

Michael Gessler & Larissa Freund (Eds.)

Crossing Boundaries in
Vocational Education and Training:
Innovative Concepts for the 21st Century
Conference Proceedings



Evaluate Europe
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Volume 6

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Institute Technology and Education / Institut Technik und Bildung (ITB)
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Introduction

Boundaries defining and shaping the field of Vocational Education and Training (VET):

Systems: Socio-culturally different VET systems have evolved along conceptual lines. The comparison of different skill formation systems and governance of VET systems are on the one hand of reflexive and on the other hand of practical importance in the context of international economic development and cooperation. The comparison allows for the identification of strengths as well as areas of improvement and recognising gaps. In a comparative perspective with regards to the current state as well as the necessary/possible developmental directions for the respective systems, what can we apply to the challenges of the 21st century?

Institutions: Formal and informal regulatory systems have formed within the different VET systems. These are not only an expression of professionalisation but also show the system boundaries and interfaces that are alike. In these inter-institutional spaces lie ever increasing innovation potentials: What rules have been established? How do the organised division of labour institutions interact? Which cooperations and what transitions were made possible or would be needed? What solutions have been developed and what rules would be required that are different from the previously established approaches?

Practices: In the institutions or systems of rules, practices have been established to cope with the central questions of teaching, learning, and competence development. Practices are constrained by the boundaries of the institution (intended practices), but also new practices (emerging) occur at this level that are both rule bound to the institutional boundaries and transcend them to create their own and original area for innovation. What are the different formal and informal practices, how do they relate to each other, and what developments are evident for the 21st century?

The three levels are influenced by conceptual ideas, terms, and constructs. How do these conceptual ideas take shape, what are their boundaries, for what background are they valid, what are the underlying assumptions, what developments are evident, and which are fit for the future requirements of the 21st century? Both formal and informal learning occur at the level of skill formation systems, for example, the concept of 'collective and school-based VET systems', at the level of the institutions, for example, the concepts 'competence-based education' and 'school-to-work transition', and on the level of practices, for example, 'problem-based learning' and 'technology-enhanced learning'.

This issue introduce 40 research papers from more than 20 countries which have been presented on the International VET-Conference *Crossing Boundaries in Vocational Education and Training: Innovative Concepts for the 21st Century* from 2nd - 4th of September 2015 in Bremen. We thank all presenters for their contributions. Our special thanks go to our Co-Organizers and the financial sponsors: International Research Network in Vocational Education and Training (IRNVET), European Research Network in Vocational Education and Training (VETNET), the Chamber of Commerce, Bremen, and the Central Research Promotion Programme of the Rectorate of the University of Bremen.

Michael Gessler & Larissa Freund
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Institute Technology and Education /
Institut Technik und Bildung (ITB)

Session 1

**Concept and Practice of Design Based Research: Arena of Innovation,
Task-Oriented & Multimedia Based Learning and Trans-Sectoral Quali-
fications**

Work Learning in Small and Medium Sized Enterprises: A Case of Implementation ECVET Provision in SMEQUAL European Project

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Abstract: The SMEQUAL Project is based on the priorities stated by the EU in the field of Lifelong Learning Programmes related to ECVET, EQF and EQAVET application. The project aims to improve the quality of trans-sectoral training systems for SMEs, by incorporating the ECVET provisions foreseen in the Recommendation of the European Parliament and the Council establishing the ECVET system. The project will analyse the existing experiences and good practices in designing trans-sectoral qualifications for the SMEs, in units of LOs and with the attribution of ECVET points. It will develop the European Handbook for the Learning Outcomes (LO)-based Qualifications for SMEs, which will include operational methods and guidelines for defining trans-sectoral learning outcome-based qualifications for the SMEs. On the basis of the analysis results and while taking into consideration the current practices and needs of the SMEs' VET programmes, the Consortium will design the European Handbook.

Bibliographical notes:

Dr. Giuditta Alessandrini is a full professor of social and work Pedagogy and President of degree course in educational science in the Department of Science of Education at the University of Roma Tre, in Italy. Her research interests focus on educational processes, life long learning and HR professional qualification.

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1 The Issue of Competence

Competence is the ability of people to put together knowledge, interpersonal skills, know-how, and attitude, realising not only controllable performance, but also intentionality towards goal development that can be their own and their organisation's. In other words, it's planning skill into concrete action, both observable and unobservable ("knowledge in action").

It must be considered undoubtedly a significant step forward in relation to a wide path now – although uneven – which has finally given in recent years concreteness to a theme consolidated both on a national and European level. Then it encoded with the European Council recommendations on December 20th, 2012 (2012/C 398/01) in terms of knowledge validation, skills and competencies acquired through non-formal and informal learning.

The "competence" issue is currently available in both pedagogical and psychological literature that is very wide and varied. But now it's necessary to deal with the devices ECVET and EQF, beyond theoretical and basic approaches, combining a conceptual representation in European documents shared with the domain for experimentation and research. The "qualification" is the aim of validating a formal process of results obtained from a person with precise standards.

Some studies (see the PIAAC project, for example) highlight training and its positive impact on workers carried out in the workplace (workplace training). Informal learning contributes to competence construction, while the latter loss and decline can undo all benefits derived from previous education and training paths also in quality. It would be a limit of human capital valuation not to consid-

er the informal learning area, according to OECD, but only results and formal education and training outcomes.

A significant step was taken in the direction of transition-desirable scenarios: job training from the Europe 2020 document (European Commission, 2011). As revealed from a recent survey sponsored by the Ministry of Labour, projections of 2020 on supply and labour demand show that our country is likely to be unprepared for upcoming changes in the labour market. On the first side, the demand for labour and the research of the European Centre for Vocational Training Development (CEDEFOP) ask a clear trend towards a knowledge economy and services, they will need more and more skilled workers.

Therefore, adult learning is found in the heart of active welfare and understood as an integral part of a new cultural framework that helps to build the subject himself (self-engagement).

From the point of view of vocational training scenarios, it is necessary to grasp the following items as areas in which to invest training systems and pedagogical reflection on both theoretical and policy solutions. It mentioned very briefly here:

- a. the development is subject to a system that allows extensive and detailed mapping and recognition of competences, not only from the point of view of the technical and specialist level (theoretical knowledge, knowledge in action), but also from the standpoint of the relational and ethical level (note: knowledge sharing, reciprocity, trust and responsibility);
- b. the career guidance development can support opportunities for youth employability (mapping of competence, assessment, coaching, individual interview) from a perspective of lifelong guidance;
- c. the training programme development for adults relates to transitions to work, which can affect his life, considering professional experiences mixed with experiential learning;
- d. the training programme development in work contexts for the growth of human capital present in the latter (work-based learning). These paths can pass through new participatory work development, encouraging individual and collective experiences of cultural and professional growth.

The project sets the following concrete objectives:

- a. Analyse the existing experiences and good practices in designing trans-sectoral qualifications for the SMEs, in units of LOs and with the attribution of ECVET points.
- b. Develop the European Handbook for the Learning Outcomes (LO)-based Qualifications for SMEs, which will include operational methods and guidelines for defining trans-sectoral learning outcome-based qualifications for the SMEs. On the basis of the analysis results and while taking into consideration the current practices and needs of the SMEs' VET programmes, the Consortium will design the European Handbook. It will include operational guidelines and methodologies for defining trans-sectoral qualifications in terms of learning outcomes and with the attribution of ECVET points, according to ECVET technical specifications. The Consortium will also provide operational procedures and devices for the assessment, transfer, validation and accumulation of learning outcomes achieved in formal, informal and non-formal contexts.
- c. Test the European Handbook for the Learning Outcomes (LO)-based Qualifications for SMEs on a qualification prototype: HR Planning & Recruitment Expert. The handbook will be tested in three partner countries through the definition of a 'qualification prototype': HR Planning and Recruitment Expert, on the basis of the handbook.
- d. Define and test quality standards for the ECVET implementation within trans-sectoral SMEs' qualifications.

The project which will end in October 2015 during a final meeting in Rome has eight WP.

The communication will briefly describe achievements:

- a description of HR qualifications;
- the result of the piloting phase made at the University of Roma Tre with the collaboration of partners;

- the handbook product will be a tool to implement the European strategy ECVET. VET providers and universities will benefit from further implementing the handbook in (re)designing trans-sectoral qualifications for SMEs, and related VET programmes, which will guarantee the relevance to the labour market and will facilitate employee/learner mobility across Europe.

The project will analyse the existing experiences and good practices in designing qualifications for SMEs in Belgium, Italy and Poland.

It will develop the ‘European Handbook for the Competence-based Qualifications for SMEs’, which will include operational methods and guidelines for defining professional qualifications for the SMEs. Moreover, it will test the ‘European Handbook for the Competence-based Qualifications for SMEs’ on a qualification prototype: HR Professional. The project will define and test quality standards for the ECVET implementation within SMEs’ qualifications.

The project also includes a piloting phase which has been aimed at collecting direct feedback and suggestions from local and national stakeholders: university students in three different countries (Belgium, Poland and Italy) achieving excellent results.

2 The European Handbook

The final objective pursued by the Consortium is to reach external stakeholders and to create a network in order to guarantee the usability of the handbook (even after the project’s lifetime) by training providers and organisations within the ET for SMEs. Supported by the creation of the network, all potential stakeholders will be assisted in approaching the “European Handbook for the Learning Outcomes (LO)-based Qualifications for SMEs”.

The goal is to make the “European Handbook for the Learning Outcomes (LO)-based Qualifications for SMEs” like a common instrument consultable not only by experts but also by all interested in QA in VET. Following this vision, in addition to the “European Handbook for the Learning Outcomes (LO)-based Qualifications for SMEs”, a set of guidelines will be provided in order to facilitate the effective use and implementation of the handbook in different countries and by different stakeholders. These guidelines will represent an integrative tool, conceived to assist stakeholders in using the handbook in their organisations, in line with a perspective of sustainability and exploitation of results.

The qualification is defined by legible and understandable learning outcomes, i.e. statements of what a learner knows, understands and is able to do on completion of a learning process. The learning outcomes are categorised into knowledge, skills and competences (competence can be described in terms of responsibility and autonomy). Separate verbs should be used to differentiate knowledge, skills and competences.

It is important to underline that this qualification has been designed through a collaborative working process with the involvement of: VET providers, HEIs, Trade Unions, SMEs Association, and the Research Centre in the field of HR and organisational development.

The main input and criteria taken into consideration were:

- The results of the needs analysis conducted at the beginning of the project by the partners
- The analysis of the possible role that the qualification holder could play in the SMEs
- The real needs of SMEs regarding HR

3 Definition of HR Professional and Units

The Human Resource (HR) professional works in the field of human resources management and development for SMEs: he supports the development and implementation of activities relating to staff management within an organisation.

The professional’s aim is to ensure that the organisation employs staff with the appropriate competencies and that training and professional development opportunities are made available for employees to enhance their performance and achieve the employer’s business aims.

The HR professional is involved in a range of activities required by the employer, particularly by SMEs, irrespective of the field of business activities. These activities cover areas such as:

- Enterprise organisation (internal structure and organisational development);
- HR management (payments, administration, compliance with national labour contracts/industrial relations);
- HR development (training, professional career paths);
- HR planning (identifies current and future human resource needs for an organisation to achieve its goals);
- Recruitment of staff (attracting, screening, selecting and onboarding qualified persons).

The HR professional qualification includes five Competence Units: Organisation, Management, Development, Planning and Recruiting.

A unit is a component of a qualification, consisting of a coherent set of knowledge, skills and competence that can be assessed and validated. Units enable progressive achievement of qualifications through the transfer and accumulation of learning outcomes. They are subject to assessment and validation, which verify and record that the learner has achieved the learning outcomes expected. Depending on the existing regulations, units may be common to several qualifications or specific to one particular qualification. Units are accumulated based on the requirements to achieve qualifications. These requirements may be more or less restrictive, depending on the tradition and practice of the qualifications system and the way in which qualification standards are designed. Units can also be used to structure the formal education and training programme.

Specific core and additional competences are:

- Supervise communications, particularly those related to staff management, within a specific organisational framework;
- Evaluate internal staff assignment on the basis of specific guidance, and formulate proposals for improvement in the field of HR management;
- Support the definition of job descriptions and job profiles and required competencies, and suggest learning opportunities for professional development, on the basis of internal organisational rules;
- Propose advertising of vacant positions, screening applications, ensuring that applicants are evaluated on the basis of their qualifications and that recruitment standards are fair (and ready to help in the selection of the best-qualified applicants), and preparing employment contracts.

As additional competences, it is possible to include general competences such as organisational development, project management principles, and HR planning concepts and techniques, and specific competences such as administrative, legal, and marketing.

The framework of the ECVET Units of LOs piloting phase and details about methodology are introduced in the SMEQUAL European Handbook (www.smequal-project.eu).

The following European Project partners are: University of Roma Tre (applicant and coordinator of the piloting phase), Effebe Association (finance and banking association), CONFAPI (Italian Confederation of Small and Medium Enterprises), AIDP (Italian Association for Human Resources Management), EUROCADRES (European-wide Manager and Professional Organisation), PAIZ (consulting), and IFB (Portuguese Bank Training Institute).

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Discovering (Hidden) Pathways within the Framework of Design-Based Research (DBR) – Developing an ‘Arena of Innovation’ in VET Contexts

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Abstract: This contribution focuses on a specific interpretation of Design-based Research (DBR). From a methodological perspective it deals with the challenges and potentials of developing pedagogical innovations in cooperation with practitioners within the VET context. In a first step we want to define the particularities of so-called *Arenas of Innovations* (AoI) as a cooperation platform and research field. In a second step we intend to give an insight concerning the underlying design-based case study that serves as a basis for deeper explanations. As a third step we want to discuss the role of prototypes and their development for the research process as well as the reception of prototypes by the involved practitioners and its linked methodical impact. The paper closes with a brief statement concerning requirements, challenges and potentials for a researcher in AoI.

Bibliographical notes:

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Dr. H.-Hugo Kremer is a full professor at the Department of Business and Human Resource Education at the University of Paderborn, Germany. His research interests focus vocational education, competence development, pathways from school to work, media based learning, design-based research.

1 Arenas of Innovation (AoI) as a specific interpretation of DBR

It is almost characteristic for innovations within the VET context (for example the German Lernfeldkonzept, the consideration of personalized learning or inclusion etc.) that their differentiation and adoption find themselves shifted to a level where the pedagogical and didactical day by day life takes place (Ertl and Kremer, 2010). Accordingly, actors in vocational schools have to face more and more often the challenging task to design innovations: This is realised by a process of implementing and developing concrete learning materials, organizational infrastructure, curricular integration etc.

From a researcher’s point of view, there are different approaches for science to take part of such innovative processes. From a scientific point of view they can have different forms and functions. The present contribution focuses on DBR as a methodological approach of dealing with practitioners’ problems on the one hand and providing a research field for science on the other hand.

There are different interpretations of DBR (a. o. Brown, 1992; Euler, 2014; Sloane, 2007, 2014; Kremer, 2014). What they have in common is the objective to deal with practical educational problems by developing innovative solutions (Euler, 2014). Nevertheless, by this rough definition some

questions are not yet answered or responded in various ways (Kremer, 2014), for example:

- What role does theory play? Is a complex theoretical basis needed for an innovative development or can the design process itself be understood as a way to gain knowledge?
- What is the significance of the innovative product to develop and its appendant design process?
- What role do the involved actors (scientific members and practitioners / teachers) play? Researchers, designers, implementing actors? Are combined roles possible?
- How can the design-process become a part of the research process? What methodical procedures are appropriate?
- Which aspects can be considered as criteria of quality for the overall research programme?

The present work is based on an understanding of DBR that can be concretised as follows: DBR is an approach that brings researchers and practitioners together in order to solve problems occurring within the context of pedagogical day-to-day practice settings (Sloane, 2014, 2007, 2005; Kremer, 2014). Therefore the different forms of collaboration that are possible have to be taken into account: As one option it is possible to provide a common space between practice and science: So-called *Arenas of Innovation* (AoI) can be seen as an inter-space between science and practice (Kremer, 2014). This arena is where the development of innovations or *didactical prototypes*¹ takes place – accompanied, guided or even in cooperation with researchers (Kremer, 2014; Sloane, 2007). Didactical prototypes can be described as an innovative artefact in order to cope with previously spotted practice problems. The prototype can occur and be designed in a wide range of development stages (theory-based, field-tested, implemented in practice, transferred to further fields etc.). It contains the developers' concepts and theories (scientifically-based or based on subjective concepts and theories). Furthermore, it builds the basis for communication and exchange within the actors of the AoI. Testing phases followed by phases of re-designing – which are mainly based on the practitioners' response – characterize the iteratively arranged core procedure (Frehe, 2015; Kremer, 2014).

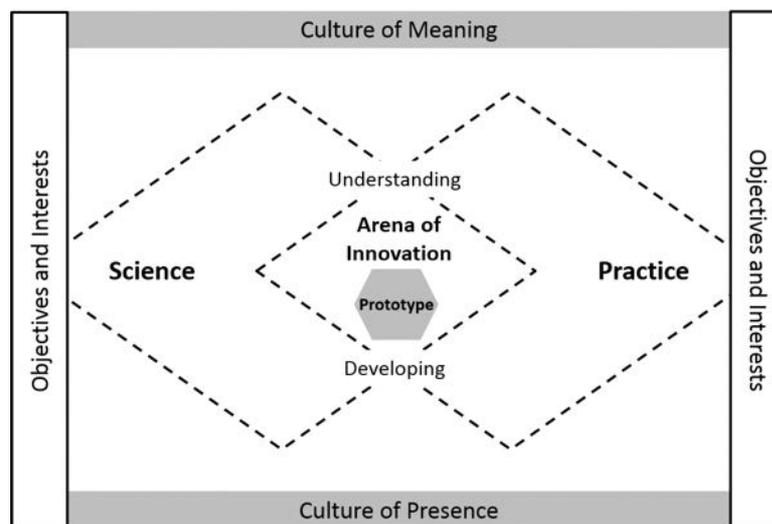


Figure 1: Arena of Innovation (Kremer, 2014)

¹ DBR refers to engineering science (Reinmann, 2007): „The engineering approach to research is directly concerned with practical impact – understanding how the world works and helping it “to work better” by designing and systematically developing high-quality solutions to practical problems.” (Burkhardt and Schoenfeld, 2003). Against this background innovations developed within DBR programs are often called *prototypes*, in order to outline its status in a developing process and the consideration of the practitioners' respond. To emphasize the pedagogical background, in this paper the term *didactical* prototype is used.

Considering that both researchers and practitioners act within the scope of the specific paradigms of their own professional environment (e.g. vocational school, scientific community), they also carry along specific objectives and interests referring to the (development of the) didactical prototype (Sloane, 1992). Accordingly, the prototype might also contain different meanings for both groups and be received differently (see figure 1). Correspondingly, from the researcher's perspective it could be insightful to not only consider the activities in the AoI but also to take into account the realization of the prototype in the different VET practice settings and to try to understand them, for instance by using reconstructive methods. To be able to do so, the researcher has to develop adequate methods of documentation and collecting data (Kremer, 2014).

2 The underlying design-based case study: Introduction and background

In the underlying case study (Frehe, 2015) the gaze is directed at the challenges teachers in vocational schools face in the so called German *Übergangssystem*. Next to the famous dual system and the full-time school-based field, this sector becomes more and more important in the field of German VET. In the here located educational courses you can find those young people, who did not (manage to) enter the working world (apprenticeship or other forms of employment) at the first attempt. The reasons for this phenomenon are as various as the youths themselves entering this special VET sector: It can be caused by adverse conditions on the labour market, social factors (such as problematic family backgrounds, migrant background etc.) or by personalized issues (problems in learning and individual development, lack of vocational orientation, lack of motivation, absent basic competences, negative school experiences etc.). Very frequently these problems are even overlapping (a. o. Bohlinger, 2004; Kremer, 2011, 2012; Baethge and Baethge-Kinsky 2012).

In this specific field of VET teachers are confronted with different and partially incompatible requirements and demands concerning the learning objectives: On the one hand, the students are supposed to catch up on general education and qualifications. On the other hand, teachers have to prepare their target group for (different) vocational fields by pre-vocational training. Simultaneously to these demands, teachers face a highly heterogeneous group of young people with individual learning experiences and needs (Kremer, 2011). The expression *personalized learning* is often used as the ideal solution to cope with these problems. But what does personalized learning actually mean and how can it be realized in didactical day-to-day life? This question is one of the starting points for a research and development project called InLab² that underlies the contribution on hand. In this context it seemed necessary to offer the teachers practical support to realize personalized learning in a way that contains and combines both theoretical concepts as well as the practitioners' (subjective) theories. Thereby it seemed to be crucial that the specific environment and background of the vocational school can be considered (Kremer and Zoyke, 2010; Kremer et al., 2012; Frehe, 2015).

In particular we focused on the development of a didactical prototype designed in a specific working group as a subgroup of the overall project InLab. More detailed it can be described as a framework for instructional material – the role-based competence balance (rbcb) (Frehe and Kremer 2014).³ In this part of the project there were mainly teachers of three vocational schools and two researchers involved. In this contribution, we will focus on the working context of this group and discuss the special context for research and design.

² InLab is the acronym emerged from the overall project title: InLab – Individuelle Förderung und selbstgesteuerte Kompetenzentwicklung für multikulturelle Lebens- und Arbeitswelten in der berufsschulischen Grundbildung. For further information concerning this project see <http://cevet.eu/forschung/abgeschlossene-projekte/inlab/?L=0> [2015-07-10].

³ Role-based competence balance is a one-to-one translation. In the German context it is named *Rollenbasierte Kompetenzbilanz*.

3 The role of prototypes, their development process, and their implementation in practice

3.1 The benefit of prototypes and their development process for the researcher

Kremer (2014) emphasizes that prototypes play an important role not only for the practitioners using them in their practice but also for the researchers themselves. They can bear the function of *gatekeeping, communicating, documenting, and reflecting*. Following the underlying understanding of DBR in AoI, prototypes can also be used more or less in order to (further) develop a product (primate of the product) or to gain contextualized knowledge (primate of the insight) as the following diagram shows (see figure 2).

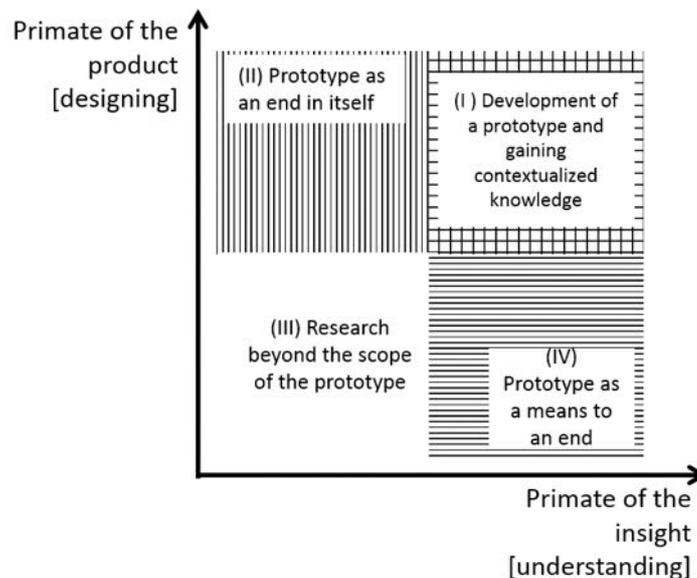


Figure 2: Role of the prototype development in the research process (Frehe, 2015 based on Kremer, 2014)

The underlying case study can be assigned to the first quadrant. Accordingly, it was a goal to develop a prototype in order to transfer relevant didactical concepts into practice. At the same time it was intended to differentiate the included concepts⁴ by theoretical and empirical explorations and analysis. Hence, the research interest contains both an interest of designing as well as an interest of understanding.

