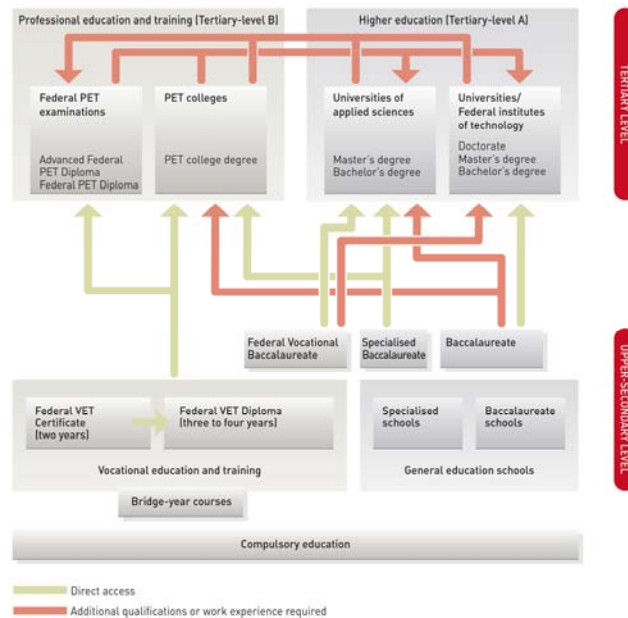


Figure 8: Upper Secondary and Tertiary Level in Switzerland with possible paths (OPET, 2012, p 5)

Research question, data and methods

The transition from VET to a University of Applied Sciences is only possible with an additional certificate (c.f. figure 1), the Federal Vocational Baccalaureate. Therefore, the FVB can be seen as the ticket for the whole university sector.

Research question

With respect to the structure of the Swiss education system and the state of research I aimed to answer two questions: How can the achievement of a FVB be predicted, as a first step to realize a permeable path, and second, how can the entry on a UAS after the achievement of an FVB be predicted? In these two questions I am particularly interested in effects of gender, socioeconomic status, educational aspirations, reading skills and the secondary I school type.

Data and methods

To answer the questions we take in to account two different types of datasets. With highly aggregated Data from the Federal Office of Statistics, we get deeper insights on regional differences and gender composition of FVB graduates and UAS Students. On the basis of the micro data of the Swiss longitudinal study TREE¹ (Transitions from Education to Employment, 2000-2010), which is a (annual) follow-up of the Swiss PISA 2000 sample, with a broad variety of records on relevant items (educa-

¹ The Swiss youth panel study TREE (Transitions from Education to Employment (www.tree.unibas.ch) runs since 2000 and has since been funded by the Swiss National Science Foundation, the University of Basel, the Swiss Federal Office of Statistics, the Federal Office of Professional Education and Technology, and the cantons of Berne, Geneva and Ticino

tional certificates, aspirations, PISA reading literacy etc.) it is possible to model effects on individual educational outcomes with a prospective dataset. For the federal data, we report simple descriptive statistics on the composition of students in FVB tracks and UAS. For the TREE-Panel data, we performed logistic regression models using SPSS, to model influences (gender, SES, educational aspirations, reading skills and the secondary I school type etc.) on the career decisions of young people (following Breen & Jonnson 2000).

Results

The official data show, that around 13% of the apprentices achieved a Federal Vocational Baccalaureate parallel to their training whereas another 8 % did their FVB after the training. In 2010 in total 12'250 FVB were granted, 46% women, but there are regional differences in the share of women attending an FVB (canton of Zug 25%, canton of Neuchâtel 50%) (FOS 2012).¹ However, only 50% of the graduates entered a university of applied sciences (UAS) two years after graduation. That means only 50% of the people benefit from the permeability. Also the transition to a University of Applied Sciences is influenced by gender, 65% of the male FVB graduates entered a UAS, but only 40% of the female FVB graduates (FOS 2012).

Table 1: Logistic regressions: Model 1: Achievement of a Federal Vocational Baccalaureate; Model 2: Entry in a University of Applied Sciences

Independent Variables	Model 1 (N=2408)		Model 2 (N=611)	
	Odds Ratio	sign.	Odds Ratio	sign.
Gender (1=male)	1.407	.001	2.832	.000
<i>HISEI – Socioeconomic Status</i>				
<i>Ref. Lowest Quartile</i>				
HISEI 2 nd Quartile	1.499	.015	1.004	.989
HISEI 3 rd Quartile	1.714	.001	1.208	.556
HISEI Highest Quartile	2.131	.000	1.759	.069
PISA Reading Level	1.640	.000	1.358	.004
Grade Retention (1=Yes)	0.611	.000	0.870	.568
-2 Log likelihood	2499.298		748.708	
χ^2 / df	450.384 / 14		71.227 / 15	
Cox&Snell R ²	.170		.111	
Nagelkerke R ²	.242		.150	

Note. Data: Swiss TREE Panel, own calculations, pooled coefficients after Multiple Imputation (using MCMC with SPSS 20) due to missing values. Model 1 is controlled for: Language spoken at home; Socioeconomic aspirations, Sec I School track and language Region, Model 2 is controlled for same variables as model 1 and FVB-Track (parallel to training or after graduation).

The data of the TREE-Panel show, that 2408 persons finished their training successfully and 611 of them did an FVB (approx. 25%). 242 (40%) enrolled their studies on a UAS. The logistic regression predicting the achievement of an FVB is presented in Table 1. Like previous studies on educational paths (cf. Breen & Jonsson 2000; Cedefop 2012), the results of model 1 shows that not only the socioeconomic background and but also gender and earlier school career characteristics (grade retention) are highly predictive for the achievement of educational certificates. For example, people of the highest quartile of socioeconomic background are two times more likely (Odds Ratio=2.131) to achieve an FVB under control of all other variables in the model, including academic performance. In short, all effects are conforming to the

¹ There is neither information about migration background nor about the socioeconomic background of this people available.

expectations. With regard to the model 1, the hypothesis, that the “permeable path” to higher education reduces social disparities in VET, must be rejected.

In model 2 (Table 1) a logistic regression was performed to figure out the influence of the same predictors for the entry in a UAS. This analysis was calculated with a sub sample of the model 1 group – only persons who did their FVB were included. We see, that only the gender and the academic achievement (PISA reading level) are relevant predictors in this model. This result implicates, that the other predictors could also have an effect in model 2, but only in an indirect way, mediated by the FVB. Further analysis should test the mediating effect of the FVB performing path analysis.

Discussion

Permeability and social inequality are both widely discussed in VET-research, however, the combination of the two topics are still disregarded in empirical research. Educational policymakers in the german speaking part of Europe are discussing the potential of permeable education systems, to decrease the influence of the socioeconomic background on educational attainment. With the implementation of the Swiss Federal Vocational Baccalaureate a “permeable path” from VET to Universities was established. The two major arguments for the FVB were: first, to increase the number of students on tertiary level A institutions and second, to decrease the social selectivity of the system. The presented analyses show that the promise of a decrease of the social disparities couldn't be kept. Various different aspects of the socioeconomic origin of young people are still influencing educational choices, also in the VET sector. We presume that the reported effects of Model 2 are the result of the FVB as a mediator. That means, that a large share of the social disparities is the product of the first educational choice (attending an FVB or not). The presented results have some limitations. First, highly stratified educational systems are different in many facets from other systems – the difference in social disparities is one indicator. Second, the selected measurement of permeability (attending a certificate) is just one possible operationalization. Analyses with other aspects of permeability may be related with other person characteristics. Third, the used PISA-TREE panel is representative for Switzerland but the presented results, based on selected sub samples, can hardly be generalized. On the basis of the presented results, I harbor some doubts about the compensatory effect of permeability. The euphoric discussion on the potential of permeability to reduce social disparities has to be based on empirical foundations. Therefore VET researchers should critically discuss the current policy promises.

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Why apprentices quit: A German Case Study

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Summary: In Germany, still more than 20% of all training contracts between apprentices and companies offering in-company training terminate at an early stage or later during the course of apprenticeship. These consistently high cancellation rates very often go with serious financial damage for companies involved and also affect the economy as a whole. Some training places remain vacant for the rest of a training year, other are never offered again. On the other hand young learners/apprentices lose precious time while pursuing a “wrong” career. Frustration and demoralisation of apprentices are the consequence. In 2011, IBB was asked to carry out a regional study on reasons of early termination of training contracts in the region of Leipzig and northern Saxony. This paper gives insights to the major backgrounds for such contract terminations and derives some recommendations for measures to prevent such drop-outs in future and that help to create more successful school-to-apprenticeship transitions.

Keywords: School-to-work transitions, early termination of training contracts, drop-outs

Introduction

In 2010, drop-out rates in apprenticeship have reached 25.7% in Saxony, which was about 2.7% above the German average. In cooperation with I:BB, University of Bremen, the Regional Council Leipzig and Northern Saxony have initiated a project to examine the reasons for drop-outs in apprenticeships (early termination/cancellation of training contracts). This study was carried out within the frame of regional transition management initiatives of the county of Northern Saxony, namely “Regional Transition Management Northern Saxony” and “Lernen vor Ort” (learning on-the-spot)¹. I:BB had shown in an earlier regional study (Piening, Hauschildt, Rauner 2010) in the region of Osnabruck, that drop-outs show a very heterogeneous picture, which has to be examined in order to derive concrete measures towards better school-to-work transitions.

In order to help both companies and apprentices to avoid drop-outs of training contracts in future, the focus of this study has been put on the reasons which had led to a decision to quit. Especially with regard to the current trend of a declining demand for technical and vocational education and training due to declining numbers of school leavers, notably of secondary schools, it will be of great importance to reduce the early drop-out figure in apprenticeships, as this must be recognised as an enormous malinvestment.

¹ Further co-operation partners of this project were the Chamber of Commerce and the Chamber of Crafts in Leipzig as well as the Saxony Office for Environment, Agriculture and Geology (LfULG).

Methodology

This study is based on a survey in 2011 addressing 722 companies and 1077 apprentices in the region of Leipzig and northern Saxony. Both contract parties were interrogated independently from each other and were asked to fill in two different interrelated questionnaires. This approach made it possible to analyse the backgrounds of training contract cancellations considering the estimations of each party concerned.

The questionnaire handed out to training providing companies was subdivided into three major blocks:

- A. General information about the occupation trained, school leaving certificate of the candidate, initiating party and time of contract termination.
- B. Information regarding the application process and selection procedure, reasons for contract termination (early signs and decisive factors for a cancellation), measures subsequently taken to avoid such contract terminations in future/lessons learned, etc.
- C. Data about the apprenticing company, company size and branch, number of apprentices trained, etc.

The questionnaire for apprentices also contained three major blocks:

- A. General data, among others about the occupation trained, branch and size of the training company, school leaving certificate, previous work/apprenticeship experiences, motivation to decide for an occupation concerned, application and selection procedure, factors determining the decision to sign a training contract with the apprenticing company in a given occupation.
- B. Information about personal and social backgrounds, like gender, language spoken in the family (migration background), (vocational) education of parents, etc..
- C. Reasons for contract cancellation, divided into reasons
 - relating to the vocation
 - related to the training providing company
 - referring to the vocational school and
 - other personal reasons.

This section also treated the apprentice's lessons learned from the experiences made and asked about the current situation of the learner (new apprenticeship, out of work, other careers).

Among all companies and apprentices contacted 305 companies and 254 apprentices sent back their questionnaires, which equals a response rate of 42.3% for companies and 23.7% for apprentices. The analysis of the questionnaires was as well accompanied by selected telephone interviews of company representatives.

Results

Most of the contracts (around two thirds) had been terminated at a very early stage, either during a probation period or during the first year of training. This finding relates to all branches and occupations. Only in very few occupations, i.e. hair dresser or cook, apprentices tend to decide breaking up the training contract at a later or very late stage (third year of training).

Furthermore, it is very often the apprentice' initiative to terminate the training contract. In the majority of all cases (around 50%), this is an apprentice's decision. 30%

of the training contracts terminate upon the company's initiative. In all other cases, company and apprentice came to a mutual agreement.

In many cases, companies do not experience an apprenticeship contract cancellation for the first time. On average, each training company had been confronted with at least four early terminated training contracts during the past five years. In some branches, this figure is even much higher (i.e. gastronomy).

Regarding the major reasons for an early terminated training contract, the estimations of apprentices and companies often do not correspond to each other (see fig. 1). Companies relate main reasons for failures to the apprentices: reluctance of motivation and commitment, false prior estimations about the occupation or private problems.

On the other hand, apprentices see - above all - company related reasons that led to an early end of the training contract. These reasons are: conflicts with training officers, principals and foremen, an insufficient training quality, unfavorable working or training conditions and sometimes as well being under-challenged.

Branch	Number of companies	Main reason for early contract termination (employers' view)				Number of apprentices	Main reason for early contract termination (view of apprentices)			
		violations of the factory regulations	The apprentice was unsuitable for the vocation	The apprentice was not interested	Overburdening		Unpaid overtime	Insufficient instruction of formation contents	Conflicts with trainers or foremen	company and apprentice did not suit to e. o.
Wood working and construction businesses	27	2,93 (1,80)	1,85 (0,95)	3,22 (1,55)	2,26 (1,40)	9	3,56 (1,74)	2,67 (1,80)	3,22 (1,79)	3,22 (1,48)
Electro-, and metal trades	34	2,04 (1,58)	2,58 (1,59)	2,68 (1,54)	2,55 (1,68)	17	2,20 (1,57)	2,71 (1,65)	2,41 (1,58)	2,82 (1,91)
Motor and vehicle repair trade	11	2,30 (1,77)	1,90 (0,88)	2,45 (1,29)	2,30 (1,49)	13	2,25 (1,87)	1,92 (1,24)	1,50 (1,17)	1,91 (1,38)
Food industry	8	2,14 (1,95)	2,63 (2,00)	2,83 (1,47)	2,63 (2,00)	8	3,75 (1,17)	2,63 (0,74)	3,75 (1,17)	3,87 (1,55)
Health care and cleaning businesses	13	1,62 (1,50)	2,15 (1,07)	2,46 (1,26)	1,77 (0,93)	13	1,64 (1,21)	2,25 (1,36)	2,64 (1,43)	2,83 (1,59)
Personal care business	24	3,64 (1,76)	2,41 (1,14)	3,35 (1,82)	2,61 (1,75)	14	1,62 (1,26)	2,92 (1,89)	3,00 (1,80)	2,92 (1,80)
Other businesses	11	2,18 (1,72)	3,60 (1,35)	2,50 (1,65)	3,10 (1,45)	11	1,73 (1,35)	2,55 (1,70)	2,73 (1,56)	3,27 (1,68)

Fig. 1: Major reason for early contract terminations in crafts. All figures are mean values; those in brackets show the corresponding standard deviations.

The question as to whether an early contract termination could have been avoided is as well answered differently by companies and apprentices. While company representatives have argued, that a contract with the apprentice concerned had inevitably to come to an end and that nothing could have been done to prevent it, apprentices see more room for conflict management, mediation and other means to solve problems between training provider and apprentice.

An encouraging result of the survey is that two thirds of the apprentices that had experienced a contract cancellation of a first (or second) training contract still pursue a vocational career, study or follow further educational pathways. This means that a contract termination does not necessarily mean a definite drop-out. As shown in fig. 2, a large majority of former drop-outs decide to stay "in the apprenticeship system", but change the training company (more than 50%). Every fourth contract termination can as well be considered as a "real" drop-out, i.e. those were apprentices who re-

mained out of work (19.4%) or worked in another company without finishing their apprenticeship (7.9%).