3.2 Reception of the prototype

During various accomplished projects with the aim of developing innovations in VET it turned out that the (cooperatively) designed prototypes are interpreted and received differently by both researcher and the practitioners. Therefore, the prototype's way into a practical context cannot be seen as a simple one-to-one transfer. On the contrary, this needs to be understood as an active way of reception by the implementing actors. Thereby, the specific interpretation of the prototype always depends on the particular site conditions of the practitioners' background (vocational school) (Kremer, 2014).

⁴ At the beginning of the work in this specific AoI teachers and researcher agreed on three main aspects that should be realized and combined by the prototype: Vocational orientation, instruments of competence diagnosis that support personalized learning, and strength orientation.

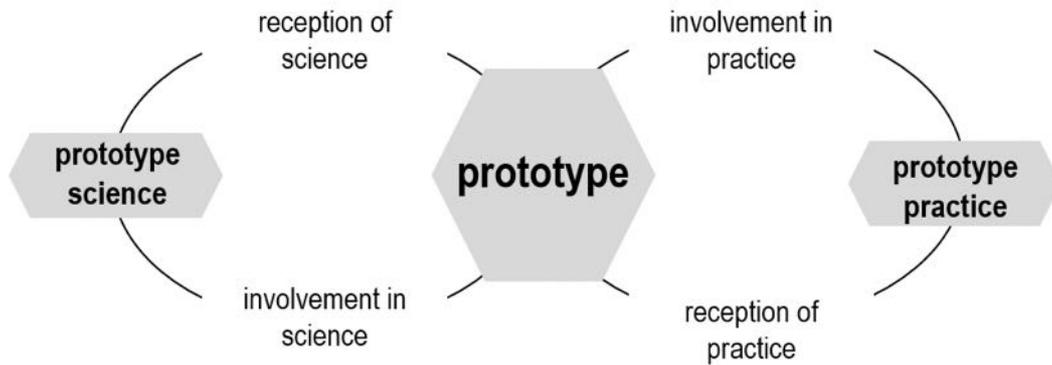


Figure 3: Reception of prototypes

In the underlying case study it has emerged that not only practice in general has its own view of the prototype but that each involved VET school had its own way of receiving the prototype as a basis of implementation. As a result each of the three schools adapted the prototype in a suitable way concerning their specific site conditions and their construction of the prototype-immanent concepts. As a consequence, a case-based approach seemed to be appropriate. Following Kremer (2001) the researcher is supposed to exceed the boundaries of the AoI in order to analyze the implementation activities on-site. In turn, this has methodical implications for data collection and analysis as discussed in the following paragraph.

3.3 The approach of reconstructive methods in AoI

A major challenge of researching in AoI is finding systematic methodical ways to collect and analyse relevant data (Kremer, 2014). Sloane (2014) notes that in DBR projects text production and reception play a crucial role. Against this background, the researcher has to ensure the documentation of the development process linguistically in order to make it accessible for reconstructive ways of analysis (ibid.). Since all actors in an AoI – researchers as well as practitioners – can basically be text producers, different kinds of text products do exist. To be able to use them as a basis for reconstructive analysis, it is possible to join them in one text corpus but still labelling their different sources for reasons of transparency (Sloane, 2014; Kremer, 2014).

In the underlying case study the development process of the prototype was documented by different text types of different origins: Protocols of group meetings and observations in classes were collected as well as the teachers' documentations of their implementation activities at each vocational school, and interview transcripts. That way a complex data basis could be gained, that allowed a detailed reconstruction of the implementation and reception of the prototype for each vocational school (= case). On that basis it was possible for the researcher to get a deeper insight concerning the underlying research interests (here: concretion of the prototype-immanent concepts and the practitioners' responses concerning the prototype as a basis for its further development). The following figure illustrates the complexity of the gained data basis:

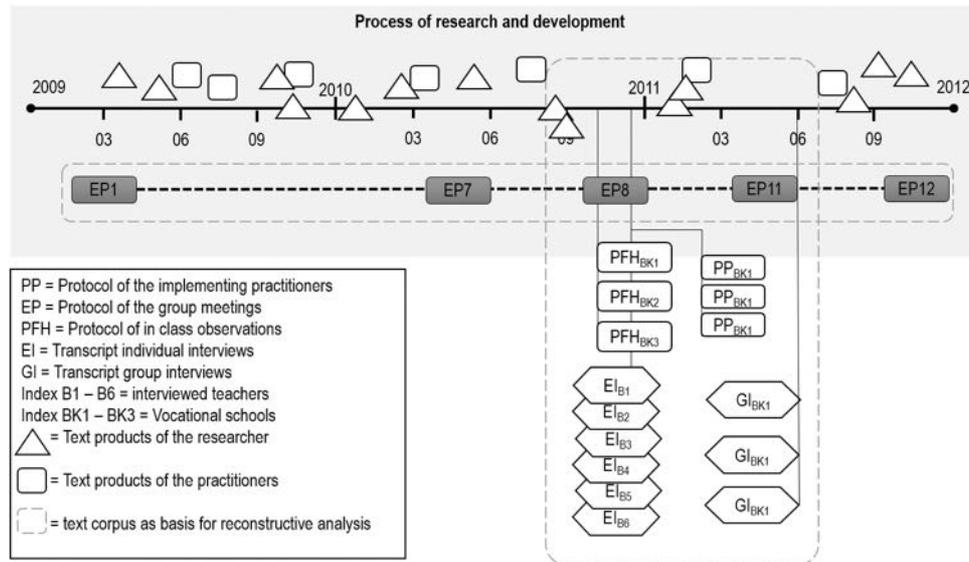


Figure 4: Test basis of the reconstructive analysis (Frehe, 2015)

4 Conclusion: Seen requirements, challenges, and potentials concerning a research programme in AoI

Summarizing, a research programme within an AoI is accompanied by both advantages as well as disadvantages. Besides, various requirements concerning the researcher do arise. The following bullet points aim at offering a final impression of the specific requirements for and possible advantages and disadvantages of a research in AoI (Kremer, 2014; Frehe, 2015):

Requirements concerning the researcher:

- Construction and maintenance of an AoI.
- Engaging oneself in foreign living worlds (Lebenswelten).
- Change in perspective in direction of the field of implementation.
- Profiling the AoI in the sense of the research programme / interest.
- Presentation of the research product beyond the prototype.
- Double positioning of the researcher: (1) Researcher doing science and (2) researcher developing a prototype
- Developing methods both for collecting and backup data as well as for data-analysis and preparation.
- Consideration of relevant scientific paradigms and criteria of quality.

Seen challenges of research in AoI:

- Coping with different interests and goals of the involved actors.
- Allowing for and consideration of different receptions and reinterpretations of the prototype.
- Risk, that that the development of the prototype becomes dominant.
- Risk of losing the connection to the application field.

Seen potentials of research in AoI:

- Benefit from the different expertise of the involved actors.
- Release from the pressure to act in the own living world.
- Competence development / professionalization of the involved actors.
- Tracking specific research questions.
- Access to different and relevant living worlds.
- Possibility for documentation, communication and reflection in different settings and situations.

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Work Process Oriented and Multimedia-Based Learning in Vocational Education and Training

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Abstract: Since the late 1990s more and more European states are focused on the shaping of vocational education measures based on work processes. Meanwhile, in vocational education research and practice is also discussed in which manner this work process orientation can be enhanced by the use of digital media. According to that the "Kompetenzwerkstatt", which is founded in vocational education research, has been continuously developed. This article shows the elements, concepts and tools of the "Kompetenzwerkstatt" in detail.

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1 Introduction

For many years now, the technology-based occupations in the crafts and industrial sectors have exhibited a high degree of dynamism which can primarily be attributed to technological change, organisational innovation and partly rapid changes in the economic framework which companies are operating in. This means that the challenges of the internal European markets and globalisation must increasingly be met by SMEs as well. Companies expect their employees to have appropriate characteristics such as independence, awareness of quality and responsibility, skills of communication, cooperation and interaction, understanding of commercial processes and relationships, flexibility, creativity etc. This change also represents a major challenge for vocational education and training. The primary objective is to develop professional expertise, which can be viewed as the ability and readiness to act in professional situations with a sense of social responsibility and in a manner that is appropriate and thought out.

In German VET since the start of the new millennium, this primary objective has been associated with a move away from the guiding principle of imparting skills and knowledge, which tended to be abstract and isolated, towards holistic, work process-oriented learning (Fischer 2004). Qualification and training potential of the realities of work and professional tasks were moved back relative to curriculum and didactic considerations (Rauner 2002, p.450), in terms of focus: Concepts for combining learning and work take the approach of bringing together the work place and the vocational training, in order to better fulfil the altered qualification requirements (Howe, Berben 2006). There-

fore, a particular challenge for teachers and trainers is the identification of typical work processes within the occupations where they are delivering training.

The concept of the Kompetenzwerkstatt (Howe, Knutzen 2007), which has a tradition of more than 15 years and is founded in vocational education research with ongoing continuous development, picks up on these challenges. It offers methodologies, aids and suggestions for the design of vocational training. The main goal has always been to support trainers and teachers to implement work-oriented, project-based and multimedia-supported vocational education and training by analysing work processes, shaping task-oriented learning and designing learning software. These measures can influence the connection of learning and work of apprentices and trainees.

To ensure the quality of research and development the Design-based research approach can be named as a methodological foundation (Wang, Hannafin 2005; DBRC 2003). Due to its iterative, interactive and flexible principles it is predestined for the collaboration among experts like skilled workers and researchers themselves throughout the process of developing and evaluating the Kompetenzwerkstatt-concept. In order to convert the obtained results from analysing work processes into task-oriented learning concepts as well as designing appropriate learning software all learning venues, meaning companies, training centers and vocational schools have to be included. An iterative process of designing, implementation, analysis and re-designing forms the basis for formative improvements. Outcomes from previous circles can directly be taken into account during the next circle of inquiry. This way the task-oriented learning and learning software can be continually improved and adapted to the needs and conditions of the vocational education and training practice.

2 Analysing and describing work processes – how can that be done?

As a starting point for developing educational measures in the field of vocational education and training it is crucial to identify practices, routines and experiences of skilled workers that are experts for what they are doing. What are those people doing when handling a task, how are they acting, what work objects and tools are they operating with, and what requirements do they have to be aware of? To answer these kinds of questions, the “real“ work in practice must be explored: There must be precise questioning and observation of how an expert in a trade goes about his work. The analysis of working processes reflects this exploration of the skilled work in question (Knutzen, Howe, Hägele 2010).

An occupational work process represents the complete activity needed to fulfil an operational assignment. Work processes are initiated by customer orders or internal company orders. The assignment goes through the phases of acceptance, planning, implementation and completion. The result of the work is a concrete product or a service which can be given a value with regard to its worth in relation to the customer. A work process is viewed by the skilled worker or journeyman not as an isolated operation but as part of a wider context of work.

In principle the analysis of work processes takes place in a company. The choice of a company is based on the preferences, expertise and experience of its “work process experts“. Work process experts are qualified specialists, i.e. experienced skilled workers, journeymen and master craftsmen with many years of professional experience.

When carrying out a work process analysis, the method of qualitative interview is employed. The interview is conducted with a work process expert and helps record the various facets of the work process. As a guiding principle for the interview, the Kompetenzwerkstatt provides the “Work Process Matrix“. It sub-divides the work process into four fundamental phases: Acceptance, planning, implementation and completion. Furthermore these different phases are being expanded by several core questions which lead to detailed descriptions of the work steps and methods and work objects which are affiliated to the different phases. On top of that the work process matrix consists of additional conditions like customer requirements, special company conditions, laws, regulations and mentionable standards.

Tab. 1: Excerpt from a completed work process matrix
 Example: Work process of an electrical fitter (Howe, Knutzen 2011)

Laws, regulations, standards (technical, specialist, commercial, health and safety protection):	<ul style="list-style-type: none"> – General terms and conditions (wholesale: e.g. Price and payment terms) – Commercial legislation, HGB § 377: Goods-in checks – DIN VDE 0100 Section 410: Protection against electrocution Section 701: Rooms with a bath shower – DIN VDE 0298 Section 4: Use of cables and insulated cabling
Company conditions (Personnel, Resources):	<p>The Master Electrician responsible oversees the apprentice during the implementation of the electrical installation.</p> <p>The apprentice conforms to the positions on offer and instructions from the Master Electrician.</p> <p>Office staff is responsible for contract administration (delivery notes, time sheets etc.)</p> <p>If required, there should be cooperation with other trades</p>
Customer requirements (Service, Quality, Costs):	The customer expects to be informed in good tie if there may be additional costs, or change to plans. The customer expects the different trades to coordinate the work amongst themselves, and that he will have nothing to do with that.
Work process phase	Planning
Work steps and methods:	<ol style="list-style-type: none"> 1. Make calculations: Cabling calculations (cross section, length, protection, layout, voltage etc.); Lightning calculations with industry software Dialux (lightning power, number of lights, fitting locations etc.). 2. Produce an installation plan: Calculations, customer wishes, room plans and regulations form the basis. 3. Agree with other trades: Timing arrangements: Plumbing and heating, tiler, screed and plastering. 4. Produce a time and work plan: Briefing of the apprentice by the master. Considers the individual construction phases and timing arrangements. 5. Produce a list of materials: With the industry software Powerbird (lights, switches, sockets, cabling, ...). 6. Reconcile costs with proposal: Additional costs reduce profit in a binding proposal 7. Gather materials, equipment, tools: Order material from wholesaler. Special machinery and equipment such as wall grinders or measuring equipment.
Work objects (Technology, Documentation, Aids):	<ul style="list-style-type: none"> – Industry software: Powerbird (calculation, project management, administration, material lists), Dialux (Lightning planning) – Specification – PC, Laptop, Telephone – Room plan, installation plan

3 Task-oriented learning: Transferring results from work process analyses into educational measures

The didactic approach of „task-oriented learning“ (Howe 2008) represents a key role in the Kompetenzwerkstatt-concept when it comes to transferring results from work process analyses into an educational context. Task-oriented learning represents project-based, work process oriented learning in problematic situations in operational reality. The term itself indicates the link and systematic relation between „learning“ and „work“. The overarching goal of the integrated delivery of theoretical knowledge and practical skills by means of learning and work assignments is the development of comprehensive professional expertise. Moreover, the learners should recognise during their task-

oriented learning that technology is purpose-oriented and can be shaped, and that working processes can be organised in very different ways.

Vocational education faces the challenge to realise task-oriented learning in respective measures – but how can that be done? Learning and work tasks give answers to these kind of questions. A learning and work task is a work process related project, which, like a real work process, consists of the four phases: acceptance, planning, implementation and completion. Although the transitions in practice are naturally fluid, the boundaries of the work process phases are helpful as an orientation for the development of a learning and working task. They guarantee that the essential action steps and design dimensions of a work process are considered in the task-oriented learning. The competences required to successfully master the requirements of the task must naturally be developed in the trainees. Therefore, in addition to the action steps which must be followed and embedded in the direct processing of the assignment, the targeted development of the technical competence, methodical competence as well as social competence is necessary.

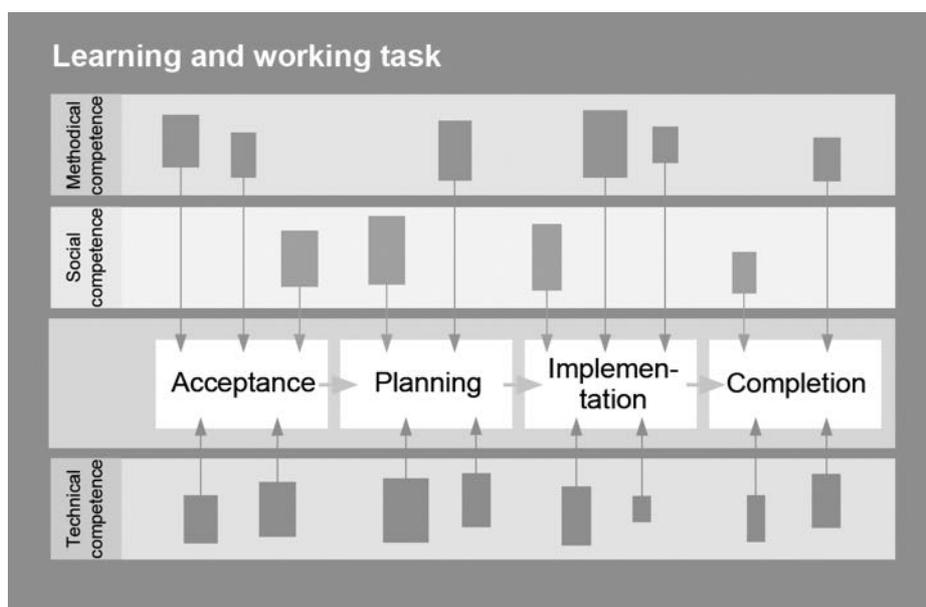


Figure 1: Task-oriented learning (diagram) (Howe, Knutzen, 2012)

The most important challenge in planning learning and working tasks is the determination of the action steps, objectives and content. The decisions made regarding the action steps to be followed, the objectives to be reached, and the content to be processed are interlinked and have a mutual effect on each other. They benefit significantly from the documented work process analyses: The decision has a solid foundation based on the relationship with the real world of work.

4 Didactics make use of technology – Shaping task-oriented learning using digital (multi-) media

Realising learning and work tasks in training and education is very challenging for teachers and trainers due to the complexity of content for specific professions. Newer scientific findings on that matter explicitly point out that learning and work tasks can be supported by using the different potentials of digital media in an educational context. However, the main goal of this challenge is to make use of technology from a didactics point of view – not the other way around. Generally said: Didactics makes use of technology instead of technology seeking application.

Positive examples from vocational training practice show a variety of quality-enhancements of said vocational education. In particular this applies to the work process orientation of didactics and curricula.

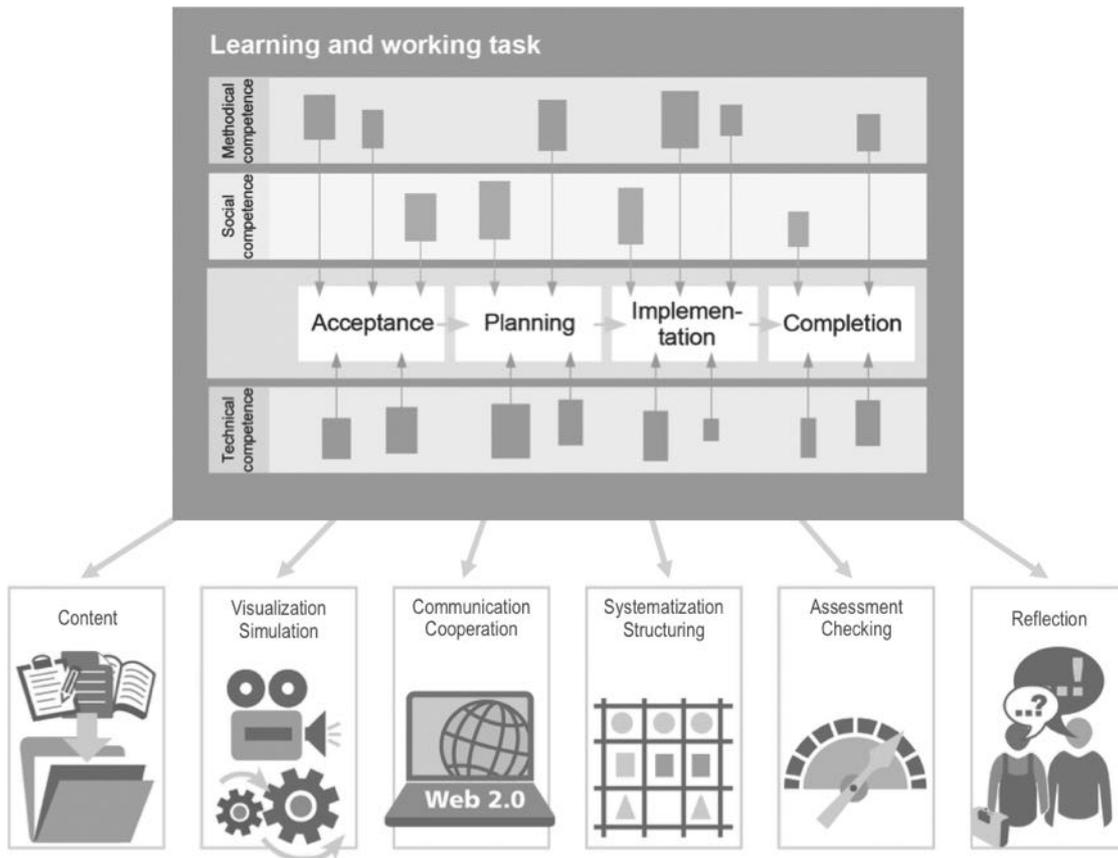


Figure 2: The potentials of digital media and internet for task-oriented learning (Howe, Knutzen, 2013)

Making information and content available

Traditionally, teachers and trainers provide their learners with relevant information in the form of worksheets, books and so on. At the same time, learners document their learning results and outcomes in print form as well. Digital media offer considerably better options for this provision and supply of information and content. Using Computers or mobile devices and corresponding applications, teachers and trainers can generate learning material and subsequently distribute it over the internet (Pachler et al. 2011, p.10). Developing entirely new material often times becomes obsolete. For one thing, one's own materials can be reused and adapted; for another, the world wide web offers countless interesting sources. All these materials can be sent to learners via email, copied onto school or company servers, uploaded into learning platforms or stored in cloud services (Reinmann-Rothmeier 2002, p.7; Erpenbeck, Sauter 2007, p.205). Learners can likewise use the same options.

Visualising, animating, simulating

In order to demonstrate work processes and the associated work items clearly and tangibly for vocational learning, there is also the option to present these via media formats (Weidenmann 2011). For example, it seems reasonable to show learners the different phases of a work process using videos. In this way it can be i.e. clarified which employees are involved in work processes, how they work together, and which roles they play in the business activities of a particular company.

Animations can be used to illustrate circumstances (Niegemann 2004, p.143). This applies to processes that run very quickly or are not visible to the human eye. These might also be processes that must not be acted upon for reasons of occupational safety. Furthermore, work items that are "enclosed" (i.e. by casing, etc.) and cannot be observed can also be visualized.

While learners mostly absorb information passively via videos and animations, simulations offer interactivity in the learning process. Learners can change certain parameters, so simulations

offer possibilities that go far beyond the mere representation of work processes or work items (Herzig, Grafe 2006, p.12). Learning-by-discovery and experimental learning is made possible this way.

Communicating and cooperating

An important aspect of skilled work is almost always social interaction with superiors, colleagues, customers or suppliers. It is therefore very important for learners, teachers and trainers to cooperate in training – this encompasses, for example, determining schedules and work planning, cooperative content processing, reaching goals together, and merging and sharing work results (Kopp, Mandl 2009, p.144).

These demands are well suited to the features characterising Web 2.0, and user generated content in particular. Bearing this mind, it seems logical to use typical Web 2.0 tools in training. This, the aid of a forum initiates an exchange of ideas and support for someone engaged on a particular task. With a Wiki – much like an online lexicon – relevant information on a pertinent topic can be collected jointly and prepared for further shared use in the form of dynamic, cooperative knowledge building (Arnold et al. 2011, p.48). If a particular task involves work-sharing, information about each person's respective status can be communicated within the groups, and the relevant feedback can be posted via blogs.

Structuring and systematising

In the course of training, Office application files, as well as photos, graphics, audio and video files, internet links and other multi-coded files and information can normally be used for learning purposes. This means that an even greater and most times unsorted pool of material and documents is successively built up. Empirically, individual teaching and learning aids provide information on a variety of topic areas and can therefore be useful multiple times in various contexts and at different times. In order to use this material multiple times, learners require a system that enables them to find the available content or the content they are searching for in a way that is context-sensitive and appropriate to their requirements. Using key word systems is useful in this regard (de Witt 2008, p.441). So called "tags" (i.e. key words) can be attached to digital materials in order to classify them by relevance and quality, marking them as favourites and link them to each other via hyperlinks (Schnotz, Horz 2011, p.89). Tagging materials is therefore not a one-off act, instead it can be repeatedly adapted.

Diagnosing and testing

Elements of e-assessment – computer-supported testing – can also be an interesting option in training (Arnold et al. 2011, p.241). Simple, classic tests include single-choice and multiple-choice quizzes: the learner is given a number of possible answers, of which one or several are correct. Variants of this type include structure-laying tests, in which elements such as texts or graphics are disarranged and must be put in the correct sequence. Open questions, in which the answers must be written out in text fields, are also possible. Another interesting possibility is offered by Classroom Response Systems. Learners convey their answers anonymously to a server via a wearable device. Their answers are immediately evaluated; response behaviour is visualised and can be presented and discussed via a projector. One upside of this approach is that learners can bring their own devices.

If it is a case of reviewing and checking learning success with the aim of completing professional tasks, more challenging, digitally-supported forms of examination are useful. The potentials described can be used under „Visualising, animation, simulating“. This, authentic professional problems can be shown using videos or simulations, and leaders can demonstrate how to handle these to the examiner – also by using photos, videos or any other media.

Reflecting

Reflection means that learners are taught how to assess themselves i.e. their competence and competence development. A self-assessment approach that is well supported by digital tools – to evaluate one's own strengths and weaknesses – can stimulate learners in the process of self-reflection, show them what they have achieved, and demonstrate the areas in which to develop their competences. Even more helpful is to compare the self-evaluation with an outside evaluation from teachers/trainers

or even other learners. In particular, any discrepancies in the evaluations – clearly visualised by means of a digital tool – offer valuable starting points for conversations about the progress of one's previous and future training.

Digital media, furthermore, can also support reflection about one's own training process and the role of one's school and company. An electronic folder – an e-portfolio – can initiate a „cooperation between training sites“ in the learner's mind (Elsholz, Knutzen 2010). If the materials stored in the e-portfolio are tagged consistently from the outset, the learner will know (upon addition of a new document) if other documents already exist, based on the keywords of the new entry. This leads to a process of reflection on when, at which learning site and in which context the current topic has previously been relevant in one's training.

5 Conclusion and future prospects

The task-oriented learning approach, as developed in the concept of the Kompetenzwerkstatt, has been successfully implemented in various research projects, and it can now be regarded as well-established in the German vocational education and training. Moreover, it has now become an important element within the qualification system for trainers, and in the university education of VET teachers. The orientation of training and teaching towards work processes has proved to be exceptionally useful. The results of evaluations confirm: professional expertise can be developed sustainably, and with great success, performing task-oriented learning. Furthermore the spread and growing availability of digital media and the internet has led to intensive consideration regarding the possibilities this may offer for task-oriented learning. Videos, animations and simulations can illustrate relationships or processes in a clear and authentic manner. Hyper structures can systematise complex and strongly interlinked topics, Web 2.0 use can support communication and cooperation between the trainees, e-portfolios can support documentation and reflection with regard to learning processes. However, the history of e-learning shows that new technical possibilities were only effective when they were integrated didactically justified in teaching and learning processes.

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Session 2

School and Workplace: Cooperation, Combination and Comparison

Operating between Rationalities: How Swedish Vocational Teachers and Workplace Tutors Negotiate and Create Students' Training Schemes

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Abstract: The paper investigates a changed educational practice where Swedish vocational teachers have become responsible for planning and evaluating students' learning at workplaces. Four vocational teachers were shadowed during 12 workplace visits. Deploying the concept of boundary crossing the findings foreshadow an evolving educational activity where vocational teachers collaborate with workplace tutors to evaluate and reconstruct students training schemes. The analysis shows how vocational teachers use their teacher skills, and their familiarity with the target occupation to identify and establish work tasks for the students to engage in at the workplace.

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1 Introduction

The paper argues that there is an evolving educational activity, which demands that the borders between the different rationalities of teaching vocational education and training in school (VETiS) and tutoring in workplaces are crossed. Even though the way to organise vocational education trajectories vary from country to country, a common determiner is that vocational education and training (VET) concerns how to guide and support students' learning of different content, in different contexts i.e. in schools and workplaces (Barabasch and Rauner, 2012; Billett, 2013; Messmann and Mulder, 2011; Tuomi-Gröhn et al., 2003). Hence, vocational training schemes are enacted in the dynamics of curricular and occupational demands (Brennan Kemmis and Green, 2013; Fejes and Köpsén, 2014). They are carried out in arrangements within vocational schools or, as in the Swedish case in upper secondary schools, and in workplaces. General subjects, vocational theory, and supplementary vocational training may be taught in schools, whereas the development of general and specific vocational skills, commonly takes place at the workplace (Berglund, 2009; Berner, 2010; Billett, 2002; Tanggaard, 2005). Whether it concerns teaching in schools, or tutoring in the everyday activities of the workplace, we can assume that vocational teachers, workplace tutors, and students engage in actions that support learning of different content, which constitutes the notion of VET pedagogy in the following discussion. The findings illustrate how Swedish upper secondary vocational teachers construct a VET practice in collaboration with workplace tutors. More specifically, the analysis focuses on how VET teachers cross boundaries to create students' training schemes in the dynamics of school based curricular objectives, and everyday activities at the workplace.

2 Research on VET pedagogy and training practices

Research have been reviewed to identify tensions, and to reveal potential bridges between the different practices of teaching and tutoring for occupational content knowledge. Three bridges between school and workplace, or in other words, three recourses for boundary crossing between education and occupation were identified. First, one tension concerned the activity of teaching VETiS, which was in contrast to the work placements where the students engaged in seeking and receiving instructions to develop occupational skills (Berner, 2010; Tanggaard, 2005). Another tension concerned the

vocational teachers' ability to balance their teaching between educational, and occupational values. In this case, vocational teachers tended to meet their students respectively as teachers, and as workplace team leaders, an approach to teaching that characterized VETiS (Brennan Kemmis and Green, 2013). In addition, by inhabiting identities in the teacher community, and in the occupational community the vocational teacher identity constituted a boundary object that carried the potential to bridge school and workplace, i.e. a resource for manoeuvring between the settings (Fejes and Köpsén, 2014). The third tension concerned the presence or absence of a shared interest when VET teachers and work place tutors interacted during students' work placements (Konkola et al., 2007; Olofsson, 2014). When shared interests were present, the interactions constituted a boundary place for collaboration between school and workplace that could bridge the different rationalities of education and occupation.

3 Methodology

In the spring semester 2014 I had the opportunity to study an educational practice while subject to implementation of new policy. Field studies were conducted in three Swedish upper secondary schools that offered VET in the form of upper secondary apprenticeships. I.e. a new, school based, upper secondary apprenticeship model was implemented in 2011. School based apprenticeships refer to syllabus guided training schemes, where the schools and the vocational teachers are responsible for planning, and evaluation of students learning at workplaces. In the Swedish model the students are alternating between school and workplaces, approximately fifty-fifty during three years. The workplace, the school and the student enter an agreement that decides division of responsibility, and the duration of the placement. The student can change work place several times during the training period.

To answer the research questions: How do VET- teachers proceed when large parts of the learning objectives are displaced from the school to the workplace? What are the constraints, and how are they bridged? I used the technique of shadowing (Czarniawska, 2007). I accompanied VET teachers when they visited workplaces. Two teachers at the Hotel and Tourism Programme, and two teachers at the Business and Administration Program offered me to observe them visiting the same students twice (12 visits), which gave a rich material for analysis. The field notes were compiled after each visit, and difficulties that the participants expressed were noted separately for the analysis.

3.1 Theoretical and conceptual framework

Activity theory (Engeström, 1987; Tuomi-Gröhn et al., 2003) forms the conceptual, and theoretical framework for the analysis. The teachers' and the tutors' work are considered belonging to different activity systems (Engeström, 1999; 2010). These activity systems are object driven, and object producing indivisible wholes that carry societal relevance. E.g. the activities of teaching and tutoring in VET have been identified as important resources to foster future workers and citizens, and to facilitate transition from school to work (Billett, 2013). The emerging collaborative activity that the vocational teacher, workplace tutor and the student engage in in this study was directed at fostering the student into workplace behaviour, into becoming a skilled worker, and into becoming a responsible adult. In activity systems, systemic contradictions are the driving force for processes of change (Engeström, 2005). In the following analysis the notion of boundary crossing as defined by Akkerman and Bakker (2011) is the analytical lens. From this perspective the boundary between school and workplace is manifested in their different goals and traditions. Boundary is defined as "a sociocultural difference leading to discontinuity in action or interaction" (Akkerman and Bakker 2011, p.133). Hence, boundary work does not demand similarities between the involved activities since it is composed of actions that go in both directions. Consequently, boundary crossing concerns finding ways to relate different activities (ibid., p, 155) of education and occupation in the daily practices of vocational teachers, workplace tutors and students. The difficulties or constraints that appear when vocational teachers and workplace tutors meet may be analysed to foreshadow a joint VET pedagogy.

4 Result

Three constraints were identified: i) the problem of matching student and workplace. ii) The problem of matching actual work tasks and the guiding course work. iii) The problem of matching the guiding coursework and available work tasks. These constraints are embedded in the different rationalities of school and workplace (education and occupation), where the syllabus-guided coursework did not per se match the occupational skills that are afforded at a workplace. For this paper, parts of the analysis of the first and third constraint have been chosen to illustrate how vocational teachers and workplace tutors bridge constraints to create students training schemes.

4.1 The problem of matching student and workplace: Wendy has a hard time to show up at the workplace

On the way to visit Wendy at the Adventure Hotel the vocational teacher Beatrice explains that today's visit concerns two things. One, there are indications that Wendy still has high absence, a matter that has been on the agenda in school, at the workplace, and at the previous tripartite conversation. Two, the workplace tutor has mentioned that Wendy wants to change work place in the forthcoming semester, which is in contrast to what she has told Beatrice, and thus not according to plan. She says:

The tutor expressed that she (Wendy) may be welcome to stay. But now... I don't know what will come out of today's meeting". Beatrice goes on: "She is capable and well-liked at the workplace. Yet, she's not always there, and she doesn't notify the workplace (C/HT/W2/p.1).

Beatrice identifies the student's ability to adjust to the routines and rules at the workplace as the key to be included in the work community, and to gain access to different work tasks. The problem for the vocational teacher is that the absence-behaviour is not per se assessed with regard to the knowledge requirements in the coursework. Instead, presence at the workplace controls access to work tasks. Therefore, Beatrice says to Wendy:

To reach the requirements for the grades in the different courses... You need not only to work with the tasks once or twice. It is demanded that you know these things, and therefor being present is what controls the whole thing (C/HT/W2/p.4).

In this utterance Beatrice crosses the boundary between school and work place. She uses the grading system to establish a connection between the learning objectives and the work tasks. Being an upper secondary apprentice at the workplace thus preconditions the ability to adjust to the rules at the workplace, otherwise there is a risk of not reaching the curricular demands set by the school.

4.2 The problem of matching the guiding coursework and available work tasks: Fanny works with various tasks at the workplace – what works?

When the business and administration teacher Vicky arrived at the Little Shop for a tripartite conversation with Fanny and here tutor, she had the intention to guide them through the coursework. Her questions related to topics in the coursework included in the training scheme, i.e. marketing, purchasing, and customer service. However, at the workplace Fanny also worked with tasks that went beyond the predetermined education plan (the coursework):

The tutor tells about an online shop they are establishing. Fanny has been working with it, adding products. This was new for Vicky, who replies that there is this course in E-commerce... (A coursework they had not yet started on). She asks Fanny, have you been in on the whole process? I've seen someone place an order, Fanny replies. (A/HA/F1/p 5,6)

In the sequence above, the student work with content that is not according to plan, which means disturbances in the training scheme established by the school. Hence, when the student work with different tasks the VET teacher needs to weight the actual work tasks to the coursework. In such cases the teacher have to cross the boundary between the school's course work guided rationality, and the work place's work bound rationality. Therefore, Vicky asks Fanny questions about the work content, *if she has been in on the whole process*, to determine whether or not the course could be added as part of the student's training right away. This approach indicates that the content in the training schemes is continuously subject to change. In collaboration with Fanny, and her tutor Vicky uses the workplace and the actual work tasks to revise Fanny's training scheme. Her intention to evaluate turned into an action of collaborative planning.

5 Concluding discussion

The analysis has focused on how vocational teachers cross the boundaries between the different rationalities of school and workplace to create students' training schemes in collaboration with workplace tutors. The result in brief: The problem of matching student and workplace exemplifies how educational and occupational values are crossed. During the meetings the teacher used her skills embedded in her identity as a vocational teacher (Fejes and Köpsén, 2014), and in her knowledge of the occupation to manoeuvre the student to adjust to the workplace. The problem of matching the education plan to work tasks exemplifies how VET teachers reconstruct education plans, and training schemes from the perspective of the actual work tasks that students engage in at the workplace. Both examples show how Swedish VET teachers may work when the learning objectives are displaced from school to workplace, i.e. how they use their teaching and occupational knowledge to bridge educational and occupational demands (Brennan Kemmis and Green, 2013; Fejes and Köpsén, 2014). Hence, the findings indicate that the vocational teachers may form a collaborative VET pedagogy in the tripartite conversations. Manifestations of boundary crossing as defined by Akkerman and Bakker (2011), and the activity theoretical framework (Engeström, 1987; 2010) have thus proved useful to show new aspects of how vocational teachers work when the learning objectives are displaced from school to workplace.

Eventually, the illustrations presented in this paper are not adequate to conclude that a new VET pedagogy can be foreshadowed, more extensive studies on the collaborative aspects of VET are needed. Nevertheless the results point out that the vocational teachers, when working with work placements, need to cross boundaries between the different rationalities of education and occupation. In the school's organisation the coursework constitutes the starting point for planning and implementing the VET objectives. In the workplace, the work tasks constitute the starting point. In this study the realisation of students' training schemes was the challenge. It was hard for the vocational teachers to establish the training schemes from one starting point, or the other. Hence, the tutors and teachers bridged the different starting points and recreated the training schemes.

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School and Workplace Factor Moderators on the Development of Professional Competences in Initial Vocational Education

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Abstract: The paper presents the results of a research about the influence of school and workplace features on the relationship between the learning of specific competences at school and the use of specific competence on the workplace during the '*practice module*' in professional training degrees in Spain. The research draws on data collected through questionnaires and interviews to a sample of students, teachers and workplace-based supervisors of initial professional training courses. A moderator analysis was conducted to observe the influence of school and workplace features on the association between learning and use of specific competences. The results show that the perception of the coherence between school and workplace, a student-centred approach and some task features at workplaces where the '*practice module*' takes place have a significant influence on the relation between learning and use of specific competences.

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1 Introduction

Development of professional competences in initial vocational education programs is a process built in the conjunction of two contexts: the school context and the workplace context. It is expected that what students learn at the school context will be further developed at the workplace context. However, each context has their own dynamics and not always what is learnt at the context of the school is useful or can be further developed at the context of work. This problem can be described as a transfer of learning problem, which is attributed to the cultural gap between formal education and the workplace (Eraut, 2004). Many researchers remain interested in understanding the mechanism that influences transfer of learning into the workplace (Hinrichs, 2014). Several studies have been conducted to understand the transfer process and have supported models in which transfer is influenced by several variables at different levels of analysis: individual, training and organization (Baldwin & Ford, 1988; Holton, 2005). However, these studies usually define transfer of learning as use of knowledge

or skills. Moreover, some authors argued that transfer involves not only application of knowledge or skills into a new situation but also a transformation of the skills and knowledge being used (Hager & Hodkinson, 2009). Consequently, it has been proposed an alternative way to address the problem of transfer of learning as a boundary crossing between contexts (Särljö, 2003). This conceptualization takes into account the individual's multidirectional movement from one organization to another, for example, from school to work and back.

Regarding this background, our research question is: which factors from the school context and the workplace context influence the construction of learning and development of professional competences in Initial Vocational Education and Training programs. In order to conduct this study, we draw on two main theoretical backgrounds to identify school-based factors and work-based factors that influence the development of professional competences in initial training.

On one hand, the study is built on the workplace learning approach. There is a general agreement on the benefits of the workplace learning approach within initial vocational education (Gonzalez Soto, 2013; Marhuenda Fluixá, 2012). Moreover, there is a growing scientific literature on learning at workplaces (Billet, 2011). Organizations are increasingly interested in providing adequate work conditions in order to foster learning among their employees. Educational institutions and educational administrations are also concern in offering vocational education students learning opportunities in real workplace contexts. Research on learning at the workplace suggests that there are some objective features of workplaces that enhance or hinder learning (Fuller, Munro, & Rainbird, 2004).

On the other hand, the study is built on the teaching approach and the practice module design. Research shows that student's perception of their learning environments are related to the quality of their approach to learning and learning outcomes. It has been argued that when student perceive their teaching to be of a higher quality, they are more likely to adopt a higher quality approach to their learning (Trigwell & Prosser, 2004). Moreover, it has been shown that when teaching is practice-oriented, application of learning into the workplace practice increases (Ballesteros-Rodríguez, 2008). Research also shows that supervision and feedback influence learning and transfer of learning (Vela-da & Caetano, 2007). In a practice module design in initial vocational education programs these functions are carried out by school tutors and workplace tutors who work together in collaboration. Fuller and Unwin (2003) argued that when there is a mutual collaboration between companies and educational institutions it is easier to achieve better learning outcomes from the workplace experience in apprenticeships programs.

The research questions of the study are the following:

- Does the perception of coherence between what students learn at school and what students do at the workplace influence the association between learning the specific competence at schools and use of specific competences at the workplace?
- Does the teaching approach influence the association between learning the specific competence at schools and use of specific competences at the workplace?
- Do the school-based supervisor and the work-based supervisor support influence the association between learning the specific competence at schools and use of specific competences at the workplace?
- Do task features at workplace influence the association between learning the specific competence at schools and use of specific competences at the workplace?

2 Methodology

The study draws mainly on quantitative data. However, qualitative data was also collected in order to gain a deeper understanding of our research questions.

A self-administered questionnaire was distributed among students of the Vocational Education and Training System in Spain, both in the traditional scheme and the dual system in the study programs of Social services, Industrial studies, Healthcare and Administration. The questionnaire was administered after the completion of so-called 'practice module' when the students have finished their courses in the traditional scheme and at the end of the second year in the dual system scheme. The questionnaire collected information about characteristics of the participants (individual engage-

ment and motivation), coherence between learning at school and workplace (practice oriented teaching), teaching approaches (teaching-centred, student-centred), practice module design (duration, supervision, and evaluation) workplace features (resources, autonomy, complexity, variability, challenge) and the learning at school and use at workplace of specific competences. We asked students to indicate in which degree they have learnt a set specific competence at school and in which degree they put into practice these set of competences at the workplace. Single items were measure using a 4-point Likert scale. A sample of 379 valid responses was collected from sixteen vocational education programs. A factor analysis was conducted to reduce the dimension of the questionnaire and provide validity and reliability measures of the instrument.

A moderation analysis was conducted in order to identify which factors from the school context and the workplace context enhance or diminish the association between what had been learnt at school (learning) and what had been done at the workplace (practice). Moderation analysis consist on conducting several regression analysis; firstly with the predictor variable and the moderator variable and secondly, with the predictor variable, the moderator variable and the predictor and moderator variable as products (Hayes, 2013). If the percentage of variance explain by the second regression model significantly increases as a result of the introduction of the product term, then the effect of the moderator variable is significant.

3 Results

Table 1 shows descriptive data of the student sample collected through the questionnaire. Eighty percent of the sample corresponds to traditional VET courses, which have a 12% percent the studies hours conducted within enterprises. The questionnaire was administered in four disciplines: Social services (27.4), Healthcare (38%), Administration (11.9%) and, Industrial (22.7).

Table 1: Descriptive

	Frequency	Percentage
<i>Gender</i>		
Male	157	41.6
Female	220	58.4
<i>Educational scheme</i>		
Traditional VET	306	80.7
Dual VET	73	19.3
<i>Previous studies</i>		
Compulsory secondary education	92	24.3
PQPIs	3	0.8
Exam	81	21.4
Non-compulsory secondary education	146	38.6
CFGM	27	7.1
CFGS	18	4.8
University	5	1.3
Others	6	1.6
<i>Studies</i>		
Social services	104	27.4
Healthcare	144	38.0
Administration	45	11.9
Industrial studies	86	22.7
N	379	100.0

Figure 1 shows the regression analysis between learning of specific competence and use of specific competence, where the first variable is the predictor and the second variable is the outcome. The regression coefficient is .42, $p < .001$, and the Adj. R^2 of the model is .21, $p < .001$.

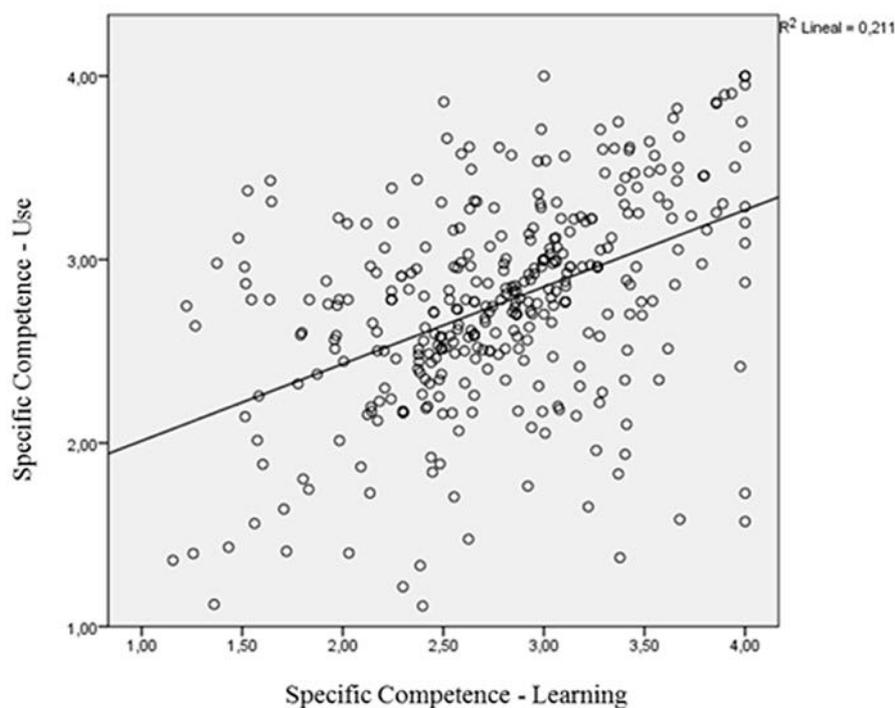


Figure 1: Regression line between learning of specific competence and use of specific competence

Table 2 shows the results of the moderation analysis, where the predictor variable is *learning of specific competence* and the outcome variable is *use of the specific competence*. Moderator variables are: perceived coherence between learning and practice, teacher-centred approach, learner-centred approach, role of school-based supervisor, role of work-based supervisor, access to workplace resources, task variability, task complexity, autonomy and, task challenge.

Significant moderators are: perceived coherence between learning and practice, learner-centred approach, role of school-based supervisor, role of work-based supervisor, task variability, and autonomy.