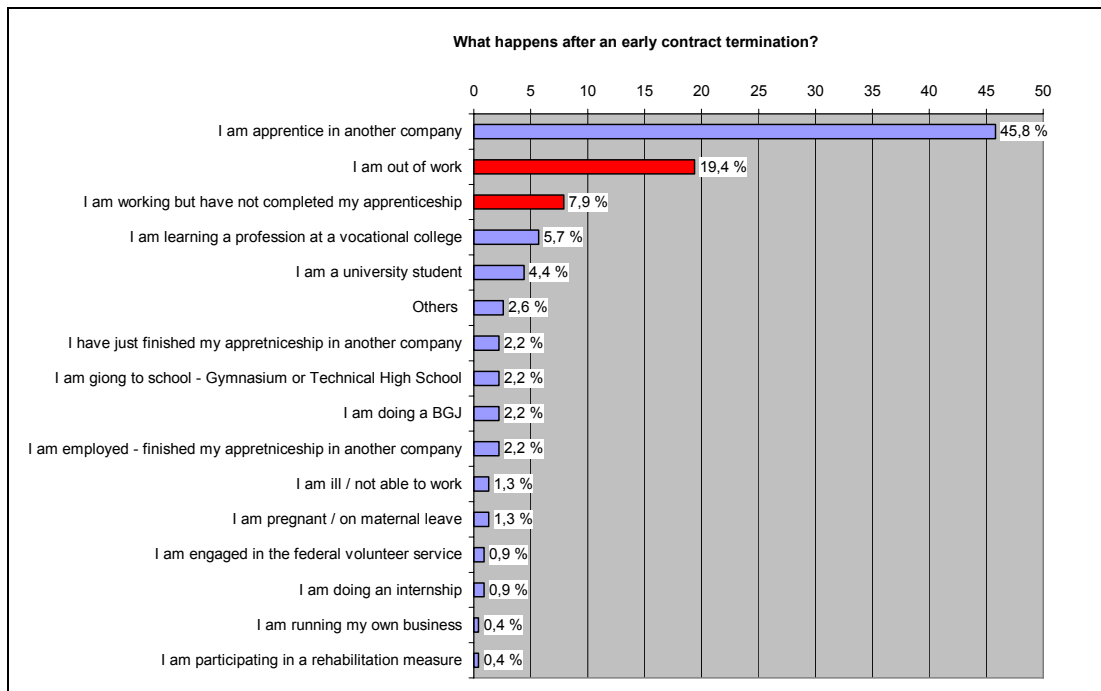


Fig. 2: “drop-outs” and their perspectives

Nevertheless, the study suggests that in many cases drop-outs could have been avoided, if the both parties have been early aware of the upcoming problems and have found ways to discuss them. Especially at the companies, culture and strategies of conflict mediation are still underdeveloped.

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Successful educational outcomes after early apprenticeship contract terminations: The effect of learning experiences

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Summary: Learning experiences at vocational school and at the workplace influence educational outcomes in many different ways. Based on a sample of 902 apprentices, whose apprenticeship contract was terminated early, it was tested whether learning experiences acquired before the termination influence subsequent educational outcomes. Results showed that learning experiences at vocational school predict educational outcomes after the early contract termination significantly. The better young people rated their opportunities for learning and the quality of teaching at the former vocational school, the more likely were they to have completed VET or to be enrolled in a VET program thirty months later. Positive learning experiences at the workplace had no effect on later educational outcome.

Keywords: Early termination of apprenticeship contract, learning experiences, educational outcome

Introduction

Previous research in the field of apprenticeship training has shown that learning experiences of apprentices influence educational outcomes in many ways. Positive learning experiences, such as ample learning possibilities, interesting tasks, or supportive teachers and trainers, are linked to higher educational satisfaction, occupational commitment and job-related competencies, as well as to lower risks for educational dropout (Cart & Trellcat, 2010; Karmel & Mlotkowski, 2010; Onstenk & Blokhuis, 2007; Rauner, 2009; Stalder, 2012; Vazsonyi & Snider, 2008).

Apprentices whose apprenticeship contract is terminated early (i.e., before they achieve their VET-degree) are in general less satisfied with their apprenticeship, assess their opportunities for learning less positively and the pedagogical competences of their trainers and teachers more negatively than apprentices with a linear educational pathway (Stalder & Schmid, 2006; 2012).

Arguing that an early contract termination can be seen as opportunity for change, Schmid und Stalder (2012) showed that up to one half of the apprentices had re-entered an upper secondary education or training programme within the first three months after the termination. Two years after the termination, about three-quarters had re-started such a programme, mainly staying in apprenticeship training. They had changed to an apprenticeship with higher or lower intellectual requirements, continued their training in the same occupation, but another company, or restarted VET from anew in a different occupational field.

Factors influencing the chance for re-entry and successful completion of the new education and training programme after the early termination included the educational and work activities of the (former) apprentices shortly after the contract termination, reasons for the termination, or social support received in finding a new training place (Schmid, 2010). It was, for instance, shown that the chance to obtain an upper secondary (VET-)diploma at a later stage was considerably higher for those

apprentices who had re-entered education and training immediately after the early termination.

This paper aims to add to the existing findings by taking into account the learning experiences made in the previous apprenticeship. The main research question asked is: In what way do learning experiences at the workplace and at vocational school contribute to successful later educational outcomes?

Methodology

The research question was tested based on the four-wave longitudinal study LEVA with 1321 apprentices (42% female, 58% male), who had experienced an early termination of their apprenticeship contract in the Swiss Canton of Bern (Schmid, 2010; Stalder & Schmid, 2006). The first wave was carried out shortly after the early contract termination in 2004, the following waves in 2005 (wave 2), 2007 (wave 3) and 2012 (wave 4). The present analysis uses data from waves 1 and 3 of 902 apprentices.

Data collected in wave 1 included socio-demographic variables, learning experiences at the workplace and at vocational school before the contract termination, reasons for the early contract termination, and educational and work activities in the first month after the termination. In wave 3, educational outcomes were measured.

Learning experiences at the workplace were measured using a scale with eight items. The scale assessed opportunities for learning before the contract termination (e.g., "At work, I could learn a lot of new things") as well as the quality of training (e.g., "My apprenticeship trainer was good at explaining things") on a 5-point scale (1: very negative to 5: very positive). Cronbach's alpha was $\alpha = .88$.

Learning experiences at vocational school were measured similarly by using five items, which assessed opportunities for learning before the contract termination ("e.g., At school, I could learn a lot of new things") and the quality of teaching ("e.g., "My main teacher was good at explaining things") on a 5-point scale (1: very negative to 5: very positive). Cronbach's alpha was $\alpha = .84$.

Educational and work activities in the first month after the early contract termination included a range of different situations. For the purpose of this analysis, educational and work activities were grouped in a) VET programme, b) bridging course, c) employment without training contract, and d) NEET (not in education, employment or training).

Successful educational outcome was defined as having completed VET and obtained a VET-diploma or still being in VET thirty months after the early contract termination. Young people with unsuccessful outcomes did not have such a diploma and were not in upper secondary education or training at that time.

Logistic regression analysis was used to test whether educational and work activities and learning experiences predicted educational outcomes thirty months after the termination. Socio-demographic variables (gender, migration background) and reasons for the early contract termination (insufficient achievement at vocational school; personal reasons for drop-out) were included as control variables.

Results

Descriptives

Educational and work activities after the early contract termination varied considerably among the (former) apprentices. One month after the contract termination, 428 persons (48%) had already re-entered VET. Most of them had changed to an apprenticeship with higher or lower intellectual requirements or had continued their training in the same occupation, but another company. 78 (9%) former apprentices were enrolled in a bridging course, 139 (15%) were in employment without training contract, and 257 (29%) were NEET.

Learning experiences before the apprenticeship contract termination ranged from very poor (1) to very positive (5) for both learning sites, with mean ratings of 3.3 (SD=.93) for learning at the workplace and 3.8 (SD=.84) for learning at vocational school. Young people, who had entered bridging courses after the contract termination and those being NEET rated learning experiences at the former workplace most negatively. The latter were also those, who reported the most negative learning experiences with regard to vocational school.

Educational outcomes thirty months later

Thirty months after the early contract termination, 695 (77%) persons had successfully completed VET and obtained a diploma or were still enrolled in a VET-programme; 207 (23%) had not obtained a diploma and were not in enrolled in any kind of upper secondary programme.

Table1: Predictors of successful educational outcome thirty months after contract termination

	B	S.E.	expB	p
<i>Constant</i>	3.420	.682	30.571	***
<i>Control variables</i>				
Gender: male	-.001	.192	.999	
Migration background: yes	-.719	.281	.487	*
Personal reasons for termination: yes	-.913	.229	.401	***
Insufficient VET school achievement as reason for termination: yes	-.358	.195	.699	
<i>Educational and work activities in first month after termination [VET-programme]</i>				
Bridging course	-2.247	.390	.106	***
Employment without training contract	-3.346	.324	.035	***
NEET	-2.805	.303	.060	***
<i>Learning experience before contract termination</i>				
At vocational school	.233	.110	1.262	*
At workplace	-.181	.112	.834	

Nagelkerke $R^2=.38$; *: $p<.05$, **: $p<.01$, ***: $p<.001$

Results of a logistic regression analysis showed that educational and work activities one month after the contract termination as well as learning experiences had an effect on later educational outcomes (Table 1). First, supporting previous research,

successful educational outcomes were most likely for those, who had re-entered VET shortly after the early apprenticeship contract termination. Apprentices, who had entered a bridging course, who had been employed without training contract or had been NEET in the first month after the contract termination were less likely to have obtained a VET-diploma or to be in a VET-programme thirty months later. Interestingly, NEETs did have more successful educational outcomes than young people, who were employed without an apprenticeship contract. Second, positive learning experiences at school predicted successful educational outcomes above and beyond educational and work activities in the first month after the termination. The better young people rated their learning and teaching at the former vocational school, the more likely were they to have completed VET or to be enrolled in a VET programme thirty months later. In contrast, learning experiences at the former workplace did not predict educational outcomes thirty months later.

Conclusion

The findings suggest that experiences at vocational school play a specific role in the situation of early apprenticeship contract terminations. Positive learning experiences at school seem to encourage young people to re-enter education even if they had not succeeded in their first apprenticeship. This seems not to be the case for positive learning experiences at the workplace. One explanation could be that positive work experiences lead to different outcomes – while certain young people would be encouraged to continue with VET, others would prefer to work without training contract. Further research is needed to investigate this assumption.

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The application of COMET model in automobile maintenance technician personnel training

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Summary: This paper taking automobile maintenance technician personnel training (AMTPT) as an example is to apply COMET Model for organizing classroom teaching and evaluation. It is supposed to develop the curriculum of integration between learning and work by typical working-tasks of automobile maintenance technician, which is to optimize the technical ways of AMTPT.

Keywords: COMET Model, automobile maintenance, technician personnel training (AMTPT)

Introduction

The Chinese upgrading of industrial structure and economy transformation needs plenty of highly skilled employees including highly skilled automobile maintenance personnel. There are two approaches to train automobile maintenance technicians: Social culture and technical institute culture. However, the students from technical institutes will face the problems whether or not they transit successfully to the real workplace, whether or not they meet the real work practice.

Labor market always requests the employee who has not only basic knowledge and skill but also the comprehensive vocational competence such as taking responsibility, quick-learning, solving problem, innovation, team-spirit and communication etc. However, many technology-enhanced learning approaches tend to separate learning activities from the everyday work. Rather than bring useful resources for situated user needs.

Based on Guangzhou Communications Technician Institute (GCTI) which has trained the most automobile technicians in Guangzhou, this working paper presents a case study on how to apply KOMET Model to design course, develop students' learning and evaluation. Thereby, technology-enhanced learning can transit successfully to the real workplace.

Methodology

It is a teaching example on how to apply the COMET Model in Automobile Maintenance Technician Personnel Training (AMTPT) in Guangzhou Communications Technician Institute (GCTI).

1. Analysis of Automobile Vocational competence

There are 5 rates of automobile maintenance jobs: primary, median, advanced, technician, senior technician. The technician institute in China provides training for the first four rates. Figure 1 shows the automobile maintenance vocational competence. As is showed in Figure 1, If the students want to reach the various standards of automobile technicians, he or she should have certain kinds of comprehensive vocational competence. It can be summarized below: The first one is called functional competence. The technicians should be familiar with all kinds of workplace rules and regulations. They know how to get information, how to maintain and service, and how to

find ways to remove difficult problems. The second one is called processing abilities. The technicians should know how to do teamwork in order to make greater profit for the workplace. They can organize and manage the vehicle maintenance process.

Figure 1: Vocational competence for Automobile Maintenance Jobs

Rating Types	Primary	Median	Advanced	Technician
Maintenance & service	Maintenance & service	Regular maintenance & service	Special-purpose maintenance & service	Extraordinary maintenance & service
Repairing	Components replacement	Assembly repairing	Assembly overhaul	Systems overhaul
Problem		Regular vehicle diagnosis & removal	Complex vehicle diagnosis & removal	Complicated, serious vehicle diagnosis & removal
Technology			Technology guidance & situated management	Technology guidance & organization management
Expansion				Training & technology research

They can provide quality control and improve the efficiency. The third one is called design abilities. The technicians should obey the environment-friendly rules when they are working. They sometimes should be creative and have self-developing ability. In a word, the technicians are the specials who can solve problems and unknown tasks. All these vocational competence are coincident with the requirements of KOMET model. Therefore, the Model is practical and useful.

2. Curriculum development

We held a meeting with some experts in vehicle repairing. We reached an agreement in the requirements of Automobile Maintenance Technician and typical work tasks. They are listed below:

Vehicle maintenance ability (can solve the difficult problems in vehicle maintenance, can organize and manage the vehicle maintenance process, deal with the key problems during maintenance); vehicle diagnosis ability(can diagnosis and remove the difficult problems with the help of equipments and machines); Training guidance ability (can train the primary, median, senior mechanicals); Organization management ability(can do the organization management, process maintenance management and cost management, can write analysis and qualification about quality control, technology summary and essays).

Creative ability (can use new technology, new process, new equipment; can research technical innovations; the ability of information technology application (look up information, write report and making training PowerPoint).

At last, according to learning and knowledge building at the workplace, we developed the curriculum of integration between learning and work, which is suitable for the school conditions.

3. Teaching design

Here is a case study performed in Automobile Engine Diagnosis and Problems Removal by integration between learning and work.

The teachers design two tasks according to the learning content.

Task 1: A car with a mileage of less than 3,000 kilometers. It has difficulty in having a cold start(its hot start is normal). It takes several times to start the car. Please design a best solution to solve the problem.

Task 2: A car with a mileage of 60,000 kilometers. It has ordinary maintenance but it is difficult to both have a hot and cold start. What's more, it needs to start the engine several times. Please design a best solution to solve the problem.

4. Learning steps:

Teaching background:

22 students from grade 2, majoring in automobile maintenance. They have got a Automobile Maintenance Senior qualification certificate.

2 teachers, with 5 years working experience in automobile enterprise. They are senior technicians. The learning equipment includes internet, computer, maintenance materials, two cars, some examine and maintenance equipments, common tools etc.

Teaching progress:

Two teachers divided the class into 2 groups. Each group has a leader teacher. The teachers guide the students to finish the following tasks in turns.

At first, the teachers explain the tasks in detail. They set the problem in the cars and help students learn the knowledge and skills which are related to the tasks. 2 students form a team to draft a maintenance plan. Before they settle the plan, they need to finish the steps, such as customer inquiry, examining and analysis, collecting information, discussing, etc. They also need to answer the customer's questions. The teachers checked the plan, modify it. After making some modification, the students get ready to put it into effect (that is, removing engine problems). When the students finish the whole maintenance process, the teachers will give them evaluation. The students discuss again and make further modification to prior plan until it is perfect.

5. Teaching evaluation

It is the third person who gives evaluation. The teaching management staff put forward certain open questions, which are built at workplace that can develop profession ability. The scores are made up with three parts: drafting and competing the plan (40%), carrying out the plan(40%), learning and working period (20%).

The first part is drafting and competing the plan, which is built at a real workplace technicians. It is carried out by the KOMET Model. The second part is aimed to see how students put their plan into actual working place. The third part consists of learning attitude and professional ethics.

Results

There are 11 students hired by Porsche (China) Motors Ltd. as Outstanding Apprentices, in which 8 students received the case study about the KOMET Model training. Figure 2 shows a student's vocational competence He won a bronze technician in the test of Porsche (China) Motors Ltd.