Table 2. Moderation analysis

	Y: Specific competence – Use					
	Model 1			Model 2		
	b	R ²	Change in R ²	b	R ²	Change in R ²
Coherence school learning / practice						
P: Specific competence – Learning	.37***	.24	-	.41*	.26	.02**
M: Coherence...	.23**			.53**		
P*M	-			.27*		
Teacher-centred approach						
P: Specific competence – Learning	.46***	.22	-	.61***	.22	.00
M: Teacher-centred approach	.09*			.27		
P*M	-			-.54		
Student-centred approach						
P: Specific competence – Learning	.44***	.21	-	.16	.23	.02**

M: Student-centred approach	.10*			.02		
P*M	-			.21*		
<hr/> School-based supervisor support <hr/>						
P: Specific competence – Learning	.39***	.21	-	.35***	.27	.06***
M: Role of school-based supervisor	.09			.10*		
P*M	-			.29***		
<hr/> Work-based supervisor support <hr/>						
P: Specific competence – Learning	.38***	.29	-	.00	.30	.01*
M: Role of work-based supervisor	.24***			.13*		
P*M	-			.14*		
<hr/> Access to workplace resources <hr/>						
P: Specific competence – Learning	.40***	.27	-	.35	.27	.00
M: Access to workplace resources	.34***			.30		
P*M	-			.01		
<hr/> Task variability <hr/>						
P: Specific competence – Learning	.42***	.23	-	.00	.24	.01*
M: Task variability	.11*			.34		
P*M	-			.16*		
<hr/> Task complexity <hr/>						
P: Specific competence – Learning	.45***	.25	-	.48*	.25	.00
M: Task complexity	.19***			.22		
P*M	-			.01		
<hr/> Autonomy <hr/>						
P: Specific competence – Learning	.40***	.22	-	.11	.24	.02**
M: Autonomy	.14**			.47*		
P*M	-			.22**		
<hr/> Task challenge <hr/>						
P: Specific competence – Learning	.41***	.27	-	.35	.27	.00
M: Autonomy	.29***			.24		
P*M	-			.02		

4 Conclusions

Findings from the students' collected data show that a key feature in the practice module design of initial vocational education programs is the supervision carried out by tutors both from the school and the workplace context. Results show that when tutors at school and at workplace have a strong presence during the practice module, the association between the specific competences learnt at school and their further development at the workplace is higher. Teaching approaches are significant moderators between learning specific competences at school and applying them at workplace. A student-centred approach increases this association, while a teacher-centred approach decreases this association. Some task characteristics are also significant moderators between the learning of specific competence at school and its use at workplace. Autonomy (having the opportunity to make decision), task variability (diversity of activities carried out during the workplace practice module) are two features which significantly increase the association between learning professional competences and their further development at the workplace.

Some implications for Initial Vocational Education programs design arise. First, the presence and function of the supervisor both at the school and at the workplace acquired greater importance although it has been neglected. We argue that the function of the supervisors is essential to help students develop professional competences. Second, the results highlight the importance that the curricula and the teaching approach should be more practice-oriented, that is, it should offer students the opportunity to rehearse their competence before going to the workplace. And in order to do so, tutors express that companies and educational institutions should work together. Third, the work environment characteris-

tics are crucial to allow students to put into practice their competences. The quality of the work environment is important to create a significant learning environment for students.

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Challenges and Opportunities of Work-Based Practical Training: A Comparison of Apprenticeship System and VET High-Schools in Turkey

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Abstract: The VET system in Turkey has a dual nature with its theoretical (school-based training) and practical (company-based training / practical training in schools) dimensions. This paper provides an account of the work-based practical training as reflected by the administrators and teachers that work at Vocational Training Centers or post-secondary VET schools in Turkey. The findings reveal that despite the benefits there are some difficulties or obstacles that are experienced in the implementation of enterprise-based skills training for the apprentices and post-secondary VET students.

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1 Introduction

Vocational and technical education in Turkey has a long tradition which goes back as early as 13th century with the foundation of a fraternity organization named *Ahi* Associations (Özyılmaz, 2011). These associations determined the rules and regulations in a trade, and how to run a workshop. An important function of *Ahi* Associations was training the young through work. Education and training in the *Ahi* system was dual in nature and integrated vocational training at the workshop, and general and social education at dervish lodge (*zaviye*, religious school). To become a master one would start as an assistant apprentice and through the years would become first an apprentice, then a journeyman, and finally a master (Çağatay, 1989).

When the Turkish Republic established in 1923, all schools were brought under the Ministry of National Education (MoNE) including vocational schools. According to the National Education Basic Law No. 1739, preparing individuals for an occupation, higher education or labor market is the objective of vocational and technical education. Until merged into a single directorate by Law No. 652 in 2011, there were four different vocational education directorates within the MoNE. Currently, General Directorate of Vocational and Technical Education is in charge of formal VET in Turkey; General Directorate of Lifelong Learning (*Hayat Boyu Öğrenme Genel Müdürlüğü*, HBÖGM) is the main body that runs apprenticeship training and non-formal VET courses. The VET system in Turkey has gone through reforms and new regulations, laws and the amendments to laws are all for integrating the formal, non-formal, and in-formal; and setting up the occupational standards, examination, and certification.

2 Background

The VET system in Turkey has a dual nature with its theoretical (school-based training) and practical (company-based training / practical training in schools) dimensions. The major types of VET provision are:

- Non-formal VET courses.
- Apprenticeship training, based on theoretical training at vocational training centers and practical training provided in workplaces where the person is employed.
- VET high-schools providing theoretical education and training at schools and practical training and internship at workplaces.
- Post-secondary VET schools offer two-year programs. Higher Education Council regulates these schools.

For the purposes of the present paper the focus will be on the apprenticeship training and VET high schools.

Apprenticeship training in Turkey targets mainly the primary education graduates who want to acquire a vocation through work. According to the Law No. 3308, to complement the work-based training with theoretical courses, one day a week, workplaces are required to send their apprentices to Vocational Training Centers (Mesleki Eğitim Merkezi – MEM). During the rest of the week, apprentices work at their workplaces under the monitoring of master trainers who are responsible for their work-based development. Around 105 thousand apprentices, 46 thousand journeyman, and 19 thousand masters attend to Vocational Training Centers which are non-formal vocational training institutions run by the General Directorate of Lifelong Learning (TURKSTAT, 2014).

In line with the objectives of general secondary education, upper secondary VET schools prepare students to work life as well as tertiary education. Although there is a diversity of school types, all the 9th grades employ the same general education courses both at general and VET schools. But, the Law No. 3308 also applies to VET high-schools and accordingly, at the 10th grade students at VET schools are directed to job families. By the 11th grade, the occupational branches related to specific job families are determined. Finally, at 12th grade enterprise-based skills training of VET students take place (MoNE, 2012). At 12th grade two days of the week students go to their schools for theoretical training and the remaining three days they go to enterprises for their skills training.

The practical training of the students at the enterprises is monitored by the coordinator teachers who are in charge of the planning, coordination, and implementation of enterprise-based training of the students (Özcan and Tamer 2013). At enterprises, master trainers, who have master-ship certificates, are responsible for the skills training of the VET students.

During the skills training, as it is the case with the apprentices, the insurance premium costs for "Occupational Accidents and Diseases" of the VET students are paid by the MoNE. Furthermore, during their enterprise-based training the VET students are paid at least 30% of the minimum wage.

3 The Study

The aim of this study is to explore work-based learning in Turkey through formal VET schools and non-formal apprenticeship system.

Although, work-based training has a long tradition in Turkey there are few studies that investigate the issue in a comparison. This paper focuses on the challenges and opportunities of work-based practical training provided for the apprentices and VET high-school students at workplaces

3.1 Method

Semi-structured interviews are conducted with directors and teachers at Vocational Training Centers, and coordinator field teachers at VET high-schools in Istanbul.

Narrative analysis with a thematic approach is used for analyzing the data. The findings of the study might be of value for understanding the challenges and opportunities of work-based practical training.

3.2 Findings

In Turkey, there is a well-developed apprenticeship system with all the laws, regulations, and institutions. However, the directors and teachers of Vocational Training Centers are of the opinion that the image of the centers and the status of apprentices are perceived rather low in the society (Ünlühi-

sarcıklı and Vos, 2013). When post-secondary VET schools and the enterprise based-training considered, practical training contributes to the students (EARGED, 2006). However, despite the benefits there are some difficulties or obstacles that are experienced in the implementation of enterprise-based skills training for the VET students.

The following provides the main conclusions from the interviews and presents the challenges for apprenticeship training and post-secondary VET schools in terms of work-based practical training:

- The working hours of apprentices at their work places are rather long, although there are regulations relating to the work hours. Therefore, the apprentices work long days and usually they work on Saturdays, the only day left them for relaxing is Sunday.
- Apprentices who attend to Vocational Training Centers are frequently school drop outs or have lower aspirations to pursue formal education; therefore, they are not enthusiastic to do the theoretical training.
- There is no standard for the enterprise-based practical training of the students in post-secondary VET schools. Most of the time students pass their time in the enterprises by doing office chores instead of doing occupation based work. Many times schools leave the selection of the enterprise for practical training to the students, and it is not uncommon that students do their practical training only on paper, which means they do not take skills training at enterprises seriously and are not doing it appropriately. One VET teacher proposed that in order to prevent such cases the matching process between the VET students and enterprises should be restructured.
- Although there are assigned teachers at post-secondary VET schools for each student for monitoring their practical training at the enterprises and reporting back to schools, such monitoring is not working very well since these kind of monitoring during the practical training is on a seldom base. In general, the dialogue between the school and enterprise for practical skills training of the students is maintained with individual efforts and relations, especially by the coordinator field teacher. In cases when the number of students to be monitored is too many, the coordinator field teacher is not able to monitor each student at a satisfactory level.
- There is a common agreement that the workshop facilities provided at post-secondary VET schools, and similarly at Vocational Training Centres are far behind the facilities provided by the enterprises active in the sector. Therefore, practical training at the enterprises considered very important for contribution to the vocational skill acquisition for both VET students and apprentices.
- There have been different views on the post-secondary VET school students, and apprentices who are going to Vocational Training Centres for their theoretical training: On comparison, some prefer apprenticeship training since it is 5 days at the enterprise and 1 day at the Vocational Training Centre, for them, that is more appropriate to the nature of skill based competency improvement; some others say VET system is more appropriate for skill acquisition since it is not only practical skills but theoretical and general knowledge that counts and gives more flexibility with more options to the person in life.

To conclude, the apprenticeship training and the post-secondary VET schools provide important opportunities for students. However, it is important to focus on the challenges and make improvements to better both systems.

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Session 3

WorldSkills Competition: Development of Vocational Excellence and Work Career

School-to-Work Transition and Development of Work Career of Vocational Skills Competitors'

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Abstract: This study investigates school-to-work transition and development of work career of past WorldSkills Competition (WSC) gold, silver or bronze medal winners. It also examines how they see the transferability of skills and competences from VET and WSC into working life. Semi-structured theme interviews ($N=51$) were conducted in 2013-2014 to the past Finnish WSC medal winners ($n=18$) who have entered the working life (1 to 15 years of work experience). In addition, also their employers ($n=16$) and colleagues ($n=17$) from the same workplace and vocational field were interviewed. According to results, WSC medalists reported higher level of expertise and useful contacts, and easier school-to-work transition than the control group members did.

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1 Introduction

Cognitive psychology has attempted to identify the source of high levels of performance or expertise in individuals over the past 30 years. To understand how experts think and act, much effort is needed to examine the differences between experts and those who lack this capacity (Billett, 2001). Earlier research on vocational excellence (Nokelainen, Stasz, and James, 2013; Nokelainen, 2015; Pylväs, Nokelainen, and Roisko, 2015) has focused on analyzing the characteristics of students and employees representing vocational expertise and excellence.

This study extends the existing research by investigating the impact of vocational skills competition experience to young adults' career development. Our focus is on the gifted individuals who have participated in an additional workplace-based training programme in their field of expertise related to vocational skills competition training. The target group has been evaluated to perform in the level of excellence in the Biennial international WorldSkills Competitions (WSC). WSC is the biggest vocational skills competition in the world where vocational upper secondary education students from over 60 countries compete for four days in more than 40 skills areas (incl. health care, hair dressing, and robotics).

This study investigates vocational expertise and school-to-work transition of past WorldSkills Competition (WSC) gold, silver, bronze medal and diploma winners. It also examines the target

groups' views on the transferability of skills and competences from vocational education and WSC into working life. We have formulated the following research questions: 1) What characteristics specify WSC medalists in working life?; 2) What kind of pathways describe the careers of WSC medalists in developing vocational excellence?; 3) How vocational education and competition training effect on the development of vocational excellence of WSC medalists in working life?

2 Theoretical framework

The theoretical background for investigating vocational development focuses on natural abilities (based on Multiple Intelligence (MI) theory, e.g., (Gardner, 1983), intrinsic characteristics (based on socio-constructivist approach to self-regulation, e.g., (Zimmerman, 2000), and extrinsic conditions (based on domain and non-domain related factors to talent development, e.g., (Connell, Sheridan, and Gardner, 2004; Greenspan, Solomon, and Gardner, 2004). Based on these components, the developmental model of vocational and professional excellence (DMVE) has been developed (Nokelainen, 2015) and currently empirically tested in different fields of vocations (Nokelainen, Smith, Rahimi, Stasz, and James, 2012; Pylväs et al., 2015).

Developmental pathways are examined from an initial interest towards profession and continue to upper secondary vocational education and working life. Based on the earlier talent research (Bloom, 1985; Greenspan et al., 2004), three stages of talent development has been identified through which talented children progress; initial participation (first attraction to the activity and initiation of formal instruction), perseverance (acquiring of basic and intermediate skills), and mastery (building upon the acquired skills to develop expertise and to compete at more advanced levels). External support is examined from the domain and non-domain point of view that illustrates the distinction between the individuals and artifacts are involved in the vocational activities in which an individual participates (such as colleagues, employers and coaches) and those that do not participate in the activity (such as parents and peers).

The importance of transfer in education is a fairly topical issue at the moment, particularly, when comes to the role of educational institutions in learning. Transfer of learning allow people to adapt to new situations, for instance, equip students with the ability to use what they have learned to solve new problems successfully or to learn quickly in new situations. (Tuomi-Gröhn, Engeström and Young, 2003) The theoretical approach to the concept of transition involves consequential change in the relation between the individual and one or more social activities across time and is now taking into account the changing social situations and individual's multidirectional movement from the organization to another, from home to school or from workplace to school and back (Billett, 2001, p. 62).

As workplaces are likely to be differentiated by factors that shape their practice, also expertise will be conceptualized differently across workplaces and there will be differences to which extent vocational practitioners knowledge can or should be transferred to situations or activities that are marked by difference (Billett, 2001), p. 62). Insights to the dimensions of expertise provided by cognitive psychology utilize those that account for social and cultural contributions to thinking, acting and performance. Not only expertise is seen to relate to participation in particular workplaces but it also takes into consideration that work practice is constantly transforming (Billett, 2001, p. 63). Becoming a full participant in a practice implies being capable with new activities, performing new tasks and comprehending new understanding that responds to the need for attributes of expertise to be adaptable and transferable (Lave and Wenger, 1991).

3 Methods

Total number of 51 semi-structured theme interviews (70-90 minutes) was conducted in 2013-2014 to the past Finnish WSC medal winners ($n=18$) who have entered the working life (1 to 15 years of work experience). In addition, the researchers also interviewed their employers ($n=16$) and colleagues ($n=17$) from the same workplace and vocational field (as a comparison group). The data from interviews was examined and categorized using qualitative theoretical content analysis approach (Schreier, 2014).

4 Results

4.1 What characteristics specify WorldSkills medalists in working life?

The WSC medalists, employers and control group members shared a quite similar view of the most important vocational characteristics; logical-mathematical skills, interpersonal skills, and self-regulative skills. Depending on vocational field, one has to have the necessary vocation-specific sensori-motorical skills (bodily-kinesthetic abilities supporting manual skills) and logical-mathematical skills (technical and contextual knowledge).

"Excellence then requires more logical thinking, to be able to apply everything one has ever seen, heard or done. Such skills and adequate work experience makes one to become a top expert." (Competitor)

All of the interviewed groups also emphasized the significance of interpersonal skills; knowledge of human nature, extrovert personality, energy and positive attitude, open-mindedness and encourage, flexibility and humility, customer service orientation as well as teaching and mentoring skills. In some cases, interpersonal skills were seen to even compensate the lower skills level in some other vocational areas such as manual skills.

The interviewees specified multiple self-regulative characteristics that they considered important or vital characteristics in their vocational expertise and vocational development: volition (concentration, calmness, carefulness, organizational skills) and internal motivation (ambition to learn and develop professionally, initiative). More specifically, the control group highlighted the importance of internal motivation.

"And perseverance and patience is needed in everything, because if there are any problems or other hassle, it takes time to make sense of it. Perseverance, that is needed at least." (Control group member)

4.2 What kind of pathways describe the careers of WorldSkills medalists in developing vocational excellence?

The background of the interviewees' initial interest towards their vocational field was partly consistent. Both groups, the competitors and control group, were influenced by their families and friends when choosing a profession. The most common statements were related to their personal interest in their vocational field, as well as the family background whether the interviewees' interest aroused from their relatives' professional traditions or home environments, an idea of their families' aptitude for certain professional field, or their relatives' encouragement to education in general.

"[Mother] has lived in a farmer's family, so hand skills have always been there, my uncle has developed patents to some agricultural stuff. But from somewhere there it surely comes. And in fact, I can see the same now in my two sons. Somehow they are more technically oriented." (Competitor)

The clear difference between the competitor and control group was seen in how the interviews described themselves as students during the study period. Most of the interviews representing vocational excellence considered themselves more successful than average students. Not only they actively studied in formal education but also in their spare time. Internal motivation towards their working field was highly emphasized when the competitors memorized their enthusiasm in vocational education.

"Yes, I was different from others. If I think back to our class, so yes I was certainly the only one who studied from morning until evening ... Maybe I strayed in the sense that I had a strong will to learn. I think that it might be me in a way was chosen for this event. Although we would have been other, I remember three potential which could leave." (Competitor)

Clearly more often than the control group members, WSC medalists reported of having the higher level of expertise, more professional networks, easier school-to-work transition, faster career ladder and more experience of responsible work tasks compared to average employees after the graduation. Also more than half of the employers observed that the competitor-interviewee working in their organization had especially high level of expertise.

“I could leave the business to run [by a competitor] quite confidently, he is that rock-solid professional, he knows what to do.”(Employer)

4.3 How vocational education and competition training effect on the development of vocational excellence of WorldSkills medalists in working life?

The benefits of the WCT competition experience and Skills training were acknowledged by all of the competitor-interviewees. Particularly, they reported to have gained boost for the career due to the increased level of expertise and widen professional networks (helping school-to-work transition and fortifying reputation and confidence in vocational field). Skills competition experience and training was evidently considered to strengthen self-regulative skills; volition (perseverance, exactness), motivation and self-reflection (stress-tolerance, self-confidence).

“The biggest factor are the contacts, for sure. But the fact is that the contacts were earned through my success in vocational competitions. And let's put it this way: if I would become unemployed for some reason, I would get a new job through these contact networks. In a very rapid schedule.” (Competitor)

Both interviewed groups, the competitors and control group, emphasized the significance of the workplace as a learning environment. Real work environment was considered to enable a student or novice employee to explore the authentic work tasks, learn by doing and get familiar with hectic schedule in any typical organization. Those employers who also discussed about workplaces as ‘a main learning environment’ considered vocational education to provide a student only some basic skills to perform in vocational field.

“... there should be more work, more hours of work. We did not have that much of client work. It would be important to have holistic work tasks, to have a specific time frame to manage the whole task, more orientation to authentic work.” (Competitor)

5 Conclusions

The three participating groups shared the view that vocation-specific skills, sensori-motorical skills (manual skills) and logical-mathematical skills (technical and contextual knowledge) are essential, but not the most significant part of one’s vocational expertise. Interpersonal skills were highly emphasized in all groups; having good social skills would even compensate the lower performance in some other skill areas. Self-regulative skills, volition, motivation and self-reflection, were also acknowledged as the vital characteristics within one’s vocational expertise and vocational development. However, one of the main differences between the competitor interviewees and control group was in the cognitive skills. The competitors underlined the importance of broad understanding of processes, and quick and independent problem-solving skills (incl. creative thinking) in order to excel in everyday work tasks.

Even if the three interview groups gave emphasis on the similar vocational skills, the research data showed some important differences between the competitors and control group related to their own experiences of vocational pathways. At the phase of becoming initially interested in a certain vocational field, both groups were influenced by similar factors whether it was their personal interest in a specific vocation or a recommendation by their family or friend. In few cases the interest originated from such factors as earlier work experience, study success or study possibilities. The vocational pathways of the interviewees began to diverge during the study period, as the most of the competitor interviewees, and only a few of from control group, described their study success as “better than the average”. The success was related to their internal motivation towards the vocation, inde-

pendent studying and practicing, conscientious and hard-working characteristics as well as advanced studying skills. Moreover, the skills training during the study period widely supported the competitor interviewees' development of vocational expertise and further their school-to-work transition and career progress. Employers also acknowledged the competitors' high level of expertise. The work-related future plans, related to private enterprise and further education, were quite equally discussed among both competitor and control group interviewees. However, the competitors more often referred to career progress and teaching.

These findings are in parallel with earlier research on school-to-work transition. In addition to the routine jobs, the school needs to prepare its teachers and students to work also as boundary-crossers between the school and the work-organization as they are bringing new intellectual and practical tools and insights into the change process. The best way to learn is to become engaged in real life processes of change already during the study period when relative novices and outsiders see things from a fresh angle, they have time to reflect and take initiatives, and they are not caught in the routines and turf battles of the workplace. (Tuomi-Gröhn & Engeström, 2003.)

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Session 4

International Comparisons of Occupational Competence and Modularisation of VET: Insights in Europe and Beyond

Modularisation and VET: The Quiet Revolution Crossing European Boundaries

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Abstract: The issue of modularising vocational education and training (VET) systems has been the subject of debate at European level. Modularisation of VET is regarded as one facet of a broader strategy to modernise training systems. The debate has already affected reforms at the system level, at the institutional level and at the practitioner level of VET in European countries. However, rather surprisingly there is little published evidence available to support the arguments for modularisation. One of the underlying tensions with this debate is how in fact can we adequately conceptualise the notion of modularisation to enable any coherent empirical analysis to be undertaken. The study attempts to do this and postulates different forms of modularisation. Against a theoretical backdrop we have chartered the development of modularisation structures within the IVET curriculum across 15 European countries. Furthermore, we have undertaken in-depth case studies of modular based qualifications in three of the countries.

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1 Introduction

The Modularisation of educational programmes in general schools, vocational education and training (VET) and universities has been an important innovation in many European countries. Modularisation of VET is regarded as one aspect of a broader strategy to modernise training systems (see Ertl, 2002; Howieson, 1994; Raffè, 1994). A key theme in the debate about modularisation is the form that individualisation and flexibility should focus on the extent to which a building-block or module-based system adequately meets modernisation needs. The debate has already affected reforms at the system level, at the institutional level and at the practitioner level of VET in European countries

(Pilz, 2009). However, rather surprisingly there is little published evidence available to support the arguments for modularisation (Ertl, 2002). This study¹ helps to fill this gap in research evidence.

2 Theoretical framework and localisation of VET approaches in the European countries

Despite the intensive debate about modularisation, there is no clear definition of modularisation in the education and training system (Warwick, 1987; Howieson, 1994). Different definitions have different reference points. The survey uses the definition of modularisation by Pilz (1999, 2002). Modules are self-contained section to a whole. Modularisation is the process of joining self-contained sections to a whole together or to fragment a whole into self-contained sections (Pilz, 1999). For the analysis of different module concepts in many countries, this definition alone is not sufficient. We need a concept which covers the diversity of modular approaches. Therefore a set of five criteria were described to explain the concept of modularisation. These criteria range from the radical form to the traditional forms of modularisation. The radical and traditional ‘holistic’ training, such as apprenticeships and school-based approaches are defined in detail in Figure 1. Both approaches are extreme types of vocational education with a continuum of mixed methods in between. There are different forms of modularisation that can understand as a range of dimensions across a spectrum, both with a ‘radical’ form of modularisation and traditional ‘holistic’ training.

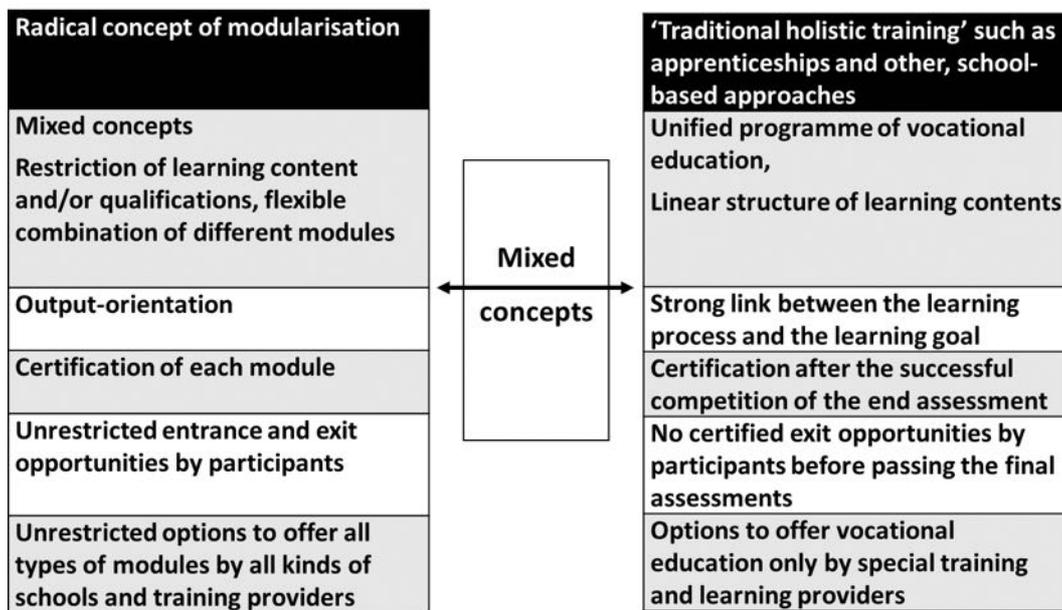


Figure 1: Spectrum between modularisation and ‘holistic approaches’. Source: modelled after Pilz, 2005, p. 210

Against this theoretical backdrop, we have chartered the development of modularisation structures within the Initial Vocational Education and Training (IVET) curriculum across 15 European countries by analysing relevant documents and background interviews with experts from all the participating countries. The 15 selected countries across Europe included smaller and larger countries that represent different training culture in the EU. The findings indicate that all countries in the study have already implemented or are planning to implement a kind of modularisation. Different countries have

¹ The authors wish to thank the European Center for the Development of Vocational Training, Dr. Roy Canning (University of Sterling), and Sarah Minty (University of Edinburgh) as part of the CEDEFOP project ‘Unitisation and modularisation for flexibility and mobility in VET’.

adopted different forms of modularisation, from the radical form to a milder version. Almost half of the countries show a combination of both forms (s. Figure 2).

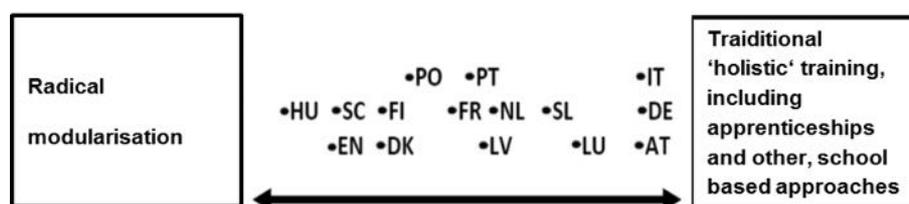


Figure 2: The Allocation of modularised IVET structure of European countries to the modularisation spectrum. Source: own research

Based on the findings across the European countries, three countries for the in-depth case studies were selected. The three selected countries were Germany, the Netherlands and Scotland. All three countries represent different examples from the spectrum of modularisation models. In Germany, the training programmes are belonging to a traditional holistic form. The Netherlands use a combination of different forms and the training programmes in Scotland have a radical form of modularisation.

Training programmes from six occupational areas (automotive, butchery, financial services, hairdressing, retail and warehousing and logistics) were selected for the case studies to represent a range of crafts, industries and trades.

3 Research method

Our methodology included both secondary and primary data collection. In the secondary data collection, existing literature and documentation within each country were analysed to identify current patterns of modularisation approaches to VET programmes (Lamnek, 2010). The primary data collection involved interviews with experts from each country (Kaiser, 2014). In total, 48 interviews were conducted in the six occupational areas. The experts for the interviews were social partners and training providers. The selection of interview partners covers both the political players and those implementing the VET programmes.

4 Findings

The findings of the in-depth case studies in Germany, the Netherlands, and Scotland, show that the three countries use different types of modular structures. There are examples of mandatory modules, specialisation modules, core and elective modules within the modular programmes. Mandatory modules are units of training programmes that have to be taken to complete the training. The Netherlands currently uses a mandatory structure. But the country is beginning to move towards a system based more on core and elective structures. Training programmes based on a core and elective structure that contains a combination of compulsory core and elective modules. The elective modules offer apprentices a greater depth of coverage of the vocational area. In Scotland, programmes consist of similar core modules at beginning, but then allow a broad area of elective modules. The specialised modular programmes involve the use of additional and specialised elements. In the case of Germany, the programmes in the survey are based on both - specialisation (elective programmes) and mandatory (Training building block programmes) structures.

In all three countries the modularised vocational trainings are highly responsive to the needs of employers. In contrast apprentices have limited choice in how they structure their programmes. Germany, for example uses the approach of the 'electives' as a modularised tool for flexibility that are welcomed by trade unions and employers. But normally the 'electives' as such are selected by training providers. In the case of Scotland, the training providers or lecturers are often the ones, who decide on the combination of optional units in SVQ2 to meet the requirements of the employer as well.

Only in terms of training duration did we find evidence of flexibility of for students. Both, in Scotland and the Netherlands, trainees could complete programmes in more or less time than expected.

Despite the political effort in the European countries, the data from the case studies indicate little use of credit transfer arrangements between the training programmes. In most of the cases, a lack of systems that attach credit points to modules may explain this lack of transfer. In Scotland, which does attach credit to modules, credit-based funding regimes may emphasise completion rather than progression. One of the factors that appeared to be a major obstacle to mobility within and between qualifications in different countries was the funding arrangement for students by public bodies.

Furthermore, some stakeholders have the fear that learners will leave the system with only partial qualifications. The findings show that partial qualifications are not widely used and tend not to have value on the labour market. Young people with partial qualifications often find it difficult to find employment. In Germany, for example, the interviewees showed no interest in partial qualifications. In the Netherlands, schools may offer certificates for individual core tasks but these are not formally recognised.

5 Conclusion

In broad terms there has been a quiet revolution taking place in the growth of modularisation across all European countries. Different countries have adopted different forms and structures of modularisation. There does exist a variety of modularisation approaches across the countries.

The findings of the in-depth case studies indicate that modularisation provides flexibility for employers to train their workforce in skills which meet their needs, but is still embedded in an overall framework or programme. But the findings show that provider-led training market tends to restrict student flexibility and mobility. Mobility and recognition of prior learning are aspects, which stakeholders are aware of, but do not have an important role in practice. The findings of the survey indicate some barriers which hinder the promotion of modular structures for IVET programmes.

The next revolution phase should include finding ways of eliminating or reducing these concerns and barriers to enhance the possibility of greater flexibility and mobility in a modernised VET system, especially for students.

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Session 5

Professional Antinomies and Professionalisation of Teachers & Teacher Candidates in China, Indonesia and the Baltic Region

‘Professional Antinomies’ as a Theoretical and Empirical Approach to Transnational Research on the Professionalism of Teachers in Vocational Education

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Abstract: This paper presents an approach to transnational research of teacher professionalism using the structural theory approach as well as the theory of symbolic interaction. After a problem outline and the statement of overall questions, the concept of ‘professional antinomies’ of teacher actions as a sensitizing concept based on the theoretical approaches mentioned is introduced. A research study on professional perceptions of vocational education teachers in the PR China will then be outlined and used as a research example to show how a transnational research design on teacher professionalism can be put into practice. Results and experiences made during the research process will then form the basis for discussion to conclude the paper.

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1 Introduction and Problem Outline

When discussing what teachers are supposed to know and how they should act in a school and classroom environment, educational and political ascriptions as to the ‘how’ and ‘what’ of necessary teachers’ activities and corresponding teacher training content are often used for argument (in regard to, for example, necessary ‘teaching skills’ or ‘competencies’). Those same questions receive a lot less attention from an ‘inner’ perspective, actually asking practitioners about the ‘why’ and ‘for what’ of (vocational) teacher training content and knowledge for their daily routines and from their point of view. Questions that can be raised here are: how do vocational teachers actually perceive their profession? Which are – from their perspective – the tasks and challenges they face every day and how do they go about coping with them? Which strategies and processes are applied and is there something like a ‘common knowledge’ of how things in the vocational school classroom ‘are done’?

While these questions form a topic of their own on the national level, they receive another twist in an international/transnational setting. In addition to (yet widely unanswered) questions of perception of the nature of work in (for example) Germany, one has to take into account national (and even cultural) specifications in different countries. Those are bound to influence the way teachers reflect on their own practice and their profession, thus making it more complicated to find common ground for discussion of topics that supposedly have the same meaning in different countries, but might have somewhat different connotations in each. One of those topics is the question of professionalism and professionalization of teachers which, in turn, would then reflect back on teacher training content and/or further education measures..

From a researcher’s point of view, the challenge is to find a theoretical and methodical setting which allows for answers to the following overall issue: How, if at all, is it possible to conduct transnational research of teacher professionalism? An outline of an answer to this question is the subject of this paper. A theoretical framework (or a heuristic concept, rather) that has proven itself valuable to me is that of ‘professional antinomies’ of teacher action. In a methodical and methodological per-

spective, group discussions and the documentary method can be an effective research approach. I will outline both aspects by the example of a research study that focused on teacher professionalism in the PR China.

2 'Professional Antinomies'

The idea of 'professional antinomies' of teacher action was first discussed in the structural theory approach on teacher professionalism (see Oevermann, 1996/2002) as well as the theory of symbolic interaction (see Schütze, 1996). Helsper (2004) then picked up on these approaches and developed a heuristic concept that arranges contradictory calls for action for teachers (which he sees as constitutive for the profession) in four different areas: First, there are contradictions and antinomies that lie on the very base of the teaching profession. This is, for example, the task of approaching and developing each student as an individual person (with a specific history/background, certain needs and goals etc.) while at the same time teaching a whole class with a general curriculum and aims that should be met by everyone in that class at the same time.

The second area refers to contradictions that result from the way the school system itself is organized. Here, for example, compulsory education might contradict the curiosity of young people wanting to learn new things anyway, thus taking away motivation. Or, as another example, periods are usually set for a specific amount of time (e.g. 45 minutes), whereas it could make more sense to teach about topic x for 90 minutes or even a full day.

The third area concerns dilemmas that might come to light in specific situations that would have to be observed and discussed live as they happen.

Finally, the fourth aspect influencing teacher actions are societal developments that occur outside the classroom, but don't stop outside the classroom door. Helsper himself refers to modernization theory approaches to describe developments in society that influence the way teachers work and teach, like the individualization-, pluralization-, differentiation- and civilization paradox.

Therefore, with Helsper it can be said that teachers (regardless of the area in the educational system) are faced with constitutive, contradictory challenges in different areas and on different levels. They could directly concern the interaction between teachers and students, but might also reflect on the relationship between educational structures and teacher autonomy or on societal developments and the way they are incorporated into the things that happen in a classroom environment. Because this heuristic concept is not tied to a specific area of the education system or any specific cultural context, but rather sensitizes for the very nature of pedagogical work in general, it seems suitable for the use in transnational professionalization research.

3 Research Example: 'Professional Antinomies' of Teacher Action in the PR China

For a research study undertaken as a Ph.D. project at Magdeburg University, I conducted group discussions with Chinese vocational education teachers from different parts of the country, but the same level in the Chinese vocational education system. All were teachers of technical subjects and working in secondary education. Therefore, they were teaching students in initial vocational training on a school level.

The research interest was, in accordance with the thoughts outlined above, how Chinese vocational education teachers actually perceive their profession, which challenges, paradoxes, contradictions and tasks they experience and how they cope with everything that is expected from them and that they expect from themselves in every day working life.

The research questions were:

- Which antinomies of professional teacher action emerge from the perspective of Chinese vocational education teachers?
- What scope of design is perceived for own professional actions?
- In which way do modernization processes influence professional actions of vocational school teachers in the PR China?

I was led by the assumption here that if the Helsper model actually holds true for any kind of pedagogical work, regardless of school level and subject area, it would also have to be applicable in intercultural/transnational contexts.

The group discussions mentioned above were conducted in Chinese together with an interpreter who at the same time served as a second researcher, thus having been briefed in the research questions/research design and the group discussion method. The discussions were recorded, transliterated into Chinese and then translated into German. For analysis, the documentary method (see Bohnsack et al., 2007) was used. It follows three steps to interpret the material: Firstly, a 'course of discussion' is determined by stating which topics were brought up one after another during the group discussion. Topics of interest (in regard to the research questions) are then chosen for further analysis and restated in the researchers' own words, thus giving answer to the question *what* (content-wise) was actually being said. In a third step, the statements were then interpreted as to *how* the topic of discussion was being discussed, bringing to light underlying motives, orientations and shared content knowledge across the material and always in relation to the discourse around the statement that is subject to the analysis.

After undergoing this process individually for the three cases/groups in the research project mentioned above, three different levels of results were explicated: On the first level, I was able to identify professional orientations of each individual group. On a second level, the orientations of the individual groups were aggregated on a meta-level to find common orientation frameworks. Those were:

- 'Tradition and modernization';
- 'Teacher-student relationship'
- 'Voids and deficits';
- 'Researcher-informant discourse' and
- 'Good teaching practice'.

Within the frameworks that refer to common/shared perceptions of the teaching profession across all cases, the three individual groups now represented certain specifications. 'Tradition and modernization', for example, refers to an area of conflict between traditional ideas or ascriptions of teacher action and modern requirements that teachers face. While the first group was solely relying on the traditional ascriptions to cope with daily challenges and struggles, the second group was deciding case-by-case whether to follow traditional ideas or modern concepts to cope with the certain issue at hand. The third group, however, was discussing various challenges that arose from the area of conflict mentioned, having the feeling of being pushed back and forth between tradition and modern approaches.

On a third level, the orientation frameworks were then put into relation with the heuristic concept of professional antinomies, focusing on contradictions expressed in each of the frameworks and discussed within the different groups. This led to the following adaptation of the Helsper model:

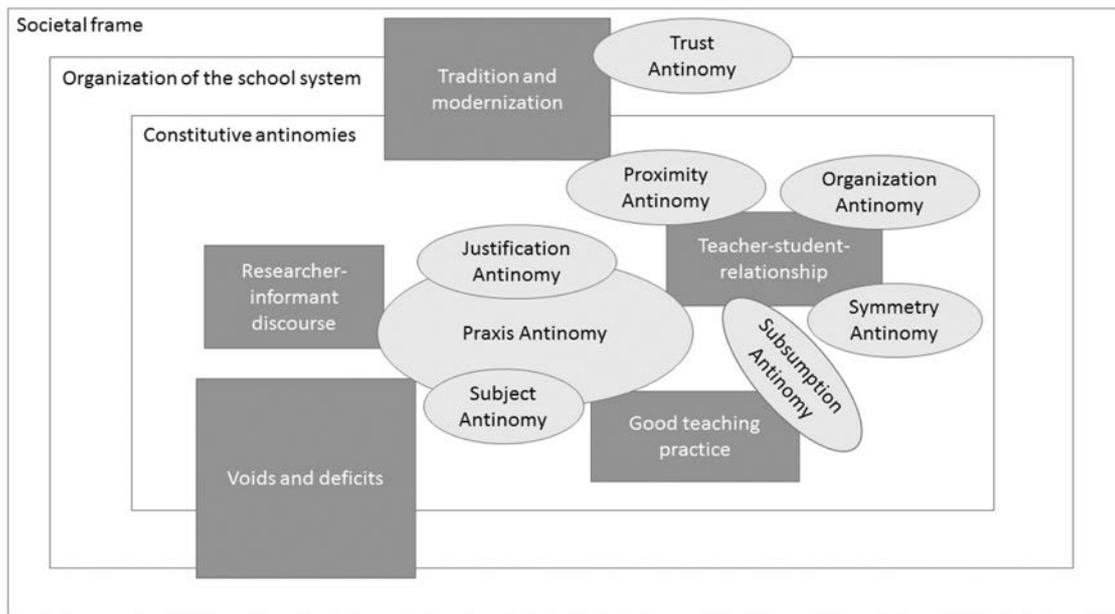


Figure 1: Adapted model of professional antinomies

The different frameworks explicated could be placed on different levels of the model. ‘Tradition and modernization’, for example, incorporated topics that related to all three levels, whereas ‘Good teaching practice’ referred to issues at the very base of the teaching profession. Within each framework, certain contradictions were expressed that translated into the antinomies stated in the Helsper concept, thus giving an indication of how the teaching profession presents itself to the Chinese professionals from their perspective.

Overall (among further results not discussed here that can be tied to, for example, educational theory), I was able to differentiate Helsper’s heuristic concept for the Chinese context as a first take on how Chinese teachers might look at their profession in the light of current challenges and daily routines from a ‘Western’ researcher’s point of view.

4 Discussion

While, as a result of my research, the Helsper model proved itself to be valuable for the explanation of research findings in a transnational setting, it has to be kept in mind that of course this model was developed in a certain cultural context. It is therefore useful to sensitize for phenomena explicated in cross-cultural research, but cannot (and is not intended to) eliminate a certain cultural bias. This could probably be done by interpreting the research findings further in the Chinese context and/or by conducting larger scale assessments of the theoretical constructs described in the research report.

Furthermore, the research design with group discussions and the documentary method for analysis provided, in my opinion, a reliable pathway for transnational research. This is because the research method as well as the steps of interpretation/analysis incorporated in the documentary method are based on the discourse and its analysis itself, thus helping to limit loss of data that might occur through translation processes. In other words: If a single term is or cannot be translated and transported without loss of meaning from one language to the other, a close look at the discourse structure itself and the way a topic is being discussed can still give way to the extraction of meaning and commonly shared knowledge.

The study outlined here concludes with further research questions that encourage follow-up projects and research designs: Firstly, not all ‘professional antinomies’ laid out theoretically by Werner Helsper came up during the discussions that were conducted. This might be tied to the setting, but also to the assumption that not all constitutive antinomies are equally emphasized in the perspective

of Chinese vocational education teachers. This would, in a sense, reverse the research question I followed into something like: 'What don't we see and why don't we see it?' Furthermore, in my research findings no differentiation could be made as to special requirements or emphases of specific antinomies in certain subject areas or in regard to, for example, gender. Here, a more distinguished research design with a focus on these areas would be needed, enhanced with research methods like participatory observation or problem-based interviews.

Concluding, it can be stated that 'professional antinomies' of teacher action are well suitable to get a better understanding of phenomena linked to the teaching profession from the professionals' point of view in a transnational setting. However, further research is needed to further differentiate the heuristic concept proposed by Helsper and to show possible professionalization pathways based on the assumptions made in it.

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TVET Teacher Training and Implementation of Concept of Vocational Disciplines in China

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Abstract: The progress of the economy and technology has proposed new demands for the professionalisation of technical and vocational education and training of teachers (TVET). Vocational and Technical Normal University (VTNU) plays an important role for TVET teacher training in China. It's crucial for the qualification and professionalisation of TVET teachers by setting up the discipline for TVET teacher training in VTNU. The article briefly reviews the genesis of VTNU, and then makes clear the specific problems about VTNU through investigating five of the similar types of institutes. Suggestions have been put forward so as to establish the disciplines of TVET teacher training.

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1 Introduction

TVET assumes significant responsibility for skilled talents. TVET teachers, as facilitators for vocational learners, have become one of the core professions in knowledge-based society. The quality of TVET teachers is a key factor to enhance the quality of TVET. As the special TVET teacher training institutions, Vocational and Technical Normal Universities (VTNUs) are of crucial importance for the qualification and professionalisation of TVET teachers in China. But there remain many difficulties in establishing a systematic study programme for TVET teacher training due to the short development history and the weakness of relevant research. Presently, the study programme of TVET teacher training is not incorporated into the specialties catalogue of higher education of the Ministry of Education (MoE). Each VTNU arranges its study programmes/majors based on its own limited teaching experience, ability and its superficial understanding on TVET, without systematic planning of their educational work (Zhao, 2002). How do we set up a “vocational discipline” to train TVET teachers? It has become an important issue to resolve.

2 The Genesis of the VTNU and Current Problems

2.1 Genesis of the VTNU

The VTNUs were established and developed under a specific background. In 1980, in order to solve the shortage of secondary vocational education teachers, study programmes for TVET teacher training were set up in several provinces and cities in China. In 1985, 13 independent VTNUs based on those universities/colleges were established to train teachers for secondary vocational schools. In the late 1980s, some key comprehensive universities, like Tianjin University and Southeast University, successively established affiliated institutes of vocational and technical education. By that time, TVET teacher training had been formed and composed of independent TVET teacher training colleges (VTNU) and affiliated institutes for TVET teacher training in universities together (Cao, 2010).

Presently, there are 140 normal colleges and universities in China to train teachers in general education and 40 TVET teacher training institutions. There are 32 affiliated institutes for TVET teacher training located in comprehensive universities. Among the 40 institutions, eight of them are independent VTNUs, accounting for 5.6% of the total number of normal colleges/universities in China.

Statistics from the MoE in 2011, 2012 and 2013 show that the proportion of the secondary vocational school students and general high school students is 47.3%, 46.1%, and 44.1%, respectively (MoE, 2013). The enrolment of secondary vocational education has nearly occupied half of the whole high school education. Theoretically, the quantity of the teachers in the two types of schools should be roughly equal. But the quantity ratio of the two types of teacher training institutions is only 8:140. There is an extreme quantity inconsistent between the two types of teacher training institutions.

2.2 Current Employment Situation of the Graduates of VTNU

Although the situation of VTNUs is far from satisfactory on both aspects of quantity and quality, many graduates of VTNUs are reluctant to engage in TVET teachers. We analysed five agronomy study programmes of VTNUs. The results show that only 10–20% of graduates chose to be a teacher in secondary vocational school. Further research based on five majors in a VTNU also manifests a phenomenon: merely 28.16% of the graduates are willing to work in the secondary vocational schools, 46.20% of them are hesitant about becoming a TVET teacher, and the graduates who are completely not willing to work in the vocational school account for 22.31% (Zhang, 2009). All of these data, on the one hand, prove that the secondary vocational schools are less attractive for VTNU graduates; on the other hand, it demonstrates that the VTNU graduates cannot meet the requirements of vocational school because of the deficiency of knowledge and professional ability.