It is concluded by the Figure 2 analysis that firstly, the students can not only make the maintenance plan but also take the requirements of individuals, enterprise and society into consideration. This kind of new vision can practice students abilities in solving problems and improving comprehensive vocational competence. Secondly,

the evaluation is added during the period of learning process, which making up the fault of Large-Scale-Diagnostic KOMET Model. Thirdly, the students can accumulate workplace experience and make it possible to explain and reflect their workplace experience. The learning interest and motivation are significantly enhanced. The abilities of solving problems independently and self-development are greatly improved, which laid the foundation from school learning activities to the real workplace.

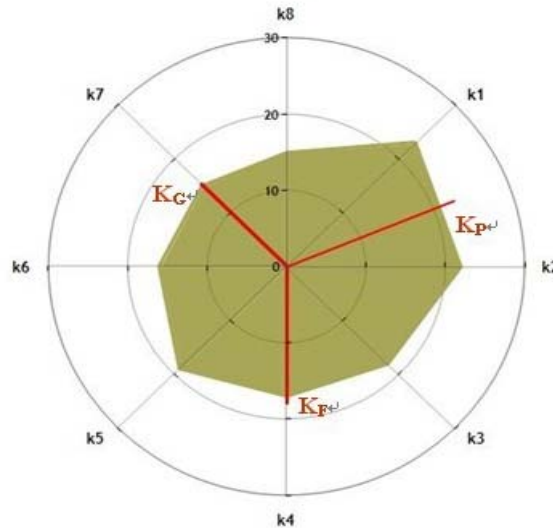


Figure 2: A student's vocational competence

In previous work, we have demonstrated how to apply KOMET Model to improve students vocational competence. However, there are a lot of problems remained to solve in applying KOMET model. Such as how to help students to build their profession ethics, how to help student to develop their Professional self-identity and how to help students to built their personal career planning. All above problems need to be researched further and be solved in the real workplace.

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The transition from school world to authentic work world: A model of integrating work into learning in Chinese TVET colleges

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Summary: Blended work-based practice and school-oriented learning is an effective learning way in TVET. Many vocational colleges in China are exploring how school education could approach authentic work. The paper intends to explain these activities and develops a multi-dimension model to cover all kinds of possible exploration. In this research, researcher chooses different colleges' cases and interviews staff to justify the model.

Keywords: School education to authentic work; integrate work into learning; school- enterprise cooperation model

Introduction

Learning at the workplace is a crucial factor to enhance students' occupational competency and make them success. Blending work-based practice and school-oriented learning has been justified as an effective learning way in vocational education. Almost all kinds of Chinese TVET colleges are keen to integrate authentic work into their classroom. But what are effective, and how to explain these blended learning activities have incurred huge debates in China.

Through analysing hundreds of research reports and documents from place, time, learning content and mechanism dimensions, the researcher intend to develop a multi-dimension model to explain these phenomena. This model covers almost all kind of blended learning activities and each vocational institute can find its position and question space in the multi-dimension model.

Research question

- At this moment how Chinese vocational colleges integrate authentic work into teaching and learning in cooperating with enterprise?
- In what extent do teaching and learning activities in vocational colleges approach authentic work?

Methodology

Meta-analysis of research and documents

This research is based on hermeneutics and discourse analysis of research and documents. The researcher read careful hundreds of gathered material and analyzes relevant publications in recent ten years that have close relationship with the research topics.

Semi-structured and in-depth interviews and case study

Qualitative semi-structure interview and case study methods are also applied in this research. Researchers choose 8 vocational colleges as cases and interviews 9 man-

agers and academic-related staff. These cases and interviews results support the meta-analysis research and the multi-dimension model.

Findings

Learning place dimension

Through literature analysing and interviews, the author finds out 6 dimension learning place where school can cooperate with enterprises. The abscissa is vocational college and the ordinate is enterprise.

Through survey of few vocational colleges in the rural area, researcher finds that students spend most time in theory classroom and little time in skills training rooms, and they have no chance to get in touch with authentic work. But in some developed area, such as Guangdong Industrial Training Center, student are arranged to practice their skill in Single-Function Training Room. The occupational activities can be divided into different working tasks, and each task can be done in certain training room.

Multi-Function Training Building is another kind of practice and training place, which is designed for a programme, and students can finish most working task in the practice training room. This case happens in Nanjing Vocational College.

Some college develops 'Learning Hub' for comprehensive training and practice of students. In Guangzhou Traffic and Transportation Vocational college case, this college designs a comprehensive training hub for "inspection and maintenance of electronically controlled ignition system". The learning hub includes lecture and discussion area, operation area, information query area, tool storage area, engine bench and parts area and vehicle area. Students can engage all related training programme here.

In different kinds of training place, the most popular model is "Productive Teaching Factory". In Tai Zhou Vocational & Technical College case, they set up their own "Solid Preparation Workshop for Pharmaceutical" plant, or the other way round, enterprises move their workshops into the schools. Teachers and students use these equipment to engage real production activity. The production process was imbedded into teaching and learning process. After they finish, the production will be sold to market. This model is not only convenient for students, but help schools controlling the whole training process.

Another popular model is training workshop within enterprises. In the Zhejiang Great Dragon Automation Equipment Co.Ltd case, the enterprise sets up a separate training workshop for students with multi-functions of teaching, training and practice and full-time management and instructors from the businesses. The enterprises play a dominant role in this model.

The final training and practice avenue is enterprise. In the Hunan Vocational College of Modern Logistics case, students are sent to S.F. Express (Group) Co., Ltd. and engage same work with enterprise' colleges for three months. What they do is just what they need to learn.

From theory classroom to authentic working position, students' learning place is transferring knowledge to skill and competency. Avenue changes bring huge different in learning content and method, this paper will discuss about it further.

Learning time dimension

In learning time dimension, the author survey different learning time allocation model of in China TVE colleges. Since almost all students need to learn 3 years before they graduate, then how to allocate learning time in school and enterprise is a crucial question to blend work-based learning and school-based learning. There are

not compulsory requirement from Ministry of Education. Traditional, most colleges require students learning on campus for two years and send them to enterprise in the final year. But this situation is changing. More and more colleges are involving flexible-term programme.

Learning content dimension

In this research, researcher finds most colleges intend to approach authentic work in learning content in different extent.

Traditionally, most colleges divide their course into three types: basic course, specialized basic course and specialized course. This model is borrowed from conventional higher education. But in recently years, course reforming is a highlighted point in China vocational education. Many vocational colleges launch a serial course content reform and try to get rid of traditional academic course framework and approach authentic work world.

Some colleges even import full enterprise training content as school courses. In the interviews, some academic staff told author, "Enterprises' training content is from authentic work and for their work. Students can learn what they will do in enterprise position after they graduate. But we should be very careful. Most enterprises seldom think of staff professional development and career plan. What student learn can fit one enterprise, but when then transfer to another, they can't fit new requirement."

At this moment, the most popular course model is "Working-Process-Oriented Course". This model study sector and industry and survey enterprise firstly. Then a comprehensive work analysis method of EXWOWO was used to determine professional tasks. The total learning contents are from work and working fields.

Cooperative mechanism aspect

At this moment, China has not established an operational system and long-term mechanism of school-enterprise cooperation. There are variously cooperative models in different vocational colleges. In cooperation between colleges and enterprises, the main stakeholders are colleges and enterprises, but we can see that government and trade association are involved in the projects in most cases.

The directly cooperative relationship between colleges and enterprise can be understudied easily, but this paper emphasizes on some new trends. In 2010, Chinese government issued The National Guideline for Mid- and Long-term Education Reform and Development, which signals the kick-off of the all-round education reform and sets tones for the education development in the next ten years. It is determined to include "integrating workplace and school learning" and "school-enterprise cooperation" in the list of the main reform trials within the national VET system. Some local governments such as Zhejiang province, Shangdong province have issued "Regulations for promoting school-enterprise cooperation".

Most of China's Trade Associations were set up at the end of last century during the transformation from a planned to market economy with relevant line government ministries. They have played important roles in the cooperation of trade organizations. However, because of the shortage of legal function and role in VET, their functions in enterprises and colleges still need to be improved.

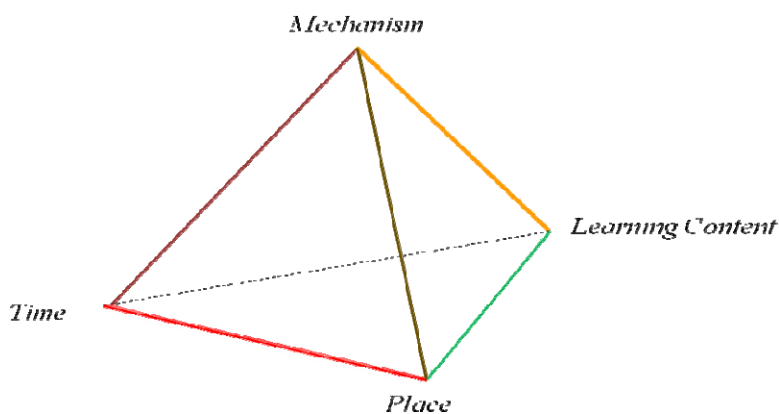
At this moment, the most popular model in mechanism level is Vocational Education Group. Vocational Education Group appeared in early 1990s. Under the guidance of government and on the principle of voluntary participation, it is a VET organization that is led by elite colleges, combined between colleges and enterprises in same region or sector to promote resources sharing, complementary strengths and common development. Its goal is to form a platform of multi-schools and multi-enterprises for cooperative workforce training.

In the model of “School-Enterprise Cooperative Mechanism”, we should pay much more attentions on some key points. The cooperative mechanism is crucial, especially for China vocational colleges. And the quality of cooperation depends on the rational game of four stakeholders.

Conclusion:

Based on meta-analysis of literatures and semi-structure interviews, a multi-dimension pyramid model of integrating work into learning can be drawn, which is presented in figure 1.

Figure 1: Integrating work into learning pyramid model



This model includes learning place model, learning time allocation model, Learning content model and School-enterprise cooperative mechanism model four sub-models. In certain degree, complex school-enterprise education question is translated into a mathematic question in this model. Every college can find its position in the question space and estimate its distance between the academic world and work world. The model also can help college transfer from school world to authentic work world. Not only it fits China vocational education, hope other vocational colleges in the world can also get enlightenment from this model.

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School-to-work transition: Explanatory and predictor variables for self-employability of high school pre-vocational agriculture graduates in Swaziland

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Summary: School-to-work transition programmes are critical for sustainable self-employability of high school pre-vocational graduates. The ex post facto study determined explanatory and predictor variables for sustainable self-employability of pre-vocational agriculture programme graduate. Survey instrument was prepared, tested for validity and reliability. Respondents believe the programme was relevant to self-employment, though most respondents were not in self-employment. Capital start-up and collateral for a loan were the main challenges. There was a significant relationship between self-employability and competence, availability of resources. Competence rather than resources was the key explanatory and predictor variable. Recommendation: Revolving fund must be established for capital start-up seed money. Home-based projects must be strengthened. Pre-vocational certificate of competence by an accredited body be instituted. Establish partnership between pre-vocational schools and small business enterprises to afford students the opportunity to share experiences with the business community.

Keywords: Predictor vocational education, school-to-work transition, self-employability

Introduction

Many educational policy measures related to vocational education and training (VET) make the assumption that VET contributes to the economic development of a country. This assumption hinges on the aspect of making VET an effective contributor to economic growth as assumed in the School-to-Work (STW) transition. Youth unemployment is receiving greater attention from governments and civil society groups. It is believed that unemployment for many young people is rooted partly in their lack of occupational competence (Mndebele & Dlamini, 2008). To curb the school-leaver and youth unemployment, factors related to self-employment are worth investigating to identify variables that explain and predict high school vocational graduates self-employability prospects. This would smooth School-to-Work transition.

Mwiria (2002) stated broad objectives of vocationalising secondary education curriculum, namely: (1) Provision of increased training opportunities for the rising numbers of school-leavers with a view to preparing them for self-reliance and self-employment through the promotion of practical skills and positive attitudes, and (2) Promotion of education and training that responds to overall development and in specific sectors such as agriculture, industry and commerce.

In Swaziland, vocationalising secondary education began receiving greater attention as a policy issue with the findings of the National Education Review Commission (NERCOM, 1985). The idea of curriculum reform towards vocational education was to diversify the secondary school curriculum to include technical and vocational areas

to improve learners' capacity and employability in the formal and informal sectors (Ikeoje & Agwubike, 2006, p. 213).

This study's examined contextual factors and conceptual variables drawn from the literature and included: resources, competence, attitude, aspirations, quality and relevance of programme, and personal characteristics. Resources were essential to start a business enterprise and be successful (Classens, 2008). Improved entrepreneurial skills defeat the various constraints that would inhibit entry into self-employment (Bosire & Etyang, 2003). Scharfstein (2006) believed that large components of success in entrepreneurship can be attributed to skill. An individual's attitude is the most important predictor of success in achieving goals (Dorgi, 2008). Graduates in entrepreneurship should possess a desire to create an enterprise of their own, built on their own abilities and a willingness to take risks and overcome obstacles (Schein, 1990). The key research question was: *What factors contribute to sustainable self-employability of pre-vocational agriculture graduates?* The research hypothesis was that availability of resources influences sustainable self-employability of graduates, thus affects school-to-work transition.

Purpose and objectives

Study determined factors related to sustainable self-employability of pre-vocational high school agriculture graduates for a smooth school-to-work transition. Specific objectives were to: 1) ascertain availability of resources for the pre-vocational education graduates to start agricultural businesses; 2) identify challenges encountered at the pre-vocational school and starting own business; 3) determine relationship between self-sustainability and the independent demographic variables; and 4) identify explanatory and predictor variables for self-employability of the graduates.

Methodology:

Instrumentation, population, data collection & analysis

Study was ex post facto, descriptive survey. In Phase I a Nominal Group Technique (NGT) was used to elicit opinions of purposively selected graduates regarding self-employability. Questionnaire was validated and reliability tested and coefficient was .60. Data collected from the NGT was used to develop a survey questionnaire administered to graduates of 2005 to 2009. Phase II: Population of study was pre-vocational agriculture high school graduates of 2005 to 2009 (N = 494). A stratified random sample was (n = 217) and usable was 168 (Krejcie & Morgan, 1970). Means and standard deviations were computed. One way analysis of variance (ANOVA) and the independent t-test were used to test for significant differences at an a priori probability of $p \leq 0.05$. Correlation coefficients describe relationships between variables, and stepwise regression identified explanatory and predictor variables for self-employability of graduates.

Results

Objective one ascertained availability of resources to start agricultural businesses. The overall findings (Table 1) were that resources a constraint. *Objective two* identified problems/challenges encountered in starting own business (Table 2).

Objective three determined relationship between self-employability and the independent variables. Pearson product moment was computed to measure association between interval by interval variables, and point biserial (rpb) used for dichotomous by interval variables. Correlation coefficients between selected independent variables and self-employability (Dependent variable) were as follows: Competence (.43_r),

Quality of programme (.41_r), Marital status (.36_{pb}) Availability of resources (.29_r), and Attitude towards programme (.30_r).

Table 1: Availability of resources for graduates to enter into self-employment

Item	Extent of Availability		
	n	M	SD
1. Markets for my produce	168	4.18	1.52
2. Resource	168	4.01	1.70
3. Land for growing crops	168	3.70	1.68
4. Space for raising animals (livestock)	168	3.67	1.72
5. Transport for goods/produce	168	3.33	1.69
6. Loans from youth development fund	168	3.20	1.75
7. Water for irrigation	168	3.14	1.87
8. Land for raising bees	168	3.08	1.77
9. Loans from commercial banks	168	2.26	1.46
Overall	168	3.40	0.94

Rating scale: 1 = Very Low Availability, 2 = Low Availability, 3 = Slightly Low Availability, 4 = Slightly High Availability, 5 = High Availability, 6 = Very High Availability

Table 2: Challenges encountered by graduates to enter self-employment

Item	Extent of Problem/Challenge		
	n	M	SD
1. Money	168	5.39	1.08
2. Meeting requirements for a business loan	168	4.75	1.37
3. Equipment for agricultural businesses	168	4.15	1.50
4. Availability of transport	168	3.71	1.72
5. Theft of agriculture produce	168	3.18	1.67
6. Support at home to start business	168	3.01	1.91
7. Competition in agricultural produce	168	2.91	1.66
8. Availability of business opportunities in agriculture	168	2.90	1.61
9. Support from pre-vocational agriculture teachers	168	2.69	1.66
10. Market for agricultural produce	168	2.67	1.48
11. Skills to start own business	168	2.04	1.32
Overall	168	3.40	0.84

Rating scale: 1 = Highly a Problem, 2 = A Problem, 3 = Slightly a Problem, 4 = Slightly not a Problem, 5 = Not a Problem, 6 = Highly not a Problem

Objective four identified explanatory and predictor variables for self-employability of graduates and stepwise regression determined independent variables that explained variance on self-employability of graduates (Table 3). The cumulative variance (R^2) in self-employability explained by the independent variables was 29%. The adjusted R^2 was 27%. Competence explained the greatest variance (18%) with a beta of .31.

Table 3: Factors to explain and predict the self-employability of graduates

Independent variables	R	R ²	R ² change	B	β	t – value	P
Competence of graduates	.43	.18	.18	.39	.34	4.58	.00
Availability of resources	.50	.25	.07	.14	.21	2.84	.01
Quality of the programme	.52	.27	.02	.16	.19	2.33	.02
Self-employment challenges	.54	.29	.02	.10	.14	2.02	.05
Constant				1.39			

$P \leq .05$, Adjusted $R^2 = .27$, Standard error = .54

The expected change (B) in competence of the graduates when the other variables were held constant was found to be .35. Availability of resources explained 7% of the variance with a beta value of .21. Availability of resources was the second most important variable. The expected change (B) in competence of the graduates when the other variables were held constant was .14. Quality explained 2% of the variance with a beta.19. Graduates receiving a good quality pre-vocational agriculture programme are likely to be self-employed.

Self-employment challenges explained 2% of the variance in self-employability with a beta of .14 which indicating self-employment challenges are the least important in explaining self-employability. The hypothesis availability of resources (7%) was rejected in favour of competence (18%) which explained the greatest variance.

Conclusion and recommendations

1. Availability of resources (Water, land, capital start-up) is an essential and must be given serious consideration. Students must be taught how to improvise.
2. Major challenges to enter self-employment were: (a) start-up capital, (b) requirements for bank loan, and (c) inadequate equipment to start and maintain enterprises. A Revolving Fund must be established from sales of enterprise produce and services.
3. Competence explained and predicted self-employability. Prior to enrolling, an assessment must be conducted to establish feasibility of student(s) to operate a home-based project.
4. A business forum for pre-vocational agriculture graduates must be established to allow ease of sharing experiences and networking.

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CHAPTER VI

**CURRICULUM DESIGN,
APPRENTICESHIPS AND NATIONAL
QUALIFICATION FRAMEWORKS:
DOES VET FIT INTO NQFS**

‘Apprenticeship’ in contemporary Britain, Italy and Germany

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Summary: This paper analyses ‘apprenticeship’ in contemporary Italy and Britain and the extent to which their governments’ efforts to change and expand the definition of ‘apprenticeship’ have blurred the meaning of the phenomenon. To describe contemporary ‘apprenticeship’, this paper stresses the distance between official national definitions and a standardised definition, built around internationally comparable criteria, indicating what minimum requirements ‘apprenticeship’ should have. It concludes that contemporary Italy and Britain record a considerable discrepancy in terms of the functional/nominal distinction. ‘Apprenticeship’ indicates something that, from an international comparative perspective, scarcely meets the standard minimum requirements, in rules and practice.

Keywords: Apprenticeship, public policies, school-to-work transition, youth employment

Introduction

Nowadays many national governments, international organisations and European institutions promote ‘apprenticeship’ as an effective tool to tackle youth labour market problems, including unemployment, inactivity, low educational levels, and to reduce skills mismatch. Also Italy and Britain supported and reformed apprenticeship, inspired by the German dual-system. However, evidence suggests that the Italian and the British measures only partially meet the German standards, mainly on the training quality side, and on the institutional one. Moreover, in these countries, an increasing distance between laws, policies and practices contributes to scarce transparency in apprenticeship systems. These parallel processes stand out in contrast with the transparent mechanisms and the high-quality level of German apprenticeship, which, despite critics, is still recognised as a successful model for work-based vocational education and training and for school-to-work transitions.

The research question of this paper concerns the extent to which in Italy and in Britain governments’ efforts to change and expand the definition of ‘apprenticeship’ are blurring the meaning of the phenomenon and moving away from it. The aim is describing ‘apprenticeships’ in contemporary Italy, Britain and Germany, to stress the distance between official national definitions and a standardised definition of what ‘apprenticeship’ should be, thereby highlighting the gaps between laws and practices.

Methodology

The comparative methodology of this paper grounds on a deep understanding of what ‘apprenticeship’ means: not only at a nominal level, in terms of what is referred to as ‘apprenticeship’ in governments’ policies; but also at a functional level, in terms of the standard minimum requirements that all ‘apprenticeships’ should meet. In other words, borrowing from previous research (Ryan, Gospel and Lewis 2007), a distinction is drawn between official definitions, i.e. what national governments define ‘apprenticeship’ to be, by means of norms and minimum legal requirements (Appren-

ticeships with capital 'A'); and a standardised definition, built around internationally comparable criteria, saying what true apprenticeship is taken to be (apprenticeships, with little 'a'). The standardised definition defines 'apprenticeship' as a programme for young people to learn a defined occupation, that holistically integrates part-time vocational education and training, with regulated on-the-job learning, and work experience at the workplace, and it results in an externally recognised vocational qualification. In this connection, 'apprenticeship' systems are appraised by a twofold measurement: on the one hand, official statistics count the participants to what is named Apprenticeship. On the other hand, those who can be considered apprentices, from a functional viewpoint. Obviously the two populations overlap, rather than having mutually exclusive membership. This distinction fits well to Britain, while it seems less consistent with Italy. To size of the two populations, one method would be implementing the standardised definition by measuring all its minimum requirements. However, since this would be far too complicated – and, to an extent, impossible – owing to lack of the necessary data, this paper identifies 'the' indicator that, better than others, clearly separates Apprenticeship from apprenticeship, at least in principle and in all countries. The underpinning assumption is that 'apprenticeship' differs from other work-based training programmes and from full-time vocational training insofar as it blends part-time vocational education, off- and on-the-job learning, and work experience, by combining different learning venues. A possible step is looking at the extent to which – in practice – part-time vocational education is, at least, part of 'apprenticeship' programs. In other words, this paper considers apprentices those involved in part-time vocational education. This way to implement the standardised definition is certainly partial but it gives, at least, an idea of how small, in Britain and Italy, apprenticeship population is compared to that of Apprenticeships. The latter, by the way, would be even smaller, if other indicators were considered, and the boundaries of the definition further restricted.

Results

Contemporary system are described quantitatively (table 1) and qualitatively (table 2). Indicators for quality are selected arbitrarily assuming that they are all of equal importance and their numerical values do not have a quantitative literal meaning.

Table 1: Size of 'apprenticeship' systems

		Italy		England		Germany	
		000s	%	000s	%	000s	%
Inflows	2009/10	283.083	4.19	279.700	4.07	559.96	4.07
Stocks	2009/10	594.668	2.58	491.3	2.01	1,571.457	4.39

Sources: Italy: ISFOL 2012, XII Rapporto di Monitoraggio, ISFOL: Rome p. 5 and 16; England: BIS, SFR 28 June 2012 <http://www.education.gov.uk/rsgateway/DB/SFR/index.shtml>; Germany: BIBB 2012, Datenreport zum Berufsbildungsbericht 2012, p. 14, p. 108; Statistisches Bundesamt 2011, p. 141. *Note:* basis for % columns is youth population for inflows and employment in the whole economy for stocks.

In 2009 the number of people entering 'apprenticeship' (inflows) was quite similar in Italy and in England, while it accounted for about a half of the German one. Also the number of people in training (stocks) differs considerably between Italy and England from Germany. In 2009/10 there were 594,668 'apprenticeship' contracts in Italy, and 491,300 in England, respectively equal to 2.58 and 2.01 of the total workforce in employment. In Germany, 'apprenticeships' were more than half a million (1,571.457), covering almost 5 per cent of all employed people (4.38 %).

Table 2: Selection of indicators for apprenticeship quality (rules)

	Italy (°)			Britain (England)	Germany
	T1	T2	T3		
a) Programme minimum duration, months, 2012	6	6	6	12	24
b) Off-the-job minimum training, hours/year, 2012	400	0	0	100	400
c) Training staff qualification, legal minimum requirements	In company	0	0	0	2
	Off-the-job	1	0	1	2
d) Assessment methods	2	0	1	1	2
e) Completion rates, 2009	n.a.	66	n.a.	71	86

Sources: Italy: ISFOL 2011, XI Rapporto di Monitoraggio, Rome: ISFOL, p. 16; England: BIS, SFR 6/2012; fieldwork; Germany: BIBB 2012 (quot.), p. 92; Steedman 2010, The State of Apprenticeship, London: CEP, p. 24. Notes: (°) T1= Apprenticeship for a vocational qualification or a diploma; T2= Apprenticeship for a contractual qualification; T3= Apprenticeship for higher education or apprenticeship for research. (a) Programme minimum duration, months, 2012: minimum duration in months, defined by law. (b) Off-the-job min. training, hours/year, 2012: share of part-time vocational education and training. (c) Training staff qualification, legal requirements: 0= no requirements; 1= either occupational or pedagogical qualifications; 2= occupational and pedagogical qualifications; (d) Assessment methods: 0= no legal minimum requirements; 1 = internal (in company); 2 = external

As concerns quality, Germany stands out for the most regulated system, compared to Britain and Italy. It requires the highest minimum apprenticeship duration, the largest share of off-the-job training (considering that T1 in Italy is not implemented), it defines minimum standards for assessment and trainers, while recording the highest completion rates.

The three countries are now compared against the criteria of the standardised definition of 'apprenticeship', in terms of rules (tab. 3) and of practices (tab. 4).

Table 3: List of comparable criteria, rules

	Italy			England	Germany
	T1	T2	T3		
Open to young people only (a)	0	0	0	0	1
Occupational identity (b)	1	1	0	1	1
Part time vocational education and training (c)	1	0	1	0	1
On-the-job training standards (d)	1	1	1	1	1
Training staff qualification (e)	Off-the-job	1	0	1	1
	In company	1	1	1	0
Externally recognised VET qualifications (f)	1	0	1	1	1
Closeness to the 'functional' definition	6	3	5	4	7

(a) *Open to young people only* (legal possibility to hire only under 25): 0= people of any age can be hired as apprentices; 1= only under 25 year olds can be hired as apprentices. (b) *Occupational identity* (degree of apprenticeship occupations' statutory regulation): 0= there are no defined occupations for apprenticeship; 1 = apprenticeship leads to a defined occupation; (c) *Part-time vocational education and training* (compulsory part-time VET in apprenticeship): 0= apprenticeship does not include compulsory part-time VET; 1 = apprenticeship includes part-time VET; (d) *On-the-job training standards* (statutory provision of externally recognised standards on on-the-job training):0= not required by law; 1= required by law; (e) *Training staff qualification* (legal minimum requirements for training staff qualifications, considering both pedagogical and occupational skills): 0= no qualification is required; 1 = qualification is required; (f) *Externally recognised VET qualifications* (legal recognition of apprenticeship VET qualifications) 0= apprenticeship does not lead to an externally recognized VET qualifications; 1 = apprenticeship leads to an externally recognized VET qualifications.

The German regulation of 'apprenticeship' most closely resembles the standardised definition of 'apprenticeship'. In practice, Italy and England score considerably lower than Germany. Main findings suggest that Italy and England record a considerable discrepancy in terms of the functional/nominal distinction (apprenticeship/Apprenticeship): governments use 'Apprenticeship' as a label to indicate some-

thing that, from a comparative perspective, scarcely meets the requirements of ‘apprenticeship’, both in rules and in practice (table 5). In Germany, instead, ‘Apprenticeship’ indicates programs that, both in terms of rules and of practice, meet the qualitative criteria of the standard definition. In other words, whereas German contemporary apprenticeship system still resembles what should be ideally called ‘apprenticeship’, the Italian and the English apprenticeship systems stand far from it.

Table 4: List of comparable criteria, practices

	Italy (T2)	England	Germany
Open to young people only ^(a)	0	0	2
Occupational identity ^(b)	1	2	2
Part time vocational education and training ^(c)	0	0	2
On-the-job training standards ^(d)	1	1	2
Training staff qualification ^(e)	0	1	2
Externally recognised VET qualifications ^(f)	0	1	2
Closeness to the ‘functional’ definition	2	5	12

^(a) *Open to young people only*: 0= no/low; 1= mixed; 2= high; ^(b) *Occupational identity* (degree of apprenticeship occupations’ regulation): 0=no/low; 1= mixed; 2= high; ^(c) *Part-time vocational education and training* (share of apprentices receiving or at least involved in VET courses): 0= no/low; 1= medium (50%); 2= high (>50%); ^(d) *On-the-job training standards* (influence of externally recognised standards on on-the-job training): 0= low; 1= mixed; 2= high; ^(e) *Training staff qualification* (level of training staff qualification, considering both pedagogical and occupational skills, and in company and off-the job staff): 0= low; 1= mixed; 2= high; ^(f) *Externally recognised VET qualifications* (recognition of apprenticeship vocational qualifications): 0= no/low; 1= mixed; 2= high.

The overall distance of Italy and Britain ‘Apprenticeship’ system from the standardised definition, indicates a parallel trend in the two countries, mostly in terms of changes of ‘apprenticeship’ contents and function, which is less likely the case in Germany. As mere descriptive observation, Italy and Britain stand as opposite to Germany, despite their governments have promoted national reforms, and still do so, as inspired to Germany. The intended contribution of this paper is the filling of a gap in the comparative research on ‘apprenticeship’, often restricted to Anglo-Germanic comparisons, to the neglect of the Italian case. Moreover, the elaboration of a standardised definition of ‘apprenticeship’, although limited and partial, could fuel further research at an international level, also to support the elaboration of policy strategies and reforms of national ‘apprenticeship’ systems – a task that appears to feature at present on the policy agenda of the current British Government and the Italian one. This point seems particularly relevant, in a time of employment crisis, when the problems of youth are at the heart of public debate.

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National Qualification Frameworks (NQFs) as a foundation to gaining more transparency and a better international recognition of professional qualifications including VET qualifications

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Summary: In general in each country should be a National Qualification Framework (NQF) and a “Standard Classification of Occupations” with “National Occupational Standards” (NOS). These frameworks and classifications should further stay in reference to international standards like ISCED and ISCO. And the recommendation to all frameworks and classifications is to use in regard of the work and education system too only one identical qualification model instead different skill, qualification or competence models. The result is more transparency to and between the systems and more easy comparison, matching or especially recognition of professional qualifications.

Keywords: NQF, ISCED, ISCO, National Occupational Standard (NOS), recognition of professional qualifications

Introduction

In our globalized world there exists in general in each country on the one hand a “Work and employment system” and on the other hand an “Education and training system”. And normally between these systems is always a curricular connection, which depends in detail of the respective country specific didactical education system approach. This systemic link influences therefore didactical especially the quality of all professional qualifications. For the evaluation and assessment of the professional qualifications (here always included “Vocational Education and Training” (VET) qualifications) it is consequently not only necessary to know the didactical approach like for the apprenticeships or the school based VET. Moreover is important to have in reference an assessment basis e.g. in form of a “National Qualification Standard” (NQS) with clear content definition especially of the “qualification level” and “qualification specialization”. In an equal manner the NQS is normally also the development basis for e.g. the VET curriculum because in both ways these NQS must have a didactical and curricular link to the professional qualification needs in the “Work and employment system”. But beside the NQS as an important quality criterion within the quality assurance processes “Process Quality” and “Output Quality” (see figure 1) the qualification needs of the “Work and employment system” are also an important quality indicator in reference directly. Within the whole quality assurance processes and especially to the main result “Outcome Quality” at the end (see figure 1) this quality reference indicator - some times in the form of Company or “National Occupational Standard” (NOS) - become a special signification for the “Education and training system”.