3 Curriculum and Problems in VTNU

In order to improve the quality of TVET teacher training, the Chinese government and the VTNUs took many policies and measures to promote capacity building of the study programme and to establish a vocational discipline. According to the *'Suggestions on the Implementation Plans to Improve the Quality of Teachers in Vocational Colleges'* (Jiao Zhi Cheng [2011] 14), which was published by the MoE and the Ministry of Finance (MoF) in China, the ministries supported TVET teacher training institutions on a Bachelor's level and other excellent relevant institutions, who have advantages in the aspect of related disciplines, to organise vocational colleges, industry and enterprises to jointly develop curricula and teaching material for 100 study programmes for TVET teacher training at an undergraduate level, so as to strengthen the connotation construction of the TVET teacher training system (MoE, 2011). We take one of the typical VTNUs - Hebei Normal University of Science and Technology (HNUST) - as an example to investigate the implementation situation of this project.

HNUST is a university financed by the provincial government, and is one of the eight independent VTNUs who acquired approval by the MoE. In 1999, HNUST was identified as one of the first "National Key Training Institutions of TVET Teachers" with the characteristic of an agronomy major. According to official documents, the study in HNUST aims to "educate students to become applied and integrated talent in the aspects of science, technology and management, who will work

on the industry of technology and design, production and development, operation and management, teaching and research, which related to plant science and plant production” (Training Programme of the HNUST, 2014). As an example, Table 1 shows the curriculum arrangement and the credit proportion of the major “Plant Science and Technology”.

In order to achieve the qualification standard of TVET teachers, specific training requirements have been proposed from the aspects of professional requirements as a teacher and occupation certification in the business sector to regulate the study programme. With a guideline of “professionalism, academics and applicability”, HNUST lays emphasis on the development of practical skills and comprehensive professional ability of the students. In spite of many efforts, there is a series of problems represented from the table above.

- Most of the specialised courses come from corresponding agronomy science of research-oriented universities, the contents of which hold strong characteristics with fundamental principles and theories. Although the names of some courses have been changed, it still doesn’t get rid of the curriculum paradigm of the “subject system”.
- Pedagogy and psychology are the main teacher training courses, but the training effect is not satisfactory, owing to the lack of experience in teaching design and curriculum development. The quantity of pedagogical-didactical courses is far lower than the international standard, which is 22–35% of the total courses (Xu, 2005).
- The credits and study time of the practical training are far below the requirement of 18 weeks in the “Teacher Education Curriculum Standard” required by the MoE (MoE, 2011).

4 Conclusion and Suggestions

Although there are specialised institutes for TVET teacher training, it still brings a great challenge for VTNUs to establish special discipline for TVET teacher training due to insufficient quantity and quality. In order to meet the needs of TVET development, VTNUs should make clear their training goals and orientation, and develop vocational disciplines.

4.1 Strengthen the Construction of Policies, Regulations and Institutions

Because of the existing problems, it is advisable for government to introduce supporting policies and measures to promote the discipline construction of TVET teacher training.

- To treat TVET teacher training as a specific type of education in the classification of higher education, and strengthen the planning, supervision and construction of it.
- To stimulate VTNUs, normal universities/colleges and comprehensive universities collaborate to train master and doctor graduates through establishing cooperative postgraduate programmes.
- To carry out an evaluation and monitoring system for TVET teacher training to ensure the education quality.
- To promote the professionalisation of TVET teachers by improving relevant policy, teacher qualification standards, and the supervision and evaluation system of TVET teachers, so as to provide an institutional guarantee for the TVET teacher’s professionalisation.

4.2 Innovate the Curriculum in VTNU

In order to promote the quality of TVET teacher training, an International Framework Curriculum for a Master Degree for TVET Teachers and Lectures was drawn up by UNESCO–UNEVOC in 2004 (UNESCO/UNEVOC, 2004). The core point of this curriculum framework is to develop major discipline to increase innovation and excellence in TVET teacher education. Twelve vocational disciplines were defined which represent the occupational domains in which vocational education is involved. According to that, VTNUs can draw on a disciplinary structure which allows for transparency: mutual recognition of programmes. Practice shows that there are difficulties in implementing this programme. The problem is not the lack of specialised institutions for TVET teacher training, but rather

the scarce capacity in the aspects of the curriculum and research level of these institutions (namely VTNUs). Drawing lessons from this “framework”, TVET teacher training students should study vocational discipline and educational science, where it is advisable to link the pedagogical contents to the respective occupational contents.

4.3 Emphasise the Research on Vocational Disciplines

Vocational discipline concerns the basic learning contents of a TVET teacher, which mainly research the practical competence required for technical workers and technicians in the world of work. The task of vocational discipline is to investigate and analyse knowledge, skill and competence applied in occupational practice. There are essentially areas of responsibility, for which TVET teachers have to prepare themselves during their university studies, developed by different universities (Rauner and Pahl, 2008). In China, research and teaching on vocational discipline are involved in a few universities, such as Tianjin University of Technology and Education and Beijing Normal University. It calls for more TVET research on vocational disciplines in a broader field of vision.

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Teaching-Learning Strategy for Developing Critical Thinking and Creativity for Engineering Student Teachers

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Abstract: Critical and creative thinking is very important, but Vocational Education and Training (VET) teachers are weak in these two skills. This research aims to develop a teaching–learning strategy that is able to improve those two thinking abilities. The concept of critical thinking used high-order thinking integrated with metacognitive, while creative thinking adopted the concept of “inside the box”. The teaching–learning strategy adopted problem-based learning (PBL). The development of the learning strategy used a 4D method, but only as far as the third D. The research was conducted at the Faculty of Engineering of the State University of Surabaya in 2013 and 2014 with 258 student participants. The result shows that after using the strategy, students’ average score on critical thinking skills was 3.60 and creativity was 3.12, even though the students got a low score on self-regulation (2.97) and originality (2.78). The result also indicates that the course is good (score of 3.46) and that 91% of students enjoyed the course.

1 Introduction

The vast development of technology means that competencies in the industrial era are no longer fit; therefore, it is time to review the teaching–learning model used (Samani, 2014). Wagner (2008) states that schools in the USA do not equip students’ competencies to face the 21st century. He says that to be successful in the 21st century, people should have survival skills. Among that series of skills, they have critical thinking, problem solving and imagination. Trilling and Fadel (2009) propose what they call the 21st century skills, which also contain critical thinking, problem solving and creativity.

To guide the students to acquire those skills, teachers should own these skills; consequently, the prospective teachers in Vocational Education and Training (VET) should be able to think critically

and creatively. Unfortunately, those two competencies have not gained serious attention. Studies conducted by the State University of Surabaya showed that the VET teacher candidates' abilities in both competencies were still weak (Samani and Palupi, 2013). Interviews with them revealed that critical and creative thinking has not been given any emphasis during the lectures. The Faculty of Engineering at Teacher Training University has not put creative and critical thinking skills as learning objectives for student teachers.

This research aims to develop a teaching–learning strategy to improve the ability to think critically and creatively for VET student teachers. If it is found, the model can be applied in lectures, so that the development of creative and critical thinking skills can be carried out effectively.

2 Theoretical Framework

2.1 Critical Thinking and Creativity

There are many definitions of critical thinking. Paul and Elder (2006, p. 4) mention that critical thinking is the ability to analyse and evaluate with intention to improve. Therefore, critical thinking is categorised as high-order thinking, and when it is compared to the new version of Bloom taxonomy it covers two levels, namely analyse and evaluate (Anderson and Krathwohl, 2001). Paul and Elder (2006) also mention that in critical thinking, someone should be self-directed, self-disciplined, self-monitored, and self-corrective. Likewise, Lai (2011) states that critical thinking contains some components of analysing, inductive and deductive inferring, assessing or evaluating, and deciding or solving problems.

According to Kun (in Lai, 2000, p. 18), critical thinking was a form of metacognition, which includes metacognitive knowing, meta-strategic knowing, and epistemological knowing. In this research, critical thinking concepts and metacognitive were integrated and elaborated in six aspects: interpretation, analysis, evaluation, inference, explanation and self-regulation (Facione, 2013, p. 5; Koeswiyah, 2012).

Creativity is not a single concept; consequently, there are many definitions to explain it. Amabile (in Cremin, Craft and Clacke, 2012, p. 17) states that creativity is understood to be a construction of ideas or products which are potentially useful. Selter and Bentley (in Craft, 2001, p. 15) mention that creativity concerns the new way in the implementation of knowledge and skills. Some skills need to be acquired by students to be creative. They are the ability to identify a new problem, to transfer knowledge from a different context, and to centre attention to reach a goal. There are still other definitions, but most of them have a similarity, especially in generating new ideas within or across domains of knowledge, drawing upon or intentionally breaking away from established symbolic rules and procedures (NCSU, 2014, p. 17), or the ability to find many possible answers from a certain problem (Munandar, 1990, p. 48).

Because creativity is multidimensional, its aspects differ (even though they have much similarity). NCSU (NCSU, 2014) mentions that creativity includes originality, adaptability or flexibility, appropriateness and contribution to a domain. Meanwhile, Filsaime (in Nurlaela and Ismayati, 2014) and Munandar (1990) mention that creativity includes fluency, flexibility, originality and elaboration.

Being creative needs an open mind. Craft (2001, p. 19) mentions that creativity needs to be open for accepting the unknown and the unexpected facts or ideas, to connect between unconnected ideas and integrate different ways of thinking, to hold the paradox of form, to hold the tension between safety and risk, and to be willing to receive critics. Willings (in Davis, 2005) states that creative thinking should implement adaptive, elaborative and developmental thinking.

In this research, the concept of creative thinking adopts the concept of “inside the box” (Boyd and Goldenberg, 2013), since it is directed towards creating innovations (Cremin, Craft and Clacke, 2012). The “inside the box” model, with its Systematic Inventive Thinking (SIT) method, is also easy to implement.

Although critical thinking and creative thinking are two different skills, Paul and Elder (2008) mention that they are mutually complementing. Creativity is a process of making or producing, while critical thinking is a process of assessing or judging, like two sides of one coin (Lai, 2000, p. 18). To think creatively, a person requires critical thinking skills in order to analyse the product which will be

made creatively. In contrast to master critical thinking, especially in solving problems, it requires creativity in order to find good solutions (Samani, Nurlaela and Ismayati, 2014). That is why Paul and Elder (2008) mention that although both can be differentiated, in the process they become one sequence.

Creativity normally arises when somebody solves problems freely and recognises the problems as well. Therefore, learning should be directed in the form of solving real problems in his/her daily life. The Systematic Inventive Thinking (SIT) model proposed by Boyd and Goldenberg (2013) is used in the teaching–learning strategy to encourage students to think creatively.

2.2 Problem-based Learning

Considering the main purpose of learning is to develop critical thinking skills and creativity, the learning model should be designed to encourage students to analyse some things critically and then drive them to produce ideas. Therefore, teaching–learning strategy should stimulate students with questions such as ‘*why*’ and ‘*how*’ and not merely ‘*what*’, ‘*how many*’ and ‘*where*’. Probing questions such as ‘*how*’ and ‘*why*’ will stimulate students to think critically and analytically.

Arends (1997, p. 12) offers five models of learning: direct instruction, cooperative learning, problem-based instruction, discussion, and learning strategies. Although in practice the five models can be combined, each has a different purpose and theoretical basis. Problem-based instruction, which is based on constructivist theory, is the most appropriate to develop the ability to think critically and creatively, because the problem to be solved will force students to expend their creativity to solve them. The students will certainly analyse the problem critically in advance.

Problem-based instruction is also called project-based learning, experienced education, authentic learning and anchored instruction (Arends, 1997, p. 156). The statement depends on the problem to be solved. Yet, Dickens and Arlett (2009) differentiate both because project-based learning is more a research-based approach, while problem-based learning is more an exploration of scenario-driven learning experience.

In this study, the problem-based instruction model is used but the task at hand is a comprehensive project, so the model is called problem-based learning (PBL). The implementation of project-based learning made students enjoy the lectures, because they explore their ideas to accomplish their tasks (Courter, 1996).

However, studies carried out by Thomas (2000, p. 36) conclude that the students find difficulties in performing self-direction, primarily when doing a complex project, especially concerning aiming the research, arranging time, and utilising technology productively. Therefore, the teaching–learning strategy was equipped with a course outline, students' book, observation sheets, students' questionnaires, and learning outcome tests.

To compel students to think critically and creatively, PBL uses five criteria proposed by Thomas (2000, pp. 3–4), namely: (1) PBL projects are central, not peripheral, to the curriculum; (2) PBL projects focus on questions or problems that "drive" students to encounter the central concepts and principles; (3) projects involve students in a constructive investigation; (4) projects are student-driven; and (5) projects are realistic, not school-like.

It is not easy to design teaching–learning assignments that meet the five criteria, particularly the fifth criterion. Nevertheless, the research tried to develop as close as possible to the real problems faced by student teachers of the VET field. Discussions with students were conducted prior to the teaching–learning design to suit their needs and prior learning abilities.

3 Methods

The development of the teaching–learning strategy used a 4D method (define, design, develop, disseminate), followed by an experiment to test the strategy developed (Thiagarajan, Semel and Semel, 1974). This study was implemented as far as the third D, while the fourth D (disseminate) was not carried out. The 4D model was chosen as it is the simplest one and is easy to implement compared to the system-oriented model (Dick and Carey, 1990) and classroom-oriented model (Kemp, 1985).

The define phase was started with front-end analysis to determine the students' characteristics and prior learning abilities. Based on these data and compared with the competencies to be achieved at the end of the study, the students' learning needs were formulated. Although the main aim was to develop the ability of critical thinking and creativity, the two abilities should be integrated into the subject learned.

The research includes two subjects from each department: engineering subjects and teaching-learning subjects. It also examined whether there were differences in the students' achievement of creative and critical thinking skills in the two kinds of subjects.

At the design phase, the teaching-learning format, teaching materials, media, and students' test and instrument for observation were formulated. The teaching-learning sets were then developed and tested in the develop phase. The experiment used a one-group post-test only, since the ability to think critically and creatively has never deliberately been developed and tested in the results before.

The experiment of PBL strategy was conducted at the Department of Mechanical Engineering, Electrical Engineering and Civil Engineering, Faculty of Engineering of the State University of Surabaya, especially for students who learnt to be VET teachers in 2013 and 2014. It involved 258 students. During the teaching-learning process, thorough observation was carried out to examine students' response in attending the courses. After the course was completed, anonymous questionnaires were distributed to students to give feedback on the course they joined.

4 Findings

Table 1 shows that the PBL used in this research can develop students' critical thinking skills (average score of 3.60 for the score range of 1–4). The lowest score was on the aspect of self-regulation (2.97). Table 2 shows that the PBL used is also able to develop students' creativity (average score of 3.12, with the lowest score on originality aspects (2.78)).

Table 1. Students' Achievement on Critical Thinking

Aspects of Critical Thinking	Mean of Students' Score		
	Engineering Subjects	Teaching-Learning Subjects	Combination
Interpretation	3.88	3.87	3.88
Analysis	3.81	3.77	3.79
Evaluation	3.57	3.54	3.56
Inference	3.64	3.66	3.65
Explanation	3.73	3.76	3.75
Self-regulation	2.97	2.96	2.97
-	3.60	3.59	3.60

The observation carried out shows that students are active during the learning-learning process, with 92.2% being active and 7.8% being less active. Students also seem cheerful during their activities in the classroom. From the questionnaires distributed after the lecture finished, 69% of students enjoy the learning process, 22% are pretty pleased, and 9% are less pleased. Observations also indicated that the quality of the course is good, with a score of 3.46 with the following details: opening activities is 3.58; main activities is 3.54, and closing activities is 3.33.

Table 2. Students' Achievement on Creative Thinking

Aspects of Creativity	Mean of Students' Score		
	Engineering Subjects	Teaching-Learning Subjects	Combination
Fluency	3.25	3.21	3.23
Flexibility	3.19	3.22	3.21
Originality	2.78	2.78	2.78
Elaboration	3.25	3.26	3.26
-	3.12	3.12	3.12

Why was the score for self-regulation only 2.97, and even only 2.94 when it was broken down into the sub-aspect of self-examination for teaching subjects? Interviews with students and discussions with observers found out that the students had not yet been familiar with doing introspection, testing and correction to their proposed ideas. The observation also found out that they often argue without basic, solid arguments. It was supported by the data revealing that the ability to evaluate is not relatively high (3.56) compared to interpretation (3.88), analysis (3.79) and explanation (3.75).

Why was the score for originality only 2.78, whereas the students were very active during the course? Free discussion with the students after class showed that they were trapped by the idea mentioned in references and examples discussed during the course. Probing questions given by lecturers have also not encouraged the emergence of students' new ideas.

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Session 6

Co-Developing “Learning Toolbox” – Building Capacity in Online Learning – Promoting Mobile Technologies in Working and Learning

Research Workshop “Co-Developing ‘Learning Toolbox’ – Building Capacity in Online Learning – Promoting Mobile Technologies in Working and Learning”

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Abstract: This paper discusses the work of two parallel European innovation projects. The contributors from **the Learning Layers project** present the participative design of ‘Learning Toolbox’ to support learning at workplace (in construction sector). They analyse the change of the application partners from observers to co-designers and to multipliers of innovations. They also report on project-initiated Multimedia Training and its further development into an internal peer-learning framework in the training centre Bau-ABC. The contributors from the EmployID project report on experiments with adapted MOOCs as means to support professionals in public employment services. In this context the role of a Social Learning Platform as support for online learning (that focuses on *labour market data* and *learning analytics on workplace learning*) is highlighted. In a joint workshop the project teams discuss the particular innovation processes they have supported and the prospects for enriching the parallel innovation concepts.

1 Introduction

The ongoing EU-funded Learning Layers project seeks to promote uses of web tools, online learning and mobile technologies as support for occupational work and (informal) learning at workplace. The North-German partners are responsible for research and development activities and pilot initiatives in the building and construction sector. This sector (alongside the healthcare sector) was chosen for the pilot since the use of digital media, web resources and mobile technologies has been overshadowed by several obstacles.

In the construction sector pilots, the partners have progressed from initial mapping to focused co-design processes with application partner organisations (in particular the intermediate training centre Bau-ABC). Based on the first phase of pilot activities the project is expected to promote the scaling up of innovations. In this context, the project supports the development of its application partners as multipliers of innovations. At the same time the project works together with interested networks, SME clusters and support initiatives.

This workshop focuses mainly on the participative design process of the ‘Learning Toolbox’ as a framework for accessing and using digital media, web resources and mobile applications in the construction sector. The two inputs from the Learning Layers project will highlight the following themes and the respective developments in the project:

1. Change of construction sector professionals from observers into participants in co-design processes and into pioneers in piloting with the Learning Toolbox;

2. Change in training of trainers at Bau-ABC from project-driven Multimedia Training to internally organised capacity building in Theme Rooms.

In addition to these, the workshop will have a third input from the parallel EU-funded project EmployID. Whilst this project is working in a different context (engaging research and development as support for Public Employment Services), there are similar capacity building initiatives and challenges to support work-related professional learning. From this perspective the third input presents a theme that is relevant for the Learning Layers:

3. Using MOOCs through a social learning platform to support professional development and identity transformation within Public Employment Services.

The three themes and the mode of work in the research workshop are described in detail below.

2 Construction sector professionals: from observers into participants in co-design processes and into pioneers in piloting with Learning Toolbox

The Learning Layers project is based on a process of iterative co-design, bringing together end users in the construction field, together with researchers and developers. One of the main aims of the initial research undertaken was to collect material from construction sector stakeholders. Over 50 semi-structured interviews were undertaken with representatives of construction companies and sector organisations.

The initial interviews were followed up with a survey of apprentices with over 700 first, second and third year apprentices completing the survey. The survey confirmed the desire for more use of mobile learning resources and a frustration with the limitations of existing commercial applications. Whilst only a limited number of companies permitted the use of mobile devices in the workplace, 53% of apprentices said they used them for learning or for obtaining work related information, explaining this was in their own times in breaks or after work.

The co-design process of the Learning Layers project in Bau-ABC was launched firstly with the idea of digitising the instruction and learning materials (the White Folder). In iterative cycles the design idea was changed into the development of the Learning Toolbox (LTB) - a mobile framework for accessing and using digital media, web resources and mobile apps in the context of work and workplace-based learning. During different phases of the process the participants (both apprentices and trainers) were involved in conversational workshops, storyboard workshops, LTB-design workshops and LTB-demonstration workshops. In addition, the project organised training in multimedia for Bau-ABC trainers including the development of a series of videos in which trainers and apprentices demonstrate the potential contexts for using Learning Toolbox.

The Learning Toolbox is designed as a comprehensive framework that can be used for apprentice training and continuing training in the building and construction sector. For craft trade companies, the interest in web tools and mobile technologies is related to real-time, knowledge sharing, communication and problem-solving, rather than conventional training. Experiences with earlier web tools have shown that they do not necessarily contribute to optimisation of work and business processes.

3 Staff training arrangements of Bau-ABC: from project-driven Multimedia Training to internally organised capacity-building in Theme Rooms

Alongside the co-design process (and as support for Bau-ABC trainers' participation) the partners agreed to start a series of Multimedia Training events with Bau-ABC. These workshops were organised as weekend-events in Bau-ABC for small groups of volunteer staff supported by Learning Layers partners from Pontydysgu and ITB. The aim of the first workshops was to promote general awareness of web tools and applications and focused on the potential of digital media to support training in the construction sector. After these first sessions, three later workshops were dedicated to the production of videos and multimedia content in different trades.

After this project-driven phase of Multimedia Training, Bau-ABC trainers started developing their own follow-up sessions in their regular meetings (by taking up specific issues like 'copyright', 'creative commons' and 'open educational resources'). However, after some time they concluded that these sessions will cover only part of the staff. Yet, with the help of the Learning Toolbox they wanted to make the use of digital media, web resources and mobile applications part of normal practice in training and learning.

As a part of the recent discussions on the next pilot phase with the Learning Toolbox, the Bau-ABC trainers have reviewed the need for further internal training and capacity building measures. They have agreed on certain guiding principles and on a model of how to put them into practice. Firstly, the guiding principles for their internal training:

- a) It is not enough to rely on the progress of some advanced learners in voluntary training sessions. It is necessary to make the training measures mandatory (as part of the trainers' ordinary work).
- b) It is essential to provide all trainers with flexible opportunities to participate (taking into account their time constraints) and to make progress at their own tempo, but also to have support from their peers.
- c) It is essential to structure the learning process with common themes. Yet, at the same time there is a need to move on to contents and new challenges (but maintaining a common learning process).

Therefore, the Bau-ABC trainers propose an internal training arrangement based on parallel (physical and virtual) 'theme rooms/spaces' (Themenräume). The users will rotate in these rooms/spaces during a period they require for individual learning and mutual support. In physical rooms they have devices and materials. In virtual spaces they have access to web resources. Once the users have 'checked out' from the rooms/spaces, these will be populated by other themes. In this way the Multimedia Training program is based on rotating between parallel/consecutive theme rooms/spaces.

The initial set of themes proposed by the Bau-ABC trainers is the following:

- Theme 1:** the use of social media (Facebook and the WordPress/ BuddyPress platforms),
- Theme 2:** making use of the Learning Toolbox (LTB) (stack-building, app-integration),
- Theme 3:** creating learning materials (video, pictures, drawings, quiz, comics...),
- Theme 4:** data management (Data protection/ security, Open Educational Resources (OER) and Creative Commons).