Only in regard to these quality assurance aspects there are reasons enough why all countries should have in general standards for the “Education and training system” and standards for the “Work and employment system”. These standards, here above

all the “National Education or Qualification Standard” (NQS) and the “National Occupational Standard” (NOS), are not only helpful for the different control fields of the national quality assurance processes. The standards also very useful for more national and international transparency within and between the education and work system and in particular e.g. for curriculum development, as reference to the examinations or assessments of qualifications and also the certification of informally gained qualifications, the recognition of especially the so called regulated and respective “foreign” professional qualifications etc. and last but not least the international comparison of professional qualifications. But already the first step here to define and describe the different standards is very difficult and complicated and need as a pre-condition normally a common definition of e.g. a “National Qualification Framework” (NQF) and a “National Standard Classification of Occupation” (NSCO) too. These is the main reason too why probably most of the countries have no own National Standards or National Frameworks to day. And may be at the same time this is the reason to the difficult answer of the question: does VET fit into NQFs? On the one hand and as the advantages of the NOS have shown in general it is clear that of course also VET fit or must fit into NQFs. But on the other hand and because many countries have no standards and frameworks therefore many countries have more over no chance to fit VET in a NQF. Especially in this respect the further investigation and discussion will more focus of the advantages of the introduction of standards, classifications and frameworks in general.

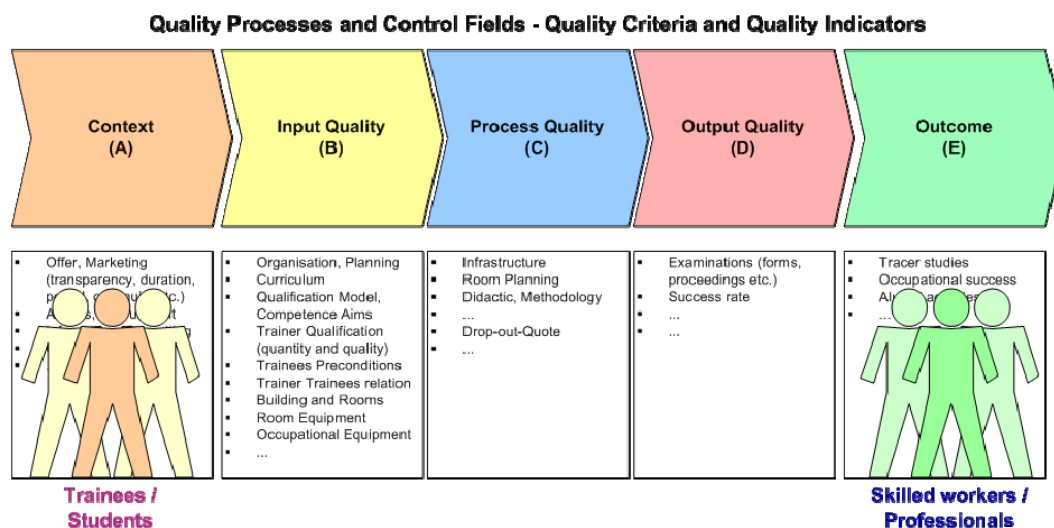


Figure 9: Quality assurance framework (Petersen & cp. EK 2008, p. 15)

Investigation and methodology

About more than well 200 is the number of nations and countries around the World. Many of these countries have or are on the way to develop a National Qualification Framework (NQF) and however most of the countries probably have no own NQF. But for more or less all nations and countries there is since many years in principle and in minimum as an international reference a “World Qualification Framework” (WQF) in form of the “International Standard Classification of Education” (ISCED). The ISCED as a UNESCO result is in the current 2011 version a revision of the ISCED 1997 version and taking account the changes in education and qualification structures over the preceding decade (cp. ISCED 2011). Within the ISCED and if we see the education more in form completed education programs or as an education level we can based on several ISCED definitions instead use the term education also the term “Qualification. The official confirmation, usually in the form of a document

certifying the successful completion of an educational programme or ... Qualifications can be obtained through ... validation of acquired knowledge, skills and competencies ... which is typically certified by a recognized qualification” (ISCED 2011, S. 83). In this regard the ISCED-2011 can use in all countries around the world as a “World Qualification Framework” (WQF) both direct as an national or in minimum as an international reference framework. As shown in figure 2 the education resp. qualification standard is based on the ISCED-2011 definitions actually structured first in eight education resp. qualification levels and second further in different broad groups or fields of education and qualifications. In comparison and for example the “European qualification framework” (EQF) or the “German qualification framework” (DQR) shown also the structure of eight qualification levels.

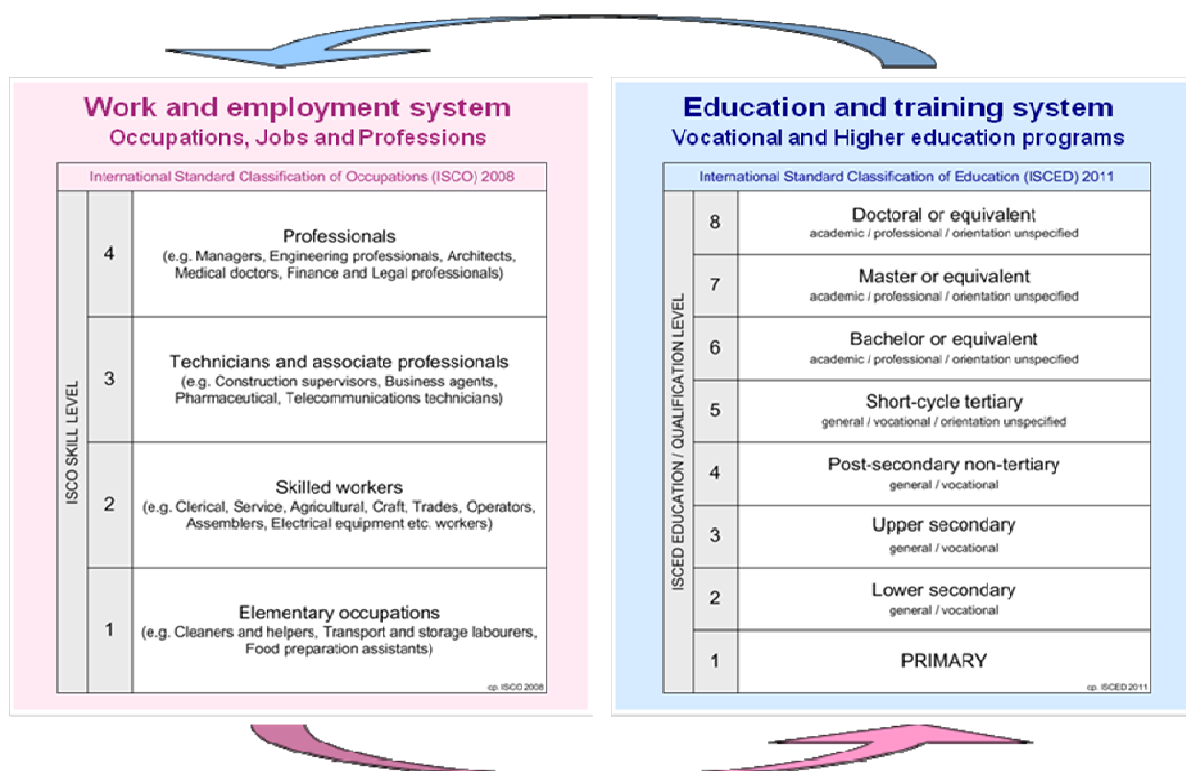


Figure 10: Work and education system and international classification interdependence

Independent the differences of the national qualification frameworks or their existence in general each framework must cover and describe within their structure all qualifications of the respective “Education and training system”. Especially each framework must include beside HE qualifications the VET qualifications and e.g. the qualifications as a result of apprenticeships. And in detail each qualification must within the framework structure describe based on a qualification model in regard to the “qualification level” and “qualification specialization” and in the form of “Learning Outcomes”. This qualification model and form is in the meantime very common defined with the descriptors “Knowledge, Skills and Competencies” and e.g. “first” used in the EQF (cp. EK 2008) and to day in ISCED-2011 (e.g. ISCED 2011, S. 83) too. These new didactical basic framework model and elements are not only a new statement that specifies better within all other qualifications what a learner will know or be able to do as a qualification result of a learning activity or a training or study program. The framework structure and elements are since then also on the way to change the curricula and the examinations or assessments of qualifications. And in the end there is a improvement especially of the national certificates which now more

in detail attested professional qualifications, because the learning outcomes are better described based on level descriptors and in generally expressed as knowledge, skills and competencies. In this way for example the German certificate like "Gesellenbrief", which qualifications only described as a bricklayer or an electrician very short with e.g. "theory = good and practice = good", must urgent improve.

In regard to the curricula and their didactical link to the "Work and employment system" it is further very helpful that the description of the professional qualification needs within the work classification or NOS also used a qualification model with the descriptors "Knowledge, Skills and Competencies". But international the ISCO defined first a "skill model": "The basic criteria used to define the system of major, sub-major, minor and unit groups are the "skill level" and "skill specialization" required to competently perform the tasks and duties of the occupations" (ISCO 2008, S. 1). Therefore the recommendation is to use within the work classification or NOS instead skill also the term qualification and especially for e.g. the results of qualification research the qualification descriptors like in ISCED or EQF. The advantage is clear because the qualification needs of the work are better to understand and to compare or match within the work and education systems.

Summary and conclusion

A big international advantage of the frameworks and classifications with equal clear qualification models is more transparency and better information's of on the one side the occupations and qualification needs and on the other side of the country specific qualification certificates. The advantages in regard to formal recognition of professional qualifications are easy to see because in the most countries around the world there are many problems by the recognition of the respective "foreign" professional qualifications. And especially these advantages are evident in regard of the so called regulated professions for what there is e.g. in Europe a special European directive on the recognition of professional qualifications (cp. EC 2005 with over 150 pages law regulations!). For instance a current survey shows the specific recognition problems in the border region Germany Denmark with bad consequences on the labour market (cp. Petersen 2012). Special problems are the mobility and proper monetary acceptance of experts and skilled worker because e.g. in Denmark several professional qualifications acquired in Germany are not recognised and these of course is valid similarly inverse. Therefore the new frameworks and classifications can help to solve many problems on the recognition of qualifications too.

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Connections between the recognition of non-formal and informal learning and National Qualification Frameworks – consequences for VET

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Summary: It is assumed that National Qualification Frameworks (NQFs) can support the dissemination and the effectiveness of approaches towards the recognition of non-formal and informal learning. Within this paper exemplary European recognition approaches are analysed with a special focus on their relationships to the development of NQFs. The presented approaches were selected with reference to a theoretical derived typology. The paper focuses particular on recognition approaches, which are integrated within the formal educational system, and identifies their political and methodological aims as well as their institutional construction. Against this background the potentials of qualification frameworks to support recognition appear regarding the enhancement of transparency of qualifications, the provision of a common reference point and the promotion of the learning outcomes concept.

Keywords: Recognition, informal learning, qualification framework, Europe

Introduction

All European member states are occupied with the development and implementation of NQFs. At the same time they develop rather diverse approaches towards the recognition of non-formal and informal learning as this topic in general becomes more and more important (cf. e.g. Werquin/OECD 2007). The Cedefop concluded already in 2010 that the success of NQFs to some extent depends on how they are able to support the validation of non-formal and informal learning (cf. Cedefop 2010, p. 20).

Theoretical basis and research questions

Basis of this paper is a broad study that systematically analysed, evaluated and finally classified fourteen selected European approaches towards recognition regarding a theoretically developed typology. This typology differentiates between the three types 'Integration', 'Autonomy' and 'Secondation'. The integrative type is characterized by his connection to the formal educational system. Approaches which belong to the autonomous type provide a certification while they are not anchored within the formal educational system. In contrast approaches of the type 'Secondation' are marked, because they don't provide any certification or formal recognition, but they support this (cf. Annen 2012, p.280ff). Besides the competence theory and the certification theory the theoretical basis of the analysis is formed by the institution theory and the governance approach.

In the context of the above study it became apparent that there are especially connections between approaches belonging to the type 'Integration' and NQFs. Both are connected with the national understanding of competence and similar stakeholders are involved in their design and implementation. Furthermore NQFs are an important reference point for the formal recognition of competences. The central

question of this paper is how integrative approaches towards recognition and NQFs are conceptually and practically connected and what their design means for VET. The analysis is based on the following theoretically derived criteria: aims, understanding of competence, norms and standards, stakeholders, rights of disposal and coordination.

The following four exemplary countries were chosen: France (Validation des Acquis de l'Expérience - VAE), England (National Vocational Qualifications - NVQs), Norway (Dokumentasjon av Realkompetanse) and the Netherlands (Erkenning van Verworven Competenties - EVC). The reason for this choice is that all these countries have broad experiences with using an integrative approach towards recognition and have developed NQFs – either already long time ago (France and England) or quite recent (Norway and the Netherlands).

Methodology

The presented results regarding the recognition approaches were achieved through three methodical components. Firstly the approaches were analysed within an extensive literature research oriented at the approach of Cooper (1989). Secondly an analysis of documents was carried out with regard to the above analysis criteria and the method of qualitative content analysis (Mayring 2002). Among these documents are e.g. laws, handbooks, guidelines, quality assurance material and compendia.

Finally these analysis results were validated by interviewing important key persons regarding every recognition approach. These persons played a decisive role in the context of the development of the approaches or in the implementation of the approach in practice. Besides the purpose of validation the interviews served the collection of data concerning the experiences with the approaches. Within the whole study 24 partly standardized interviews with experts in the field of recognition of non-formal and informal learning were carried out and analysed with regard to the method of summarising content analysis (Mayring 2002).

The information on the national development of the NQFs mainly derived from a literature research. Besides this some of the interviewed experts were also involved in the development of the NQFs in their countries.

Results

Aims and institutional arrangement of recognition approaches

All analysed approaches towards recognition pursue three goals: advancement of lifelong learning, encouragement of the individual's employability and formal qualification of the individuals.

The approaches furthermore have in common that they comprise a formative objective based on a summative identification of learning outcomes. The summative orientation eases certification and formal recognition. Furthermore all recognition approaches consider self-assessments as well as third party assessments. The last one is also necessary because of the objective to lead to formal recognition. But the methods of the third party assessment within the approaches are more oriented towards non-formal and informal learning like portfolio assessment or observation while working, which supports the concept of lifelong learning and the learning outcomes orientation.

Regarding the advancement of lifelong learning especially the Norwegian and the Dutch approach can be evaluated very positive, because these approaches facilitate a wide scope of possible standards as reference points for recognition. Both countries furthermore have a very broad concept regarding recognition of competences –

broader than France and England. The both last named have a further developed NQF. The concept of lifelong learning is also supported by all approaches because they give every individual the right to use it - in France and Norway even anchored within a formal law.

The aim of facilitating the individual's employability is realized by the involvement of certain stakeholders. The Norwegian and the Dutch approach involve the stakeholders of any sector – formal educational system, private and non-profit sector. While the English approach pays high attention towards the private sector, the French mainly focuses on the formal system. Regarding the standards the Norwegian, the Dutch and the English approach allow vocational standards as reference. The strong involvement of the stakeholders of the private sector within these approaches also promotes their acceptance within this context.

Regarding the objective of formal qualification of the individuals it is consistent that all approaches engage the stakeholders of the formal educational system. All approaches are mainly oriented towards national educational standards and assessment standards regarding the process and the output, which is necessary to lead to a formal qualification. Except the English approach, which is based on a system of institutional accreditation, they all leave the rights of awarding qualifications up to the stakeholders of the formal educational system. This abets the acceptance of the approaches. All approaches are coordinated via networks. To guarantee the uniformity they also use hierarchical coordination mechanisms, first of all formal laws like in France and Norway.

Connections between recognition approaches and NQFs

The analysis results show relationships between the national design of the approaches towards recognition and the corresponding NQFs, but these relationships are rather diverse. In France there are indeed conceptual points of reference between the recognition approach and the NQF. The French NQF (RNCP) plays a decisive role within the national approach towards recognition (VAE). All qualifications registered in the RNCP must be acquirable through VAE. Registration in the RNCP is furthermore necessary for financing the VAE. To a certain extent this is also the case in England regarding the connection between the NVQs and the QCF (Qualifications and Credit Framework). Furthermore in Norway the development of the NQF also went along with paying attention towards the recognition of learning outcomes. In the Netherlands and Norway the approaches towards recognition as well as the comprehensive NQFs try to integrate the labour market and in doing this to recognise the learning outcomes acquired in vocational contexts.

The Dutch NLQF is seen as an instrument to further strengthen the role of the already relatively widespread Dutch EVC-approach and turn it into an integrated part of the qualifications system. Furthermore the NLQF is expected to further strengthen the basis of the learning outcomes and competence approach for the existing validation system and for the Dutch education and training in general (cf. Cedefop 2012, p.185f). In Norway by using the learning outcomes approach to describe all qualifications the NKR has a potential regarding the development of new instruments for valuing competences acquired outside the formal system (cf. Cedefop 2012, p.188). One important reason to use learning outcomes is to encourage the consistency of curricula at national level, which is important to support the validation of non-formal and informal learning. Because curricula are used as references for the validation the shift towards learning outcomes will influence the way validation is carried out (cf. Cedefop 2012, p.194f). In England the learning outcomes approach, whose use is required

within the QCF, is closely linked to the use of the so called recognition of prior learning (cf. Cedefop 2012, p.262).

Regarding the above one can observe that the aims connected with recognition approaches and NQFs partly correspond to each other. Furthermore the competence concepts used within both instruments are often rather similar and are open towards different learning contexts. In the analysed countries the implementation of recognition approaches as well as NQFs goes along with a stronger orientation towards learning outcomes, which results in also outcome-orientated vocational norms and standards. Furthermore points of reference can also be identified regarding institutional aspects – e.g. the involved stakeholders are partly the same and the relevant networks between them are similar. Overall the activities towards a further development of approaches towards recognition promote the acceptance and the meaning of experiential (vocational) learning. As NQFs in some countries try to build a connection between the educational sub systems (stronger in France and England) as well as between the educational system and the labour market (stronger in Norway and the Netherlands), they also promote the meaning of experiential (vocational) learning by trend. Although diverse points of reference between recognition approaches and NQFs can be identified there are still potentials regarding a better consideration of non-formal and informal learning within NQFs.

Final remarks and recommendations

One can assume that the learning outcomes approach and the validation of non-formal and informal learning strengthen each other. In general it is difficult to evaluate the extent to what the learning outcomes perspective influences pedagogical approaches and learning methods (cf. Cedefop 2012, p.194). Regarding the assumption that NQFs have a potential to support the recognition of non-formal and informal learning Young (2005) remarks that these promises have not been realized for a number of reasons. He lists up pedagogical as well as institutional aspects that make the formalization of non-formal and informal acquired learning outcomes rather difficult. He suggests the use of APEL (Accreditation of Prior Experiential Learning) less for qualifications and more for access. Besides this on the basis of the results of the above study one can recommend to increased use the both other types of recognition approaches ‘Autonomy’ and ‘Secondation’ . The main reason for this is that these approaches are not as strongly orientated towards a formal qualification as the approaches belonging to the type “Integration”.

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Apprenticeship and NQF – do they fit together or compete with each other? The case of Switzerland

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Summary: This paper highlights the NQF discourse which has been ignored for quite a long period of time in Switzerland. However, after the turn of the century the qualification framework approach has been rather hesitantly taken into account before it has been finally applied nowadays. Policy makers tried to keep this discussion out of Switzerland, due to fears of undermining the position of dual VET. The surrounding countries including Austria and Germany, however, have been both an example and incentive to push the emerging issue of implementation a step further. Summed up, Swiss VET policy tries to keep its system stable. However, a great split between academic and VET stakeholders still exists when it comes to the topic of the NQF in Switzerland.

Keywords: Dual apprenticeships, national qualification framework, higher education

Introduction

The rise of Qualification Frameworks

In Anglo-Saxon countries, National Qualification Frameworks were introduced in the 1980s. The aim was to make the system more coherent, more accessible for youngsters and also more flexible. In this decade, in the UK the apprenticeships had no substantial weight. The issue was not to establish a national qualification framework instead of an apprenticeship model but to build up a national system of education which included universities as well as Vocational Education and Training. This overall view was the result of a diagnosis of crisis in the educational system. Meanwhile academic achievement was renowned outside the UK against what the standard of Vocational Education was very poor. The framework should help to establish standards and make the vocational system more transparent and accessible on the one hand. On the other hand, it should be based on competences and outcomes. This philosophy, often called a behaviouristic approach, emerged as a nationwide model that also included the academic sector. This policy was not accepted by most of the stakeholders at all. Universities as well as a lot of researchers in this field were quite critical about it. They denied any success and stated that the quality of apprenticeships was not rising but decreasing instead. Even today, a great deal of critical assessments and evaluations about the establishment of qualification frameworks can be found easily.

A second phase, was its spread over the continent and the construction of a European wide framework in the 1990s. The European framework was driven by a renewal of a failed concept of delivering a common currency for VET. After a long period of comparing different titles of different countries and trying to assess the value and quality of VET in the EU member states, the European Union decided to deliver a framework which enabled the countries to situate their own qualifications based on a commonly defined frame. Meanwhile, all countries have introduced in one or another way such a concept that helps to situate the education for lifelong learning in a

national and international context. Besides that, the European approach is including not only VET but also academic education as well.

Switzerland: Two velocities

Switzerland was always quite critical about establishing national qualification frameworks. The wide held belief was that the NQF-model was good for low performing countries but not for dual apprenticeship countries like Switzerland, Austria and Germany. In the eyes of Swiss policy makers, a well ordered educational system did not need a more coherent structure. The reason was, of course, quite obvious because their systems were running without any big problems (cf. Gonon & Maurer, 2012). Nevertheless, it was surprising for Swiss VET representatives that German and Austrian VET were establishing such frameworks at the beginning of the 2000s.

The hesitating attitude in Switzerland, however, was well received in public because this country does not belong to the EU. However, on the other hand, the Swiss universities and polytechnics introduced a national framework. In contrast to VET policy, the Bologna process was a trigger for implementing the framework model. So, we can state two velocities of introducing qualification frameworks: meanwhile the academic sector is pushing forward while the VET sector was opposing this international trend until today.

This introduction delivered a short historical account of the qualification framework debate in the light of reforming educational systems and how Switzerland's position has to be understood.

The next part is based on content analysis of the deliberation about the NQF and the positions of the important stakeholders. All in all, over 50 written contributions were delivered in order to give an answer to the question of how and in which way such a framework should (or should not) be introduced. This kind of deliberation is quite common for Swiss policy. It has happened in the forefront of the introduction of a new law or amendment before. In this case, the Swiss government has been implementing a specific amendment for regulating the conditions for a National Framework. This Content analysis of a Corpus of statements of the various stakeholders has to be seen in the light of the Swiss VET tradition which is based on apprenticeships.

Methodology

The methodology is build upon theoretical assumptions which lead to content analysis. The theoretical background of this paper is based on 3 strands. The first one is a historical and path-dependent approach close to historical institutionalism which focuses on actors and the deliberation of regulations. This point of view is directed towards critical junctures – like the topical deliberation about a National Qualification Framework (Jäger, 2013).

The second perspective is closely linked to a view developed by political scientists based on the approach of Varieties of Capitalism that discerns a liberal market economy (LME) and coordinated market economies (CMEs). Apprenticeships are flourishing in CMEs meanwhile LME “prefer” more modularized and, thus, less vocationally oriented qualification approaches (cp. Busemeyer & Trampusch, 2012).

The third strand is inspired by the theory of justification and conventions developed by the French pragmatist sociology. Conflicts and compromises are highlighted through different patterns: the market, the industry, the public and the world of inspiration and creativity (Verdier, 2001).

These theoretical perspectives are the background for the analysis of the deliberation corpus of the stakeholders in Switzerland. Another element is the review of the

actual discourse in the light of newspapers and scientific debate (policy papers and research literature).

Three aspects belong each to one of these perspectives are in the focus:

1. The role of the three main actors (administration, federal states and the organisations of the world of work, e.g. business associations) in the light of the development of Swiss VET.
2. The policy of keeping the occupational focus within the Educational System in order to strengthen the vocational part.
3. The justification of a specific way of Swiss policy.

Core questions of the content analysis

Core questions are the following: Does such a framework affect the dual system? If so, how or in which way is the dual system affected by it? What are the hindrances and what are perhaps also the chances of such a new structure for apprenticeships? How is or will be the relation to the academic field in the future? What is or will be the effect for enterprises? How do the stakeholders assess the future of dual apprenticeships?

Results

Like all reforms in Switzerland, the main question remains if a system has to be changed or just optimized. The tradition of a broad vocational sector and a small academic one was never questioned by anyone. The following presentation of the results of the analysed documents is a very summarized version. It reflects the positions of different stakeholders in order to modify the framework and establishes specific interests. All in all, such amendments which will be established quite soon are the result of a compromise of different actors.

Restructuring Swiss VET through NQF?

What should be the added value of a qualification framework? The debate in the 1980s and 1990s was focused on reforms in Switzerland which tried to make the system more flexible. The focus was on parity of esteem between vocational and general education. Swiss policy makers build upon a two pillar principle: on the one side, there is a vocational strand and on the other side an academic one. Both worlds do not have anything in common. At a very early age, children had to choose either one or the other pathway. But in the light of new reforms this division is being questioned. The Swiss national framework gives evidence that these two worlds have to become closer to each other. The federal states are opposing the trend to differentiate between apprenticeships and to define higher and also lower standards.

The tradition of dual VET

What should be added here is the fact that all stakeholders try to establish a specific role for apprenticeships and higher professional education and training related to other and, thus, more school-based systems. The attempt to validate practical experience and to rank it as high as possible is visible in most statements. Meanwhile, industry, higher education and educational stakeholders in the French- and Italian-speaking part of Switzerland are open for an integration of Swiss VET into a national framework. But the trade associations and some representatives of different branches are more than sceptical. The critique is quite similar in terms of the point of view that general education is over-valued whereas practical work and experience is not enough respected and, therefore, is not really represented within the framework. Nevertheless, it is quite obvious that all stakeholders have to cope with the new Swiss qualification framework.

The division of academic and vocational education

What is striking is the fact that there is a clear division between the answers of representatives of higher education and VET stakeholders. Meanwhile, the universities established a framework for their own purposes in relation to the Bologna reform against what the VET system remained out of this programme. Now, the issue is contrary. The academic world is criticising this framework because it does not take the specific views of universities and higher education into account. The higher education pleads for a twofold framework: one for VET and another one for higher education. They also claim that the highest levels of the framework (6-8) should mainly be reserved for them. So, in the end we find a similar conflict to the one in other countries like Germany and Austria.

The internationalization of Swiss VET

What should be taken into account is that the Swiss VET is now much more involved in international debates through the NQF. Most of the stakeholders see also a chance to make the Swiss system more accountable and more visible in the international arena. Especially representatives from higher professional education and training hope to become more visible and valued in the international labour market.

A preliminary result is the fact, that Swiss VET policy is very pragmatic in this case by integrating and adapting new concepts in the running system. What strikes most is that there is hardly a difference between different VET models. More critical is the division between VET and higher education, especially between VET and the universities. This result goes in line with conflicts in other countries like Austria and also Germany. More surprising is that this division is not a specific problem of apprenticeship countries as it is even visible in England. Most of the stakeholders in Switzerland do not fear the international influence related to the VET system so much but even more the emergence of VET and other parts of the educational system that create a new division inside Switzerland. Under the justification of being more competitive and more accessible for European partners, the traditional VET system could become more pressured. But this is by no means the result of an NQF but more the ongoing quest for finding a balance between VET and general education.

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CHAPTER VII

OPEN SESSION TOPICS

The connection of school improvement and school-intern further teacher education in the Canton of Zurich

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Summary: This paper evaluates the interconnectedness between school improvement and school-intern further teacher education at vocational schools in the Canton of Zurich. As studies of school-intern further teacher education in Switzerland in terms of content reveal a great importance of school improvement measures, the question to what extent school-intern further teacher education is used as an instrument by vocational schools in order to achieve predetermined school improvement objectives arises. Moreover, also insights into decision-making processes in practice of school improvement and school-intern further teacher education relating to objectives, measures and attitudes at different management levels (e.g. school governance, quality development management etc.) of vocational schools are given. Finally, the perspective of teachers in terms of whether they think that their professionalism is increased by the determined objectives of school improvement as well as school-intern further teacher education is analyzed and if or how they take them into account when planning their individual further teacher education. So, all in all, the efficiency of school-intern further teacher training as a booster for the target achievement of school improvement is examined.

Keywords: School improvement, school-intern further teacher education

Introduction

In the last two decades, (public) discussions about the quality of schools have arisen repeatedly in Switzerland (and other German-speaking countries), which are not only triggered by the poor results in international comparative studies like PISA, but also reflect new and modified challenges due to increasing educational requirements like a proceeding use of technology and an increasing individualization. Vocational schools, as an important partner in the dual vocational system, are particularly affected by these challenges because of their closeness to firms, which demand a particularly quick implementation of innovations and reforms in order to provide a modern or rather contemporary learning environment for their apprentices.

Supported by the outcomes of former quality research in schools, it became obvious that schools, although having similar legal and organizational conditions, vary greatly in terms of quality (Fend, 1986; Bohl, 2009). Besides, in view of the great variety and differentiating of schools, state-run authorities are simply unable to control all parts of school organizations any longer (Kempfter & Rolff, 2005). As a consequence, a paradigm shift in the German-speaking countries took place and school organizations got suddenly more autonomy in certain areas like for example quality management, budget planning etc. So, today school improvement measures focus merely on the meso level of the educational system – the single school organization itself – and, thus, are able to consider special local characteristics (cf. Eikenbusch, 1998; Rahm, 2005; Hofer, 2011).

Referring to the current state of research in terms of school improvement in the German-speaking countries, most studies only describe the implementation process of school improvement measures, e.g. designing school programs etc., at single vocational schools (Tillmann, 2011). Furthermore, many evaluations or studies both school-intern and external of vocational schools in the Canton of Zurich which the schools are obliged to do by law (cf. Kanton Zürich (Bildungsdirektioe), 2005; cp. *Results: School Improvement in the Canton of Zurich*) are not published. So, in a nutshell most studies rather represent a code of practice for the successful implementation of such measures and no generalized results (Esslinger-Hinz, 2006), which is why a basic theory of school improvement does not exist until today.

In contrast to that, over the last few years various studies relating to the topic of further teacher education were carried out in Switzerland and other German-speaking countries. Most of them were demand-oriented and, thus, focus on the attitude and opinion of teachers towards course offers of further teacher education as well as reasons for attendance or non-attendance (Riedinger, 2010). As a result, it is often criticized that further teacher education is rather unmethodical and even accidental. But as Landert (1999) and Haari (2000) found out, school improvement plays an important role within the school-intern further teacher education in the German-speaking part of Switzerland. According to that, the question of efficiency between both topics arises: Does school-intern further teacher education contribute to the achievement of school improvement objectives? And if so, to what extend?