In this way the Bau-ABC trainers are shifting the emphasis from serving their own training needs to becoming a multiplier organisation that can support capacity building in other organisations. Also, based on such a model, other interested multiplier organisations can link their training inputs to such a "training room" arrangement.

4 Using MOOCs through a social learning platform to support professional development and identity transformation within Public Employment Services (PES)

The EmployID project aims to support and facilitate the learning process of PES practitioners in their professional identity development by the efficient use of technologies to provide advanced coaching, reflection, networking and learning support services. The project focuses on technological developments that make facilitation services for professional identity transformation cost-effective and sustainable by empowering individuals and organisations to engage in transformative practices, using a variety of learning and facilitation processes.

These include:

- e-coaching tools that make coaching processes more efficient and enable the development of coaching skills,
- tools for reflection and reflexivity that can be integrated into coaching processes,
- novel networking and facilitation tools to support individuals to become effective facilitators for the learning of others, and
- flexible scorecard visualizations as a form of workplace learning analytics, partially informed by data collected from the user activities and feedback.

There is considerable interest by PES organisations in the potential of MOOCs and social learning as a pedagogic approach to both knowledge diffusion and development and to extending access to professional development. The idea of social learning is that people learn through observing others behaviour, attitudes and outcomes of these behaviours, “Most human behaviour is learned observationally through modelling from observing others, one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action” (Bandura, 1977). Facilitation is seen as playing a key role in structuring learning and identity transformation activities and to support networking in personal networks, teams and organisational networks, as well as cross-organisational dialogue.

The project is both using existing MOOC platforms and developing social platforms, which can support the growth of a networked learning ecology (see Figure 1, below). This includes our ability to work with PES organisations to design, develop, implement and facilitate social learning around different topics and foci to different target groups within, in between and external to PES organisations, to share and repurpose learning materials and where appropriate to facilitate dialogue between different organisations. The development of such an ecology is obviously a longer term aim, but the success of the first pilot MOOCs suggest the potential of social learning and facilitation for public service organisations.

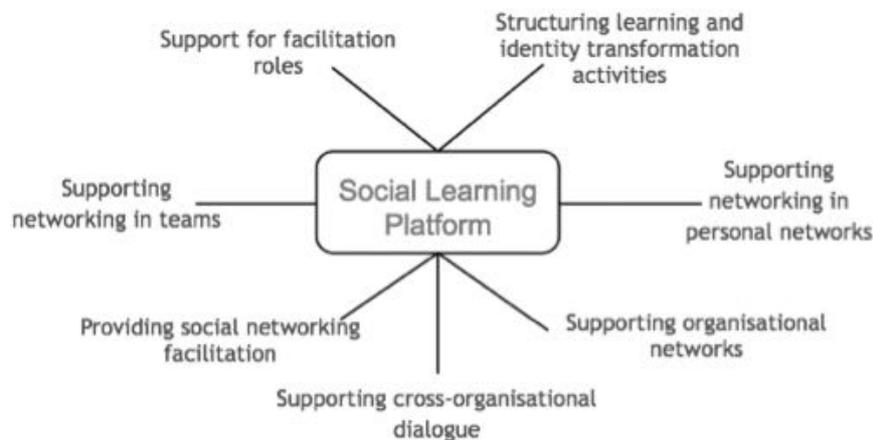


Figure 1: Social Learning Platform

5 The inputs to the workshop and the mode of work

In the workshop the presenters will give up-to-date inputs on the themes outlined above. In the discussion we will explore the following questions:

- How has the participative design process changed the Bau-ABC trainers way to work with digital media and web resources so far? How can the pilot phase with the Learning Toolbox integrate the use of digital media, web resources and mobile applications into training practice?
- How has the Multimedia Training been able to equip the Bau-ABC trainers with the capability to work and learn with digital media, web resources and mobile applications? What are the main challenges for getting the flexible training and learning concept "Theme room" to work for all learners?
- How has facilitation in the EmployID project pilot MOOC supported professional learning? Have the MOOC pilots provided a basis for more limited community-based follow-up strategies or for wider open learning arrangements?

In the discussion the participants draw conclusions for future Research and Development projects that build on co-design processes, capacity building initiatives and accompanying research.

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Session 7

Different System Challenges and Approaches in VET: Learning Pathways (Netherlands), Vocational Programs (Spain), Permability (Germany) or College for all (USA)?

Students' Learning Performance and Study Careers in Different Learning Pathways in Dutch VET Compared

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Abstract: This study was designed to examine the effects of the Green Lyceum (GL) variants as new continuing learning pathways in Dutch VET. The GL were compared with a more traditional pathway (e.g., pre-vocational secondary education - secondary vocational education) in terms of students' learning performance and study careers. GL students and comparable students following the regular pathway did not appear to differ in terms of mean final exam scores for four core subjects in the first part of their educational programmes. However, it should be noted that, on average, GL students take this final exam one year earlier than regular students (after three instead of four years) because of the acceleration of the learning trajectory in the GL programme. The different GL variants with their respective educational formats did not lead to significant differences in learning performance. Conclusions with respect to students' study careers will be presented at the conference.

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1 Introduction

Many countries explicitly strive to enhance the educational level of their inhabitants to be able to face the challenges of modern society. A central goal in their educational policy is that higher percentages of people should reach higher levels of the educational system (OECD, 2010). This trend is also visible in The Netherlands, the country in which this particular study is carried out: One of the key elements of Dutch educational policy of the last decades is that percentages of students reaching and successfully finishing higher vocational education should increase (Dutch Educational Council, 2014).

To enable many students to reach higher vocational education, it is crucial that boundaries between successive educational levels are reduced. In other words, students should be enabled to develop their knowledge, skills, and competencies (required not only for dealing with present and future professional core tasks but also for their own personal development from the perspective of further education, lifelong learning, employability, and citizenship; see also Wesselink et al., 2010) in seamless pathways without artificial barriers between educational levels (Harris & Rainey, 2012; Kuijpers et al., 2010).

The Vocational Education and Training (VET) system in The Netherlands consists of three levels: pre-vocational secondary education (vmbo), secondary vocational education (mbo), and higher vocational education (hbo). The transitions from one VET level to the next are often problematic for students with high drop-out rates as a result (Visser et al., 2010). For many students, the various educational programmes corresponding with successive educational levels represent separate worlds, which makes it difficult for them to link and integrate the content of these programmes (Biemans et al., 2013).

Comparable transition problems between successive educational levels have been recognised internationally as well (see e.g. Hoelscher et al., 2008). These transition problems endanger educational policy to enhance the general educational level and seem to require a curriculum design solution, i.e. the design and implementation of new continuing learning pathways (Biemans et al., 2013). The aim of these continuing pathways is to ensure curriculum continuity of successive educational programmes and, thus, to promote and streamline students' knowledge and skill acquisition and competence development (Van Schoonhoven et al., 2010). Optimal transitions are not only important for students but also for school organisations representing successive educational levels, the labour market, and society as a whole.

Therefore, the Dutch government has stimulated the design of such new continuing pathways in VET (Dutch Ministry of Education, Culture and Science, 2005). Continuing pathways can be defined as sequential educational programmes combined into a new educational programme characterised by curriculum continuity in particular competence areas or subjects lasting several years, and encompassing more than one qualification level (e.g., vmbo and mbo) (Biemans et al., 2013).

Prominent examples of continuing pathways are the 'Green Lyceum' (GL) variants in the agricultural (or 'green') domain, covering vmbo and mbo levels in 5 or 6 years instead of the regular 8 years and leading to a 4/5 qualification level in the European Qualification Framework (European Commission 2008). The first GL started in the years 2007 or 2008 with relatively small student numbers in 5 schools in 3 different VET institutes. In the school year 2014-2015, GL variants are offered by 14 schools of 6 VET institutes spread over The Netherlands to more than 1000 students, which is a substantial number in the 'green' educational sector. Students in all GL variants obtain a separate pre-vocational (vmbo) diploma in addition to the vocational (mbo) diploma at the end of the trajectory. The GL are specifically designed for students with predicted cognitive abilities to reach the hbo level combined with a preference for practical assignments (see also Biemans et al., 2013).

This study was designed to examine to what extent the GL offered a solution for the above-mentioned transition problems. Therefore, these continuing pathways to hbo were compared with a more traditional pathway to hbo (e.g., regular vmbo-mbo) in terms of the students' learning performance and their transitions through the respective educational programmes (study careers). The study focussed on the first phase of their educational programme (vmbo). The second phase of their educational programme (mbo) was not taken into account since substantial data from students in the second GL part were not available yet.

In the present study, the following research questions were formulated:

- Do GL students and regular vmbo students differ in terms of learning performance (i.e., vmbo final exam scores)?
- Do students from the various GL institutes differ in terms of learning performance?
- Do GL students and regular vmbo students differ in terms of percentages of students who obtain a vmbo diploma?
- Do the various GL institutes differ in terms of percentages of students who obtain a vmbo diploma?
- Do GL students and regular vmbo students differ in terms of percentages of students who proceed with the GL or mbo programme after obtaining their vmbo diploma?
- Do the various GL institutes differ in terms of percentages of students who proceed with the GL programme after obtaining their vmbo diploma?

The first two research questions will be answered in the present version of this paper while the other questions will be addressed at the International VET Conference in Bremen (students' study careers in the different learning pathways are currently being analysed).

2 Method

Participants and design

To examine the first two research questions, the group consisting of all 165 GL students who had passed their vmbo exam in the school years 2012-2013 and 2013-2014, as registered in a national student database, was taken as the starting point. These students came from seven schools of three different Dutch 'green' VET institutes (the first three institutes that had started a GL programme already in 2007 or 2008).

Next, a control group of regular vmbo students was composed that resembled the above-mentioned group of GL students as much as possible in terms of the following student characteristics: general cognitive ability test score (based on the same standardised test taken by the students in primary education), gender, and year of examination (2013 or 2014). To fill the control group, first, individual regular vmbo students from the same institutes who matched individual GL students in terms of the student characteristics mentioned above were selected from the national student database. As next steps to complete the control group, comparable regular vmbo students from schools from the same municipality, from the same region, and from the same province were successively added to the control group. This procedure resulted in a control group of regular vmbo students (in

fact the top segment of regular vmbo students in terms of general cognitive ability test scores) that was comparable to the group of GL students.

In the data analyses related to the first two research questions, learning performance data of 280 students were included (142 GL and 138 regular vmbo students; 157 male and 123 female students). This was caused by the fact that not for all students a general cognitive ability test score was available in the national student database and not all students had vmbo exam scores for all relevant subjects (see next paragraph).

Dependent variables

To measure students' learning performance, their national vmbo final exam scores for the following four subjects were taken (these exams were identical for GL and regular vmbo students): Dutch language, English language, Mathematics, and Biology. These subjects can be regarded as core subjects in the GL and vmbo curricula. At this point, it should be noted that the final vmbo exam as taken by GL and vmbo students includes other subjects as well, but these are not compulsory or selected by a vast majority of students. Therefore, these other subjects could not be taken into account in the analysis of students' learning performance.

Data analysis

To compare the learning performance of the GL students and the regular vmbo students, a MANCOVA with the 4 exam scores (NL, ENG, MATH, and BIO) as dependent variables, the factors Group (levels: GL vs. Regular vmbo) and Gender (levels: Male vs. Female), and the covariate General cognitive ability test score was carried out.

Next, to examine possible differences between the various GL institutes in terms of students' learning performance, a MANCOVA with the 4 exam scores (NL, ENG, MATH, and BIO) as dependent variables, the factors GL Institute (levels: 3 different GL institutes) and Gender (levels: Male vs. Female), and the covariate General cognitive ability test score was done.

3 Results

No significant differences in learning performance (i.e., mean vmbo final exam scores) were found between GL students and comparable regular vmbo students: the main effect of the factor Group was not significant ($F(4,269)=0.67$; $p=0.61$) (see also Table 1). Moreover, no significant interaction effects between Group and Gender and/or General cognitive ability test score could be determined. Not surprisingly, General cognitive ability test score appeared to be a significant predictor of vmbo final exam score ($F(4,269)=10.82$; $p\leq 0.001$).

Table 1: Mean vmbo final exam scores of GL students and comparable regular vmbo students for the subjects Dutch language (NL), English language (ENG), Mathematics (MATH), and Biology (BIO).

	NL	ENG	MATH	BIO
GL	6.39	6.34	6.63	6.65
vmbo	6.53	6.69	6.76	6.60

Moreover, no significant differences in learning performance were found between students from the three GL institutes either: the main effect of the factor Group was not significant ($F(8,256)=0.60$; $p=0.78$) (see also Table 2). Moreover, no significant interaction effects between GL Institute and Gender and/or General cognitive ability test score could be determined. Again, General cognitive ability test score appeared to be a significant predictor of vmbo final exam score ($F(4,127)=3.50$; $p\leq 0.01$).

Table 2: Mean vmbo final exam scores of students from the three GL institutes for the subjects Dutch language (NL), English language (ENG), Mathematics (MATH), and Biology (BIO).

	NL	ENG	MATH	BIO
Institute 1	6.49	6.41	6.51	6.85
Institute 2	6.29	6.12	7.07	6.63
Institute 3	6.32	6.64	6.03	6.20

4 Preliminary conclusions

With respect to the first research question, GL students and comparable vmbo students (i.e., the upper category of regular vmbo students when their general cognitive ability level is concerned) did not appear to differ in learning performance in terms of mean vmbo final exam scores for the four selected subjects, which constitute the core of their respective educational programmes. At this point, however, it should be noted that, on average, GL students take their vmbo final exam in most subjects one year earlier than regular vmbo students (after three years instead of four years) because of the acceleration of the vmbo learning trajectory in the GL programme. The only exceptions in this regard are the subjects Biology at Institute 1 and Mathematics at Institute 2, for which the vmbo final exam is in the fourth year. Therefore, the main conclusion regarding students' learning performance is that the acceleration in GL does not negatively affect the students' learning performance (at least, in the first part of the learning pathway, which was examined in the present study).

Moreover, related to the second research question, students from the various GL institutes did not appear to differ in terms of learning performance in the first part of the learning pathway either. In other words, the different GL variants with their respective educational formats did not lead to significant differences in learning performance.

Conclusions with respect to the other four research questions will be presented at the conference. Future research in the context of this project will focus on: 1) analysis of students' study careers in the different learning pathways; 2) analysis of students' learning performance in the second part of their learning pathways; and 3) analysis of students' experiences in higher vocational education.

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From PGS and PCPI to FPB¹: 20 Years of Basic Vocational Education Provision in Spain²

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Abstract: Our contribution attempts to review Basic Vocational Education programmes in Spain in the past 25 years. We intend to compare the evolution of these programmes in terms of conception and of conditions of delivery in order to compare how different they are as skill formation and remedial systems, as well as to analyse how different political views have an impact upon such provision. We will particularly analyse the current programmes in two regions in Spain where tourism is the main economic strength and source of employment. The authors have been working on these issues since the late 1990s in several research projects and we are currently working on two of them.

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¹ PGS stands for Social Guarantee Schemes (*Programas de Garantía Social* in Spanish), PCPI stands for Initial Vocational Qualification Programs (*Programas de Cualificación Profesional Inicial* in Spanish) and FPB stands for Basic Vocational Training (*Formación Profesional Básica* in Spanish).

² Part of this paper is based upon work developed under the projects LLP Leonardo da Vinci Projekt LLP-LDV-TOI-2013-LT-0125 "Application of apprenticeship in the vocational integration of socially disadvantaged youth" (APPRENTSOD) and "Success and dropout pathways in vocational training/education in Spain" (Project Reference: EDU2013-42854-R), funded by the Spanish Ministry of Economy and Competitiveness by the national Programme of Research, Development and Innovation.

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1 Introduction

The beginning of the modernisation of the Spanish VET system can be identified in 1990. It has evolved significantly since then, within a European frame of reference. With the extension of the school age to 16, a new provision for the lowest level of qualification was offered in 1994, particularly addressed to students classified as low achievers in secondary schools and to young people under difficult circumstances. These particular programmes were named PGS and they lasted until 2007, when they were replaced by PCPI. These other programmes, with some differences but addressed to the same population, were reshaped again in 2013 and they were being offered for the first time in year 2014/2015.

Our contribution attempts to start with a short review of literature produced around such programmes. We briefly review the evolution of these programmes in terms of conception and of conditions of delivery in order to compare how different they are as skill formation and remedial systems. We will particularly analyse the current programmes in two regions in Spain where tourism is the main economic strength and source of employment.

2 From PGS to PCPI to FPB: Normative Changes and Shifting Trends

Since 1990, Spain has witnessed four different laws changing the structure and purpose of the overall general education system, particularly entailing different conceptions about the role of secondary education, its universal scope, and the debate about comprehensiveness or elitist education provision. The extension of the compulsory age of schooling from 14 to 16 implied the major change in the system. If suspension had been an accepted practice until 1990, so that teachers could get rid of bad or non-interested students, the law passed that year turned suspension into retention. Compensatory programmes disappeared then, and they were replaced by support measures at both individual and group level. The most remarkable measure within secondary education in that law, which started being offered only in 1994, was known as Social Guarantee Schemes (PGS). These could be offered both by secondary schools and by municipalities as well as by Non-Governmental Organisations (NGOs). PGS had three parallel aims: to foster personal development of those youth that had shown strong disaffection from school; to help them re-enter the educational system; and to provide them with low qualified training to help them to choose an occupational field.

In year 2002 a new law was passed, though it was never applied. It had followed a bitter debate about the role of secondary education, and it replaced PGS with Initial Occupational Programmes (PIP). This implied a first turn away from the aims of PGS, for it attempted to provide all youth attending them with the Certificate of Compulsory Secondary Education. Also, in 2002, another law was passed on Vocational Qualifications and Vocational Education, which has been the only one ruling Vocational Education and Training (VET).

However, general elections in 2004 did not allow the development of PIP. The new government passed a new law in 2006, where PIP were replaced by Initial Vocational Qualification Programmes (PCPI). These aimed at providing Vocational Qualification (level 1) ruled after the 2002 law on Vocational Qualifications and Vocational Education, even if it allowed for the achievement of the Certificate of Compulsory Secondary Schooling. By 2006, early school leaving was already a main con-

cern for the Spanish Department of Education, as this new indicator left the country in a very bad position in international comparisons. PCPI were conceived as one more measure to tackle this problem. Among the changes were the chance to extend the programme to a second year and a strong curricular regulatory framework in terms of both academic and vocational subjects. At this point, the aim to foster personal development among youth had vanished.

In 2012 the next education law was passed, due again to a change of government, with the aim to restore as much as possible some of the ideas in the 2002 law and with an even stronger conservative and neoliberal drive. The consequence of this upon the object of our interest is the devise of a new programme, known as Basic Vocational Education (FPB). Such programmes can only be delivered by secondary schools (municipalities and NGOs will be able to offer a different programme named a Basic Qualification Programme (PCPB)). The entry age is lowered to 15 and students attending it will not be able to achieve the Certificate of Compulsory Secondary Education, but instead a VET level 1 qualification. The aim is no longer to re-enter the education system, and instead focuses upon the achievement of the lowest vocational qualification. It can be assessed as a segregation measure, for it is offered still at the age of compulsory schooling and ignores the principle of comprehensiveness. This also introduces a rupture in the consensus around VET, which has been a feature of the system since the late 1980s.

3 Balance of the Offer/Demand of PGS, PCPI and FPB: Data from Two Regions

Our first approach to a potential demand of these programmes is the analysis of the graduate rate in compulsory education. The most recent data show that 22% of the population out of compulsory education got no certificate, which amounts to 90,141 students³. The Valencian Community and Balearic Islands are above the average, with 33.1% and 26.9% of students respectively in this situation⁴. These results imply a potential demand of something more than one out of every five youths that finish compulsory school. In Balears the proportion is approximately one out of every four youths, and in Valencia almost one out of every three.

They are among the regions with the worst results, which is closely related to the fact that both, located on the Mediterranean coast, base their economy upon tourism and related sectors, particularly construction. The wide offer of non-qualified jobs attracted many youths, while there were not enough public policies addressed to retain students in schools or let them combine education and employment or return to education (Adame and Salvà, 2010; Salvà-Mut and Sureda-Negre, 2012; Salvà-Mut, Oliver-Trobat and Comas-Forgas, 2014). Since 2008, the crisis has diminished employment rates.

Whilst the situation of youths in the labour market has worsened, retention in the school system has increased for those between 20 and 24, as data on Early School Leaving (ESL) show. In this context, both PGS and PCPI have contributed to schooling youths without the Certificate of Secondary Education.

Official statistics allow us to analyse participation in the country and both regions from school years 1996–1997 to 2012–2013. There was an increase in Spain until 2002–2003. From then, the situation remained stable until 2008–2009, when there was an increase again up to 84,217 students in year 2011–2012, when a decrease happened. Data in Balears and Valencia follow the same trend.

The provision rate for school year 2001–2012 points to 93.4%⁵ for Spain. Analysis of data for year 2012–2013⁶ allows us to deepen our knowledge of some features of participation in the pro-

³ Data from school year 2011–2012, released by the report of the Consejo Escolar del Estado (2014). 319,591 students finished compulsory school with the Graduate of Secondary Education.

⁴ Data produced out of: <http://www.mecd.gob.es/dms/mecd/servicios-al-ciudadano-mecd/estadisticas/educacion/indicadores-publicaciones-sintesis/cifras-educacion-espana/2015/D3.pdf>

⁵ Cálculo elaborado a partir de la relación entre el número de matriculados (84,217) y la (90,141) para el curso 2011–12.

⁶ Informaciones elaboradas a partir de <http://www.mecd.gob.es/dms/mecd/servicios-al-ciudadano-mecd/estadisticas/educacion/indicadores-publicaciones-sintesis/cifras-educacion-espana/2015/D4.pdf>

grammes. Valencia is the second region according to students enrolled in PCPI, while Balears is in 12th position, with 15.2% and 2.6% of all students in PCPI respectively. Students come mainly from compulsory education (68.1%), while 13.9% were out of school, 16.5% in other situations, and 1.5% in special education. In Valencia and Balears the percentage of students coming from compulsory education is higher (81.8% and 89.7% respectively).

4 Research Review

We can identify at least three strands of research since 1996:

The first one, with a sociological bias, has school failure and transition systems as the main objects of attention, where some authors have proven active enough. The “Group of Research in Education and Work” (GRET7) has carried out wide research regarding transitions from youth to adulthood (Casal, García, Merino, and Quesada, 2006a). In this sense, they defend the biographical approach in Sociology of Youth (Casal, García, Merino, and Quesada, 2006b), considering the biographical dimension of the study of transitions, as well as the need to include in this analysis not only the political structure, but also the institutional actions that influence the way in which subjects develop their transitions. Therefore, they address transitions as a combination of individual choices that are strongly conditioned by socioeconomic variables as well as by actions taken upon local development, while also considering the changes in labour markets, their segmentation as well as growing precarisation. This theoretical positioning is the framework for their extensive empirical work, where they have confirmed the differential modalities of transitions to adulthood proposed in several works over time (Casal, 1997; Casal, García, Merino, and Quesada, 2004).

A second strand has been that of psychological research, mainly from the view of developmental psychology (Zacarés, 1998; Llinares and Zacarés, 2006). Developmental processes, access to adult life, heterogeneity of youth, and the consideration of individual expectations, features and capabilities are behind these studies. There has also been a strong analysis of the building of identities, particularly of occupational identities.