Research questions

According to the above-described conditions, the following explorative research question are posed:

How inter-coordinated are school-intern further teacher education and school improvement at single vocational schools at the Canton of Zurich? And to what extend does school-intern further teacher education contribute to the attainment of school improvement goals?

These questions are divided into the following sub-questions:

- What are the objectives of school improvement and school-intern further teacher education at vocational schools in the Canton of Zurich? To what extend are these objectives coordinated with each other?
- To what sectors of the school organization can these objectives (school improvement and school-intern) be assigned to (organizational development, personnel development or lesson development)?
- How are the objectives of school improvement and school-intern further teacher education determined? And who is responsible for that? Does a cooperative exchange between the persons in charge exist?
- To what extend do the teachers of vocational schools in Zurich know these objectives? And do they take them into account when planning their individual further teacher education?
- Do teachers believe that their professionalism is increased by the predetermined objectives of school improvement and school-intern further teacher education?
- Is school-intern further teacher training seen as a valuable measure to achieve school improvement objectives on different levels of the school organization?

Methodology

In order to answer the above described research questions, the empirical analysis is divided into different parts.

In a first step, school improvement and school-intern further teacher education documents (concepts, programs etc.) of vocational schools at the Canton of Zurich are analyzed by content analysis (Mayring, 2007). The objectives of school improvement and school-intern further teacher education are classified into different categories according to the constitutive parts of school improvement (Rolff et al., 1998): organizational development, personnel development or lesson development. The objectives of both topics are also analyzed in terms of agreement and whether the school-intern further teacher education objectives contribute to the achievement of the school improvement ones.

In addition to that, qualitative interviews of the extended school governance (headmaster, department managers) and the persons in charge of planning the school-intern further teacher education as well as the quality development management are done in order to detect decision-making processes of both areas in practice. Secondary, also the cooperative exchange between the different parties is investigated. As school improvement measures should directly find expression in improving school instructions for students and not just concentrate on other aspects like the refinement of organizational development of vocational schools, it is particular questioned why the persons in charge decided to choose their fixed, school-centered objectives.

In a third step, a quantitative study of vocational school teachers is made as the opinion and attitude of the teachers who are affected the most by these measures is of special importance.

Results: School improvement in the Canton of Zurich

Before this study is conducted, the following insights were given in conversations with school improvement experts from theory (science) and practice from the Canton of Zurich and Germany:

(Swiss) politics, and due to the federal education policy in Switzerland the Canton of Zurich as well have taken the present situation of school improvement into account by engaging (vocational) schools by law to establish discretely a school-intern systematical quality management, as an instrument of a strategic school improvement philosophy, which consists among other things of a profound quality concept or so-called school program (including quality demands, procedures and methods of quality assurance) (cp. Kanton Zürich (Bildungsdirektion), 2005). In contrast to other German-speaking countries like Germany, such a quality concept, or even the quality management itself, as subordinate parts of school improvement does not necessarily contain the specific school improvement objectives of every school that are identified usually by the school governance and/or the whole teaching staff at the teacher convent. In fact, all vocational schools have school-centered objectives that are set out in different documents. So, in practice quality concepts are often out-dated.

When it comes to school improvement measures, usually the school governance (or headmaster) appoints a so-called quality development management (two to five persons) which coordinates the operative control of all quality assurance and development activities (ibid., 2005). In practice, often a quality team or steering group forms around that quality development management in order to support them. According to the regulations of the Canton, every six years two school-intern evalua-

tions regarding school specific subject matters have to be carried out (ibid., 2005). Additionally, an external evaluation of every vocational school is commissioned by the Canton of Zurich and accomplished by a special governmental evaluation institution (*IFES – Institut für externe Schulevaluation*) every six years.

First results of the former described empirical analyses will be presented at INAP conference.

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The effect of labor market regulations on training behaviour and quality: the German labor market reform as a natural experiment

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Summary: Labor market frictions are seen in many extensions of the classical human capital theory as a prerequisite for firms financing general training. The labor market reforms in Germany at the beginning of the millennium have therefore been seen by many as a danger to the firms' willingness to support the apprenticeship training system. This paper analyzes the training strategies German firms deployed to cope with the greater labor market flexibility as a result of the labor market reform. Switzerland where no reforms had taken place serves as the counterfactual. The results show that firms successfully reduced the net-costs of training by involving apprentices in more work and reducing non-productive tasks, like practicing. Contrary to the widespread fear, this adapted training strategy resulted also in a substantial increase in work-related competencies and productivity of apprentices.

Keywords: Apprenticeship training, difference-in-differences matching estimator, cost benefit, labor market reforms

Introduction

The existence of large scale training systems, like the apprenticeship training system in Germany, where firms are willing to invest considerable sums up-front in the general skills of their employees has been used in the modern training literature in economics as an illustration of the importance of labor market frictions. Inversely, the absence of strict labor market regulations has been used to explain the absence of such firm behavior in Anglo-Saxon labor markets. If such is the case and apprenticeship training systems and tight labor market regulations always come as twins, then of course labor market deregulations would not be without consequences for the firms' willingness to provide training positions. Anticipating the reform agenda of the German government under Chancellor Schroder, the founding fathers of the extensions of the human capital theory beyond Becker, Acemoglu and Pischke feared exactly this, when writing: "...naturally, in practice, increased frictions will have a number of allocative costs, such as lower employment ... [but] in any case, the implications of labor market frictions on training are worth bearing in mind when suggesting labor market reforms. For example, proposals for reducing union power and removing regulations in the German labor market, which are on the current agenda, could have unforeseen consequences regarding the German apprenticeship system, where employers pay for the general training of their workers." (1999b, pp. 548-9). In this paper we analyze the impact of the German labor market reforms at the beginning of the millennium on the training strategies and training quality of German firms in regard of apprenticeship training. In order to be able to assess the causal impact of the

labor market deregulation we make use of the comparison with Switzerland, which has an almost identical training system but has not changed its labor market regulation during the observed period.

Methodology

For our analysis we use four cross-section firm-level surveys about the costs and benefits of the apprenticeship system, two conducted in each country at different points in time (2000 and 2007 in Germany and 2000 and 2009 in Switzerland). Both follow the same set up. The data comprises detailed information on costs and benefits of apprenticeship training as well as firm characteristics for German and Swiss firms. Concerning the methodology the surveys are similar and comparable in almost all aspects. The analyses are restricted to three-year apprenticeship programs since longer programs are not fully comparable between the two countries. The final sample consists of 1,471 Swiss firms and 1,738 German training firms in 2000 and 1,842 Swiss and 2,161 German training firms in 2009 and 2007, respectively.

To estimate the effects of the German labor market reform on training behavior we combine a difference-in-differences approach with a matching strategy, similar to Heckman et al. (1997). Our aim is to estimate the effect of the labor market reform in Germany on training behavior. Therefore, we estimate an average treatment effect on the treated (ATT), where the treatment is the reform and the treated individuals are German firms. The fundamental identification problem is that for a particular firm, we never observe both potential outcomes simultaneously. German firms were all exposed to the reform and therefore the counterfactual outcome without reform cannot be observed. Thus, we have to estimate an average treatment effect on the treated applying matching strategy proposed by Abadie et al. (2005). In a first step, we match to each German firm in the sample 2009 a German firm in 2000 with the same characteristics¹. As a result, each firm in the post treatment period receives a (potential) outcome from the pre-treatment period and, as a consequence, a within country difference over time can be calculated.

To control for time variant differences that are not due to the reform we further apply a difference-in-differences strategy. This means that we also compute the within country difference for Swiss firms applying the same matching strategy and then, in a second step, estimate the difference of the within country differences. Ensuring a balanced comparison group a matching strategy is – again – applied. We match to each German firm in the post treatment period one (or more) similar Swiss firms (from the post treatment period). This is equal to estimating an average treatment effect of the treated (ATT).

Results

Our results show that the benefit apprentices generate to the firm during training increased substantially in Germany, whereas no significant change could be identified in Switzerland. The increase of benefits for an average training year was 2.000 € higher for an average German firm compared to a similar Swiss firm (Table 1). For the whole training period this sums up to more than 6,000 € and represents an increase of almost 25 percent.

¹ Characteristics for the within country matching are firm size, job categories, industry, region. If more than one firm in 2000 with exactly the same characteristics exists, the outcome will be averaged over these firms.

The more detailed analyses show that German firms increased benefits of training by changing the allocation of tasks of apprentices whereas no substantial change in task allocation can be found for Switzerland. German firms increased the share of and the days spend in productive unskilled and skilled tasks compared to Swiss companies. These changes were all at the expense of tasks with no direct value to the firm. The difference-in-differences results reveal that the share of tasks without a direct value to the firm decreased by almost 30 percentage points in the first year of training, whereas the shares of skilled and unskilled productive tasks show an increase each of about 15 percentage points. In terms of working days these results represent an increase in unskilled and skilled tasks of 26 and 25 days, respectively, with an according reduction in days of “non-productive” practicing. For the second and third year of training it was the share of skilled tasks that increased in German firms, whereas unskilled tasks did not change relative to Swiss firms. For the entire period of an apprenticeship the relative change was + 83 days in skilled and + 33 days in unskilled tasks for German firms compared to Swiss firms.

The extensive use of apprentices in practicing instead of productive work has been defended mainly by those fearing that the use of apprentices as “cheap labor” would be in contradiction of the training and qualification goals of apprenticeship training. Although measuring the quality of training is difficult, the relative productivity of an apprentice in skilled tasks compared to a fully trained skilled worker can be used as a valuable proxy for the quality of training. The relative productivity compared to an average skilled worker – as reported by training companies - increased in Germany in all training years in absolute terms and relative to Swiss firms. In 2007/2009 the relative productivity in an average German and Swiss training firm reached comparable levels.

Table 11: Average treatment effect/difference-in-difference estimates

Variable	Coefficient	Std.-Err
Benefit per year per apprentice (in €)	2'075.61	274.71***
Share of productive tasks (unskilled, 1st year)	14.52	1.54***
Share of productive tasks (skilled, 1st year)	14.71	1.46***
Share of tasks with no direct value to firm (1 st year)	-29.44	1.41***
Days of productive tasks (unskilled, 1st year)	25.71	2.53***
Days of productive tasks (skilled, 1st year)	24.61	2.23***
Days of tasks with no direct value to firm (1st year)	-37.38	2.12***
Relative productivity (1st year)	6.82	1.79***
Relative productivity (2nd year)	11.01	1.44***
Relative productivity (3rd year)	5.78	1.39***
Number of Observation 1st year	1133	
Number of Observation 2nd year	1326	
Number of Observation 3rd year	1195	
Number of Observations total	2161	

Note: Matching variables are firm size (exact), job categories (exact) and industry. Standard errors are robust.
*p<0.1, **p<0.05, ***p<0.01

The presented evidence also suggests that learning and (skilled) work are rather joint products and not substitutes and that the involvement of apprentices in the production process can have a positive effect on the acquired competencies of appren-

tices. The positive impact of more work exposure of German apprentices on their productivity is also credible when considering (see Table 1) that non-productive tasks (practicing) were mostly substituted by work requiring skills and not by unskilled activities.

Robustness checks

Germany and Switzerland both have a considerable degree of heterogeneity in apprenticeship training and economic activity within the country. Whereas in Germany it is mostly the East-West and North-South divide, in Switzerland the differences are most pronounced between the language regions (Latin vs. German speaking regions). In order to test, whether the difference-in-differences estimates are affected by this, we run all estimations comparing only the German speaking regions of Switzerland with the two regions (Bavaria and Baden-Wurttemberg) in Germany that border Switzerland. Given the fact that the cross-border economic activities in these regions are very intense, they can be considered almost as one economic area. This implies that with the exception of labor market regulations and other laws, there would not be major differences for other factors like the business cycle or technological progress. When doing the analyses with the reduced sample we get the same results as for the full sample, which backs up the interpretation that the differences in the developments in Germany relative to Switzerland must have been caused by the legal changes in Germany and no other unobserved economic differences.

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Productivity of apprentices: The impact of school-developed key competencies

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Summary: In this paper, we analyze the relation between pre-training competencies of apprentices and individual productivity in the training firm. For our analysis, we use firm-level information on the apprentice's oral and written communication skills, basic arithmetic operations skills, basic knowledge of information technology (IT), and problem solving skills and relate this information to the apprentice's productivity level. Controlling for several sources of individual and firm-level heterogeneity, we find that only higher levels of pre-training oral and written communication skills and problem-solving skills are associated with a higher productivity level of the apprentice.

Keywords: Competencies, productivity, apprenticeship training

Introduction

Being the most important educational pathway in Germany, the apprenticeship system relies substantially on the firm's willingness to offer training vacancies. As firms try to maximize their profits, they are more likely to offer apprenticeship places when they can expect long or short term net benefits from training. While the gross costs of training mainly consist of the apprentice's and the training personal's wages, the benefits result from the productive contribution of the apprentice at the work place. As a result, firms select those apprentices from whom they expect to have a high productivity. However, the characteristics of productive apprentice are not a priori clear. As general education is supposed to prepare students for the working life, the question arises whether and in which way different school competencies relate to the working productivity. If firms cannot find school graduates from whom they can expect a sufficient high productivity, they might cease to offer training vacancies. If educational policy wants to ensure the willingness of firms to provide training vacancies, school graduates have to be sufficiently prepared for an apprenticeship. To improve the training preparation in school and provide a basis for the determination of the high school curricula, a detailed knowledge of the interrelation between school competencies and productivity at the work place is indispensable. Human capital theory suggests that productivity at the work place is determined by the employee's previous education (Becker 1964), which is confirmed by several empirical studies (Angrist & Kruger, 1991; Mincer 1974). To rule out a mere signaling value of education, several studies analyzed the relation between school competences and income, which serves as a proxy for productivity, but found only a weak relation (Altonij 1995; Levine & Zimmerman 1995; Joensen & Nielson, 2009). The effect of school competencies on the productivity during the training period is even less clear as occupations are rather practical and often manual. While school grades seem to be a good indicator of success for the theoretical part of the apprenticeship training (Baron-Boldt et al. 1988) the role of school competencies in the practical part of the appren-

ticeship is not yet clear. Instead, qualitative aspects of the training itself and firm characteristics might determine the apprentice's productivity (Stamm et al. 2010) and even compensate low school grades of trainees (Büchel 2002; Bertschy et al. 2008). As there seems to be void in the literature, we address, in this paper, the question of whether different levels of school knowledge, i.e., the level of oral and written skills, basic arithmetic operation skills, knowledge in IT, and problem-solving skills, have an impact on the productivity at the apprenticeship place, while controlling for several firm-level and apprentice-specific factors.

Methodology

Data: The data source for our paper is a representative survey of German training firms asked about the cost and benefits of apprenticeship training conducted by the Federal Institute for Vocational Education and Training (BIBB) in the year 2008. As our analysis refers to apprentice-specific characteristics but firms training more than one apprentice can only supply averages for all apprentice, we reduce the sample to firms training only one apprentice and turn firm-level information into quasi individual-level information. After dropping observations with missing values and deleting observations, when it was obvious that the interviewed person could not have known the apprentice personally at the beginning of the training period, due to the respondent's low tenure, 1163 training firms as the data base for our analysis remain.

Variable Construction: Our dependent variable is a measure of absolute productivity of the apprentice *during* the training period. Trainers have to compare the apprentice's productivity to the productivity of the firm's average skilled worker in the (training) occupation and provide a value between 0 and 100. As the productivity of a skilled worker can be very different in different firms, we multiply the relative productivity of the apprentice with the average gross wage per month of a skilled worker in the same area of occupation, i.e. technical, commercial, or industrial to obtain an absolute productivity value. In the regression analysis, the dependent variable is the logarithm of the absolute productivity¹. The main explanatory variables are the trainer's subjective evaluations of the apprentice's *pre-training* competencies². The assessed competencies are *written and oral communication skills, basic arithmetic operations skills, basic knowledge in information technology (IT) and problem solving skills* and are measured on a scale from 0 (=very poor) to 4 (=very good).

Estimation procedure: We run an OLS regression of the absolute productivity on the various competencies and add several control variables. As the time sequence of productivity and competencies is implied by the phrasing of the survey questions, i.e. before and during the training period, the influences of unobserved heterogeneity can be restricted to two main mechanisms (apart from measuring error) that could blur the result of a bivariate regression. First, it is possible that the allocation of school graduates to different types of training firms is not random but underlies systematic mechanisms depending on the graduate's school competencies. If graduates with high school competencies sort into firms with a high wage levels and effective training strategies, the bivariate result would be distorted. As control factors, we, therefore, include the apprentice's wage, the firm's retention strategy, and the occupation in the equation. Second, we suspect that the apprentice working behavior, correlating with both productivity and school competencies, presents a source of endogeneity. Hence, we control for work motivation and independence.

¹ Because three observations have the value of zero they are dropped for the regression analysis.

² In this summary, skills and competencies are used as interchangeable.

Results

Because of the high multicollinearity between the four competencies, we ran four separate regressions with each regression containing one type of competency. Table 1 presents the results from the analyses, with each column including a different competency as the explanatory variable, which is displayed in the column headings. The results show that all four competencies relate in a different way to the current productivity. In contrast to arithmetic skills and IT knowledge, oral and writing, and problem solving skills relate significantly to productivity. An increase of oral and writing skills (problem solving skills) of one unit is related to an increase of productivity of 5.1 (7.1) percentage points¹. That implies an increase of 28.4 percentage points when the problem solving skills improved from the poorest to the best evaluation. Basic arithmetic operations skills are insignificant after including the control variables showing that competencies in arithmetic operations themselves do not enhance productivity. Note that this result may be due to a selection effect. As the math grade is often used as a recruitment criterion, the math knowledge of those school graduates, who obtained an apprenticeship, exceeds a minimum level. Knowledge of arithmetic operations above that threshold does not necessarily lead to a higher productivity in rather practical occupations.

Table 1: OLS Regression: Logarithm of productivity as the dependent variable

VARIABLES	(1)	(2)	(3)	(4)
	Oral and written skills	Arithmetic operations skills	Basic IT knowledge	Problem solving skills
Competencies	0.0510** (0.0242)	0.0257 (0.0225)	0.0261 (0.0281)	0.0710** (0.0306)
Ln(wage/100)	0.512*** (0.0796)	0.514*** (0.0799)	0.514*** (0.0841)	0.523*** (0.0796)
Always retain apprentices	-0.0346 (0.0555)	-0.0364 (0.0557)	-0.0497 (0.0592)	-0.0357 (0.0559)
Sometimes retain apprentices	0.00621 (0.0627)	0.00156 (0.0624)	-0.01000 (0.0665)	0.00325 (0.0626)
Independence	0.0561* (0.0302)	0.0690** (0.0303)	0.0658** (0.0317)	0.0388 (0.0340)
Work motivation	0.0323 (0.0326)	0.0315 (0.0327)	0.0339 (0.0341)	0.0247 (0.0318)
Constant	3.521*** (0.512)	3.540*** (0.515)	3.523*** (0.538)	3.468*** (0.513)
Observations	1,160	1,160	1,081	1,160
R-squared	0.214	0.211	0.209	0.216

Moreover, table 1 shows that the variable independence relates significantly to the current productivity even for constant school competencies. Only when the equation controls for solving skills the variable independence is not significant. This might be due to a high correlation between problem solving skills and independence. The results show that also after controlling for possible sorting mechanisms and apprentice-specific characteristics such as work motivation and independence, a significant relation between oral and written skills (problem solving skills) and productivity is evidenced. Even though we still cannot exclude the influence of unobserved heterogeneity such as innate ability, the comparison between the coefficients suggests that there must be an additional influence of the two competencies itself. Assuming that innate ability has the same effect on all four competencies, the difference between

¹ We also controlled for firm-size, region (West- or East Germany), the existence of a work council, and economic branch as possible reasons of sorting. However, the results remain nearly the same with a significant coefficient for language skills and problem solving skills of 0.050 and 0.072, respectively.

the math coefficient and the, e.g., problem solving coefficient, could be attributed solely to the problem solving competencies. We can furthermore show that the relation between competencies and productivity is not transmitted by a different training strategy depending on the trainee's competencies. In order to rule out this mechanism, we control for the training strategy, which we divide in training quality and training organization. For training quality, we use the amount of hours an apprentice is supervised by a trainer. For training organization, we add variables on the time spent with skilled and unskilled productive tasks and other learning activities. Even after controlling for the training strategy, the results remain remarkably similar. That suggests that the relation detected in the previous regression is mainly based on the fact that certain competencies can directly be applied at the work place.

Robustness checks

As a robustness check, we add control variables that should rule out the influence of systematic measurement error. As the assessment of the school competencies is a subjective evaluation of the trainer referring to a situation at the longest three years before the time of the survey, deviations from the "real" competencies are possible. As long as those deviations are random, a lacking accurateness does not necessarily spur the estimate. However, when the deviations are systematic we have to control for them. As respondents become more likely to anchor their assessment on the current productivity with higher training years of the apprentice, we add the training year as a further control variable. The school leaving certificate is also included as the respondent's expectation of the competencies might depend on the apprentice's previous schooling. The results reveal that the discussed deviations are not systematic as the coefficients of the competencies do not change substantially (Robustness-checks are not shown here as their results do not differ substantially to the presented model) As the dataset is restricted to firms with only one apprentice, one might argue that the detected relation does not exist in the representative sample. Therefore, we run the same regression analysis with the overall sample. Apart from the fact, that, on average, the sizes of the skill coefficients are slightly lower, the results are the same. That is, only oral and written skills and problem solving skills are associated to the productivity. The lower height of the coefficients can be explained by the fact that the within-firm variation is not represented in the average evaluation of the apprentices.

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Case study on cost, benefit, and quality of apprenticeship project in China

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Summary: The paper applies the QEK tool to cost-benefit-quality analysis of a cooperative pilot project on Modern Apprenticeship launched by Guangzhou Technician Institute. The Chinese research project manifests that with the integration of a high degree of learning in the workplace, independent learning, learning in work process and a low degree of professional level of training, both the enterprise's economic benefits and the staff's developing demands could be satisfied. Despite of limitation on the apprentices' professional competence development, it can ensure that both the professional competence and the occupational commitment are on a medium level and above.

Keywords: Cost-benefit analysis, quality-measurement, apprenticeship

Introduction

This paper carries out research on solving the difficulties with which the school-enterprise cooperation in Chinese VET system is confronted against the background of international modern apprenticeship development. Since 2010, Guangzhou Technician Institute and Guangzhou Machine Tool Works Co, Ltd have launched a cooperative pilot project of cultivating technicians by means of modern apprenticeship. This 3-year project deals with CNC machine tool assembly and maintenance, and it enrolls 28 students, all of whom are college graduates or enterprise staff already certificated as senior skilled workers. During three years, the apprentices are supposed to have an on-site training hour that is equal to 89% of a skilled worker's working hours; they have 0.5-1.5 days of school learning and 4.5 days of on-site training in a week. From the second year on, the apprentices become the enterprise's regular employees by signing labor contracts with the latter, and then they enjoy the same salaries and benefits with other staff in the enterprise. Having finished all the courses and practice, apprentices are to be appraised by the school and the enterprise together. Once they pass Guangzhou Enterprise Appraisal of High Skilled Talents, they are to receive the Technician Institute's graduation certificate of CNC machine tool assembly and maintenance as well as the Technician Certificate of this profession.

Methodology

QEK Tool is a network tool used by enterprises to self-evaluate the cost, benefit and quality of apprenticeship. It is developed by the project "Innovative Apprenticeships 2010" of University of Bremen, Germany. The original QEK tool is divided into 3 sections: Section A: company details. Section B: costs and benefits analysis. The cost in calculation includes the costs of trainers, trainees, operation and others. The benefit refers to the enterprise's economic returns from the apprentices' production work, which is the cost that the enterprise should pay to other skilled workers if it do not hire the apprentices. It is calculated as follows: the training time of an apprentice ×

apprentice's productivity (compared to a skilled worker) × the salary of a skilled worker. Sections C:quality assessment, it includes two dimensions (Quality of professional competence development and Quality of training process) on the base of six different quality criteria (Rauner et al, 2010). They are Occupational commitment, Professional competence, Learning in the workplace, Professional level of training, Learning in work processes, Independent learning. According to China's actual situation, the improved QEK tool retains the six quality criteria and the calculation method of training benefit, but the cost criterion has been greatly changed, as shown in the table 1 below:

Table 1: Cost calculation index of QEK tool in China's Case

Level indicators	Secondary indicators	Sub-indicators
Cost of the trainees	Training allowance	Base pay; Efficiency wages and bonuses; Position wages.
	Statutory social security	Five social insurance and one housing fund
	Voluntary social security	Accommodation subsidies, food subsidies
Cost of the trainers	Full-time personnel training cost	
	Part-time personnel training cost	Part-time trainers; On-site masters.
	External personnel training cost	
Operation cost	Personnel administration	
	Training management	
Other costs	Training materials, appliances, etc.	Study materials fee, training site fee, etc.
	Professional and protective clothing	Work suits, safety shoes, etc.

Results

Net benefit and benefit-to-cost ratio

The total cost of apprentice training per capita for 3 years is 94,182 Yuan (annual cost per capita is 31,394 Yuan); the total benefit per capita is 103,588 Yuan; the total net benefit per capita is 9406 Yuan; the total benefit-to-cost ratio is 1.1.

Table 2: Net benefit and benefit-to-cost ratio

	The 1 st year	The 2 nd year	The 3 rd year	Total	Annual average
Per capita benefit each year	24352	38401	40836	103588	34529
Per capita cost each year	18645	37837	37700	94182	31394
Per capita net benefit each year	5707	564	3136	9406	3135
Benefit-to-cost ratio	1.31	1.01	1.08	1.10	1.10

According to the data of the three years, the net benefits remain positive. Among them, the first year's net benefit is the largest (5707 Yuan), and its benefit-to-cost ratio is the highest (1.31); the second year's net benefit is the smallest (564 Yuan), and its benefit-to-cost ratio is the lowest (1.01); both the net benefit and the benefit-to-cost ratio of the third year remain on an average level (3,136 Yuan, 1.08).

International experiences show that in those countries implementing modern apprenticeship, the first year's net benefit generally remain negative (the benefit-to-cost ratio is less than 1), and is less than those of other years. The China's case in research, however, is just the opposite - not only the first year's net benefit is positive,

and the benefit-to-cost ratio (1.31) is the highest. This falls into the following reasons: 1) The apprentices have acquired the relevant vocational certificates of senior workers and/or college certificate diplomas. With such high education background and vocational qualification, they can reach the level of skilled workers in a short time. 2) The apprentices do not sign their labor contracts with the enterprise, so the latter can offer them lower or even no allowances and benefits like basic salaries, social security and others. The statistics shows that the cost of the trainees accounts for about 90% of the total cost. Therefore, the low cost of the trainees in the first year and the apprentices' rapidly growing productivity result into a relatively high net benefit and benefit-to-cost ratio.

Quality diagnostics

Table 3 contains the overall data of quality diagnostics, with 1 to 5 representing different degrees, among which 5 = excellent, 4 = good, 3 = not so bad, 2= bad, and 1= very bad.

Table 3 Scores of quality diagnostics

Dimensions	Criteria	The 1 st year	The 2 nd year	The 3 rd year	Average values	Average values of dimension
Quality of training process	Learning in the workplace	4.5	4.8	5.0	4.8	3.9
	Professional level of training	1.9	2.5	3.3	2.6	
	Independent learning	2.8	4.5	5.0	4.1	
	Learning in work process	2.8	4.5	5.0	4.1	
Professional competence development	Professional competence	3.0	3.2	4.0	3.4	3.6
	Occupational commitment	3.6	3.5	4.3	3.8	
Average score each year		3.1	3.8	4.4	3.8	3.8

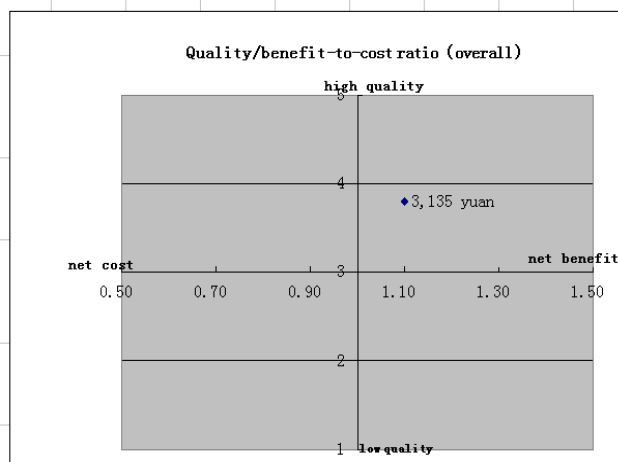
The criteria with the highest scores are: learning in the workplace (4.8), independent working and learning (4.1) and learning in work process (4.1); while the criteria with the lowest scores are: professional competence (3.8) and occupational commitment (2.5). The table on quality diagnostics shows that:

- The trainees' development of professional competence and occupational commitment is in the mid to upper level, but does not reach the degree of 'good', leaving space for further improvement.
- This learning system pays great attention to learning in the workplace, independent learning, learning in work process, but the professional level of training needs improvement.
- The limitation of competence and commitment development is due to the low professional level of training tasks arranged by the enterprise, because only participation and independent completion of professional tasks can ensure the professional competence development (Rauner et. al 2010) .

The comprehensive scores of the three years are: the first year is 3.1, the second year is 3.8, and the third year is 4.4. The quality increases year by year, and the criteria with fastest growth and largest increase are learning in work process and independent learning, while the occupational commitment have unsteady development.

Comprehensive analysis of quality, cost and benefit

Figure 1 Quality/benefit-to-cost ratio (overall)



If quality, benefit and cost are bought together, the balance point of benefit-to-cost ratio and quality is (1.10, 3.8), which is in the (net benefit, high quality) quadrant. The balance point of benefit-to-cost ratio and quality of the three years are: (1.31, 3.1), (1.01, 3.8) and (1.08, 4.4), all of which are in the (net benefit, high quality) quadrant, with quality increasing year by year and net benefit developing in a curve line. The first year's net benefit is the highest, that of the sec-

ond year is nearly equal to the cost, and that of the third year increases again. The reasons for this include: 1) In the first year, the apprentices do not sign labor contracts with the enterprise, thus receiving no basic salaries and social insurance, so the cost is the lowest and the net benefit is the highest. 2) In the second year, the apprentices become regular staff of the enterprise, who enjoy the same treatment with other technicians and have almost the same productivity; therefore the cost and the benefit are nearly equal. 3) In the third year, the apprentices' productivity has surpassed other skilled technicians in the enterprise, which brings more benefit to the enterprise. The result manifests that modern apprenticeship realizes a benign balance among the quality, cost and benefit in contemporary China. Under specific conditions, the quality of apprenticeship can take both the objective of the enterprises' economic benefit and that of VET personnel training quality into account. To solve the contradiction between the economic benefit of the enterprise and the learning demand of the apprentice, we need to satisfy four demands of the criteria including learning in the workplace, independent learning, learning in work process and professional level of training. The case shows that if we integrate a high degree of learning in the workplace (4.8), independent learning (4.1), learning in work process (4.1) with a low degree of professional level of training (2.6), we can: 1) satisfy both the need of the enterprise's benefit and the apprentices' demand, and the annual net benefit per capita can reach over 3,000 Yuan; 2) basically guarantee that the apprentices' professional competence (3.4) and occupational commitment (3.8) are on a mid to upper level (3.6), although their professional competence development is limited to some extent. This indicates that during the training process, with 3 criteria satisfied but one unsatisfied, even if the enterprise's economic benefit are guaranteed, the training quality of the apprentices are not taken into account at the same time. The professional level of training has a profound influence upon the professional competence of the apprentices, and it is mainly influenced by the training mode of the part time personnel of the enterprise, the organization form of the workshop production and the degrees of comprehension and difficulty of the consequent tasks.

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