However, the main perspective of research upon PGS and PCPI is the educational one. Most of the studies have a regional scope, due to the different normative regulations in each of the regions. We can find studies upon Balears (Salvà, 2001, 2002), Valencia (Aparisi, 1998; Navas and Marhuenda, 2004), Murcia (González, 2015; Escudero and Martínez, 2013; González and Moreno, 2013), Cataluña (ERET, 2002), Andalucía (Marín, García and Sola, 2013), and Castilla La Mancha (López and Palomares, 2012), even if there have not been studies conducted State-wide. Such research has taken a different focus of interest: teachers and trainers, their background, training and identities; socialisation and relationships of students, their relations to teachers; methodologies employed in the workshop and the classroom; classroom climate, norms and discipline as a form of moralisation and citizenship formation; as well as organisational arrangements. Some of this research has been gathered in monographies (Molpeceres, 2004; Marhuenda, 2006; González, 2015).

Debates about segregation compensation, segmentation inclusion, precarisation or dignification of these programmes are a matter not only of academic analysis but also and mainly of political action. There is a lack of stability of these programmes and a lack of permanent funding, with its consideration as a side measure; furthermore, given the trends in the Spanish labour market, the lack of a culture that values vocational training as well as the lack of a proper guidance system are indeed worrisome.

5 Political Views and Changing Trends: Remedial Systems, Skill Formation or Something Else?

The overview of the short history of the programmes studied along the past two decades, a closer look at the data in two regions where early school leaving rates are high and where the labour market attracts young people in the main economic sector in the country (tourism), and the brief review of

⁷ <http://grupsderecerca.uab.cat/gret/en>

research allow us to make some final considerations that deserve some attention:

- The role of VET as a remedial or compensatory system, a second-hand route or a proper route for skill formation and upgrading the qualification of the country
- The rupture of consensus around VET through the introduction of FPB, which also introduces a direct rupture of the comprehensive system, relocating such measures within vocational education
- The attempt to facilitate further education or to dispatch youths from the education provision
- The sustainability of a vocational system without proper vocational planning and guidance
- The ability of the school system to satisfy the educational needs of all and the allowance to new actors (municipalities and NGOs) in the provision of basic compulsory and vocational education with or without proper acknowledgement
- The need and the risk of transition pathways and mechanisms also out of school
- Distorting trends between vocationalisation or elitisation of secondary education
- The fight between the personalisation of education and its standardisation
- What notion of work is being taught in such measures

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What does Vocational Mean? Exploring the Understanding of Vocational in Higher Education and Vocational Education

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Abstract: This paper deals with the impact and understanding of vocational in Vocational Education sector (VET) and in Higher Education (HE) sector. Due to different understandings of vocational in both sectors and on the basis of a research project in HE the aim is to outline differences and propose measures with respect to study programs and students at a faculty of business administration and economics.

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1 Introduction

This paper deals with the impact and different understandings of *vocational* in Vocational Education (VET) and in Higher Education (HE). Our aim is to outline understandings of vocational in both sectors and discuss learning environments to support students at university in their process to build their own vocational understandings. The paper is structured as follows. First, it outlines different understandings of vocational in both sectors and tries to work out corresponding challenges (cf. chapter 2). After that, results from a research project in HE with focus on the students' study planning and their understanding of vocational are presented in chapter three. In the end, we discuss similarities and differences and give hints on the development of learning environments that may help students in HE to find their own vocational understanding (chapter 4). In chapter five, we give a short conclusion and describe further research.

2 Understanding of vocational in VET and HE

2.1 Meaning of vocational in VET

The concept of vocation is closely linked to the German dual system in vocational education and training. Although there are different meanings of vocation in the German context, the dual system has a prominent status. Following Deißinger (1998) the so called *Berufskonzept* – concept of voca-

tion – organizes the matching between world of vocational education and training and world of work. Ertl and Sloane (2004) mention: “This concept reflects the need to prepare young people not only for a small number of specific tasks at one company, but to provide a qualification applicable in many employment contexts and responsive to the changing economic and social environments of a whole occupational field” (Ertl and Sloane, 2004, p. 4). Vocation includes a formation of adaptable complex skills in reference to a broader area of vocational tasks. So duality as a combination of learning in enterprises and vocational schools is the everyday understanding of vocational education and training in Germany. Corporatism, a combined state and market regulation, labour mobility and a broad sense of preparing for qualified work are underlying structures of the dual system in VET. The vocation concept here referred to defined set of competences related to working tasks as a challenge of curriculum for the German dual system.

2.2 Meaning of vocational in HE

In higher education on the other hand, the understanding of vocational is quite unclear compared to the understanding of vocational in VET. There is no clear concept of vocation with certain skills, requirements, and standards. Nevertheless, after the introduction of a new study structure consisting of two cycles (i. e. undergraduate and graduate) in the late nineties, it was announced that the degrees awarded of these cycles shall also be relevant to the labour market (cf. European Ministers of Education, 1999). Especially in scientific discourses there are discussions about what *vocational* means with regard to degrees in higher education (cf. Buschfeld and Dilger, 2013). This might be one reason why the relatively vague concept employability (cf. Schubarth and Speck, 2013; Gerholz and Sloane, 2008, 2011; Teichler, 2005) was introduced and criticised in the scientific discourse and at universities. Employability is a concept with no corresponding concrete skills and competences students should achieve or have at the end of their studies. The concept is relatively vague and flexible and students are responsible for finding a suitable vocation after they finished their studies. Therefore, it is the students’ task to build their own profile with respect to their competences, qualifications, and labour market aspirations.

2.3 Challenges and further discussion

The qualification levels and the labour market for graduates in VET seem to be quite clear as they stem from descriptions based on the traditional vocational concept. In HE on the other hand, there are many questions regarding the meaning of vocational with respect to labour market positions, study programs, and required skills, but also for competence development and learning environments.

In VET, the vocation and related competences seem to be clear. It is the students’ task to find out which skills, attitudes, and values they want to pursue. In contrast to that, in HE it is the students’ task to find out what they understand under the concept of vocation. They have to build their own vocational profile. So in HE it is (partly) in the hand of the students to build their own understanding of vocation. These processes in VET and HE students have to go through are accompanied by uncertainty and challenges. The following figure shows our considerations with regard to vocation and competence development in VET and HE:

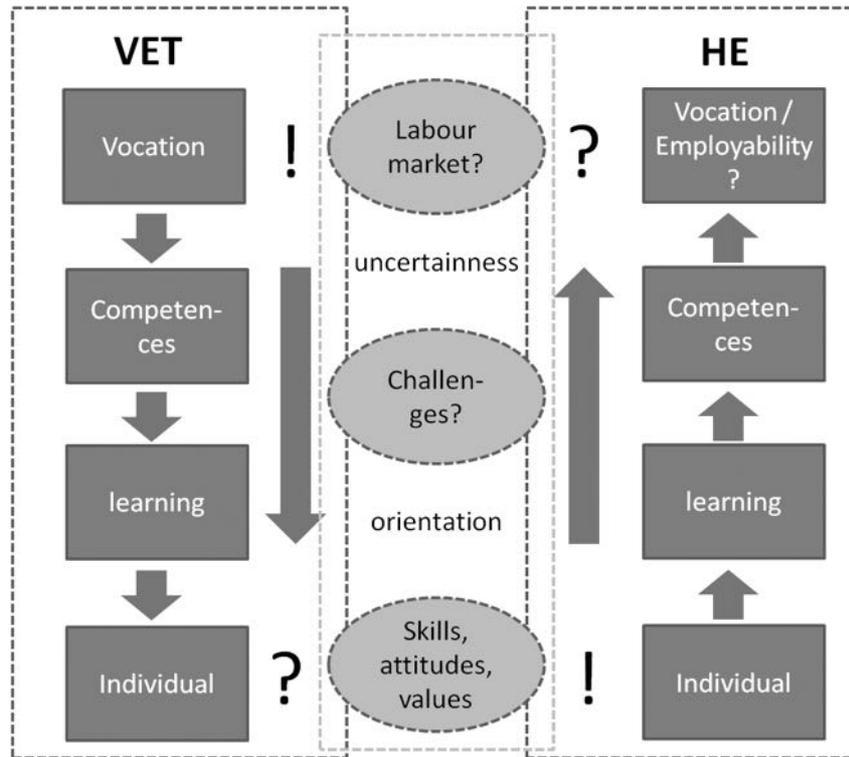


Figure 1: Understanding of vocational in VET and HE (cf. Kremer, 2014).

In the following, we focus on students in HE to learn more about their understanding of vocational.

3 Insights from a research project in HE

In the following chapter we present first findings from a research project at the faculty of business administration and economics at the University of Paderborn. The research project focuses on bachelor students' study plans from two cohorts: students of a study program in Business and Economics (BE) and students of a study program in International Business Studies (IBS). In their first year at university in 2014, approx. 750 students (S) of the above given groups worked out their study plans for their entire bachelor study programs and answered provided questions about their future vocational plans. These documents build the empirical basis for our analysis on students' study planning and their understanding of vocational.

3.1 Research design

The project presented in the following chapter is part of an overall project called *professionalization of the initial study phase* at the faculty of business administration and economics at the University of Paderborn. The first year students (mentees) are accompanied by advanced students (peer mentors) in their first year at university in their processes of student adaptation to college, especially in the field of social integration. In this context, students have the task of drawing up a study plan, taking into account study-related and professional needs. These study plans build the empirical basis of the project we describe in the following.

The project follows a qualitative research approach and can be characterised as explorative (cf. Bortz and Döring, 2006). It is the aim to get a deeper understanding of how students plan their studies and which vocational understanding and plans they have. Based on a qualitative content analysis (cf. Mayring, 2010) and with the analysis software MAXQDA, we previously analysed 22 study plans (eleven from BE students and eleven from IBS students) to get an impression on students' study-related and future vocational plans. On this background we built categories (inductive and deductive) to summarize and structure the study plans and combine these findings with students'

vocational plans and orientations. The following category system was developed in this process (shortened version):

Table 1: Category system of empirical analysis.

Main category	Sub category 1	Sub category 2
Study program	Business and Economics (BE)	
	International Business Studies (IBS)	
Modules	Module classification (1)	
	Module classification (2)	
	Module classification (3)	
	Semester break	
Further questions	Career aspirations	Entrepreneurship
		Sales and distribution
		Banking / Finance
		Consulting
		Controlling
		Human Resources
		Management
		Marketing
		Other
		Not specified
	Consideration of career aspirations in study plans	
	Further qualifications	IT-courses
		Languages
		Semester abroad
		Commitment / Involvement
		Practical experiences
		Other
	Chosen study focus	Econometrics
		Taxation, Accounting and Finance
		Business and Human Resource Education
		Management
		Other
	Graduate / master study	Planned
		Consideration of master study in bachelor study plan
	Individual interests / strengths	
	Other	

3.2 First empirical results

Based on the content analysis we described above we were able to receive first results on students' vocational understanding. On the one hand, we found statements which characterize explicitly typical vocational fields. On the other hand, there are vague statements that need to be analyzed in more depth. We are not sure yet what the statements mean and which vocational understanding they follow. Therefore we need further analysis on the vocational understandings in relation to the study plans. The results we got so far are presented in the following.

First, we found that students from both study programs seem to have *vague, unclear or even no career expectations*. The study plans show that students mention broad occupational fields they plan to work in. These fields are:

- Entrepreneurship (cf. IBS: S2)
- Sales and Distribution (cf. BE: S4; cf. IBS: S19)
- Banking and Finance (cf. BE: S13; cf. IBS: S22)
- Consulting (cf. BE: S1, S9, S13; cf. IBS: S15)
- Controlling (cf. BE: S9)
- Human Resources (cf. BE: S1, S4, S8; cf. IBS: S15, S21)
- Management (cf. BE: S3, S6, S11; cf. IBS: S14)
- Marketing (cf. BE: S5)
- Other (cf. IBS: S20)
- Not specified (cf. BE: S10, S12; IBS: S7, S16, S17, S18)

It is striking that at least six students have even given no clear indication on their respective vocational plans. Having said this, it is necessary to have a closer look at other students' documents.

Second, considering the above-mentioned vocational fields, some students are interested in *more than one vocational area* in which he or she would like to work (cf. S1 would like to work in Human Resources or in Consulting; S13 in Banking and Finance or in Consulting).

Third, we assume that there are *hardly any differences between students of the two cohorts* (students in BE vs. students in IBS study programs) with respect to their career expectations. In both groups there are students who want to work in the field of Sales and Distribution (cf. S4, S19), Banking and Finance (cf. S13, S22) or Consulting (cf. S1, S9, S13, S15), for instance.

Nevertheless, these findings underlie certain limitations. First, we analysed a small number of study plans and therefore we cannot be sure whether our interpretations and assumptions are valid. We thus have to analyse the other study plans. Second, we cannot be sure that the students planned their studies and vocation carefully. It might be possible that students completed the documents by chance because every student was required to complete one plan to pass their first year business module. Third, our interpretations are based on the written plans. We think it might be helpful to conduct interviews with some students to get deeper insights into the planning processes and the understanding of vocational.

4 Discussion and further considerations

In chapter 2.3 we presented our considerations with respect to students' different vocational understandings in VET and HE. Due to our empirical analysis in HE we got first insights on students' vocational understandings in this sector. On the one hand, students mention major vocational fields such as Sales and Distribution, Banking and Finance or Consulting. On the other hand, we got the impression that students' vocational understanding is accompanied by uncertainty and that it can change over time influenced by their studies and personal or vocational experiences, for instance. Additionally, we got ideas about their study planning and module choices. Nevertheless, we do not know how students come to their vocational understanding and future vocational plans and what influences this process. These considerations are presented in the following figure:

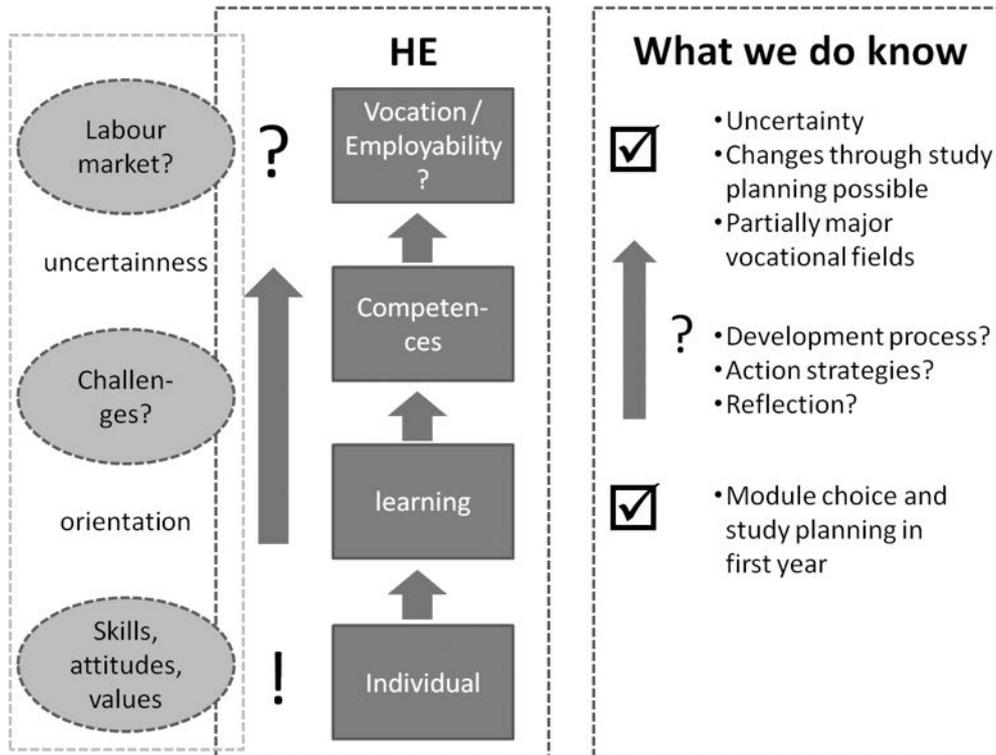


Figure 2: Extended Figure on vocational understanding in HE.

Based on our analysis, first findings, and the above given limitations, we want to discuss initial indications with respect to our study programs (BE and IBS) and the individual students.

Considering the two study programs and students' vocational understandings we found out that students of both programs are interested in similar vocational fields. Therefore, it might be helpful to concretize the study profiles and allow major fields of study which differ from each other. This could help students to establish clearer study focuses and vocational fields. Furthermore, it could be useful to describe future vocational fields to help students in their vocational processes. Considering the students' perspectives, we propose learning environments to help students reflect their processes and get insights in vocational fields. We think that students need to develop individual vocational understandings and match these with their skills, interests, and competences.

5 Summary, conclusions and outlook

As we tried to show in this paper there are different understandings of vocational in VET and HE. With a focus on students in HE we found out that they have vague or unclear understandings of vocational. In contrast to students in VET they focus on broad vocational fields. With respect to our initial findings we propose measures with respect to our study programs and the individuals. Nevertheless, we need further research on students' vocational understandings and development processes. Therefore, we need to analyse the other study plans and conduct interviews with students to get deeper insights in the processes and understandings of vocational.

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College and Career Readiness for all: The Role of Career and Technical Education in the United States

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Abstract: This paper describes the role of career and technical education (CTE) in promoting college and career readiness for all students in the United States (US). As such, the evolution of CTE, its underlying organizational premises and core theoretical underpinnings; along with key curricular strategies to promote college and career readiness are discussed. A thematic review was conducted to characterize the themes of interest for this paper. Major conclusions indicated that although CTE is a viable alternative to help students pursue further education and/or work, the American society continues to view a college degree as the primary goal of education. But with only about a third of young US adults completing a bachelor's degree, and 10 percent completing an associate's degree (two years in the US), it is clear that not everyone ends up with a postsecondary education, and the idea of "college for all" needs to be revisited.

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1 Introduction

As the global economy and the rapid changes in technology innovations began to sweep the world in the 1990s, new skillsets were demanded for workers and graduates at the secondary and postsecondary level (Jobs for the Future, 2007; National Academy of Sciences, 2007). In the United States, employers began to report problems finding workers with adequate preparation underlined by basic academic skills, technical skills, and complementary skills associated with teamwork and problem-solving (Carnevale, Smith, and Sthrol, 2010). This issue was particularly noted in high-tech, high-wage fields in science, technology, engineering, and mathematics (STEM), where the employment outlook has been positive but enrollments in the education pipeline have not matched the demand (Hernandez-Gantes & Fletcher, 2013; Kim, 2011; National Center for Education Statistics, 2009).

Out of this social and economic landscape, calls for education reforms focusing on improved college and career readiness emerged nationally and were pushed at the state level. However, after decades of reform efforts, the United States is still struggling to prepare youth for productive adult lives beyond high school (Symonds, Schwartz, and Ferguson, 2011). The problem is that, as a society, college education is seen as the only way to prepare students for success in life and the focus of college and career readiness has often translated into more rigorous academics (Gray, 2010). However, when only about a third of young adults complete a bachelor's degree, and 10 percent complete an associate's degree, it is clear that not everyone ends up with a postsecondary education and the idea of college as the only way to succeed needs an overhaul (Achieve, 2010; Gray, 2010; Symonds et al., 2011). With this frame of reference, regardless of students' record of academic achievement and interests, everyone should benefit from opportunities to enhance their college and career readiness—and career and technical education appears to be well suited for that.

As part of this quest, in the United States—as a nation—we are implicitly revisiting a question that was at the core of the nascent educational system early in the 1900s: What should be the purpose of education? Should it be to prepare students for work or for college? As the current push for college and career readiness suggests, we are generally interested in redefining this notion beyond an “either or” proposition. However, policy reports continue to equate such notion as college preparation only as the push is to make academics more rigorous and relevant, ignoring the fact that technical and employability skills are also needed for successful career preparation (Symonds et al., 2011; Gray, 2010; Stone, 2013). In this context, what is the role of contemporary career and technical education in preparing students for productive participation in postsecondary education and/or work in today’s economy in the United States?

With this frame of reference, the goals of the paper are to: (1) describe the evolution of career and technical education and its underlying policy and organizational premises, (2) provide and overview of its core theoretical underpinnings, (3) highlight approaches to promoting college and career readiness in schools, and (4) discuss implications for preparing students for further education and work.

2 Method

This paper is based on an invited chapter prepared for an upcoming handbook on curriculum, pedagogy, and assessment. A systematic thematic review was conducted to address the proposed goals for the chapter. A thematic review is a purposeful and comprehensive approach to conducting research drawing from extant literature (Thomas and Harden, 2007). A thematic review allows for an in-depth examination of literature of interest and was best suited for the goals of the inquiry.

The thematic review followed an approach involving the following stages as recommended for related research (Petticrew and Roberts, 2006; Uman, 2011): (1) Asking feasible questions, (2) determining sources of information, (3) evaluating, extracting, and synthesizing data, and (4) summarizing and analyzing thematic results. The questions driving the thematic review included the following in the context of US education:

- How has the underlying purpose of career and technical education evolved since its inception as vocational education?
- What are the theoretical underpinnings of career and technical education?
- How is college and career readiness promoted in elementary, middle, and high school?
- What are the implications for preparing students for further education and work?

Sources of information included books on the history of vocational education, articles from premier journals in the field, publications from professional associations (e.g., Association for Career and Technical Education), electronic resources, and policy and data reports from government agencies. The scope of the inquiry included the period from the early 1900s to current developments in the field. Relevant documentation was selected based on the alignment to driving questions, extracted, and synthesized accordingly. As part of the systematic thematic review, selected data was organized according to their relation to driving questions. This thematic grouping allowed the identification of major conclusions in response to each driving question (Petticrew and Roberts, 2006; Uman, 2011).

3 Major Conclusions

The thematic review approach allowed for the identification of major conclusions in direct response to driving questions. Major conclusions are reported around the themes regarding the evolution of career and technical education in the US, theoretical premises, curricular approaches in schools, and issues and implications for the promotion of college and career readiness for all students.

3.1 Evolution of Career and Technical Education

Career and Technical Education (CTE) had its inception at the turn of the 20th century under the designation of Vocational Education. For almost the entire 20th century, the goal of vocational edu-

cation was to prepare students for work in specific trades such as agriculture, industrial arts, and business in addition to home economics (Gordon, 2014). However, in the 1990s, amidst calls for better preparation of high school and college graduates, the field adopted the name of career and technical education to reflect a broader emphasis beyond exclusive preparation for work. This movement, known as “emerging vocationalism” promoted the integration of academic and technical education and broader student preparation for careers, as opposed to specific preparation for narrow trades (Hernández-Gantes, Phelps, Jones, and Holub, 1995; Gamoran and Nystrand, 1994). The movement was supported by other federal legislation that paved the way for the formal transformation of vocational education into career and technical education at the sunset of the 20th century (Stipanovic, Lewis, and Stringfield, 2012).

Today, federal legislation provides federal policy guidelines and continuity focusing on the improvement of academic achievement of CTE students through the integration of academic and technical education, articulation between secondary and postsecondary education, and improvement of state and local accountability. These federal policy guidelines have translated into a variety of initiatives that are enacted at the state and local level based on their respective goals and priorities (Scott and Sarkees-Wircenski, 2004). The contemporary shared purpose of career and technical education initiatives and programs, across the board, is generally portrayed as preparing youth and adults for careers in a wide array of high-wage, high-skill, high-demand fields (ACTE, 2014). In practice, the purpose of CTE has translated into continued support for preparation for work and a broader role promoting preparation for further education in the education system.

3.2 Theoretical Premises

Contextual teaching and learning principles are at the core of career and technical education, and operationally implemented through the integration of academic and technical curricula. Contextual teaching and learning promotes learning in contexts featuring real-life and occupational situations to increase the relevance of what is being taught (Brown, Collins, and Duguid, 1989; Hernandez-Gantes and Brendefur, 2003). In CTE, occupational contexts serve as the source for many meaningful and coherent learning situations that can be used in courses on career exploration, to courses required in an occupational program of study. In this case, the occupational contexts represent an authentic source of relevant learning tasks and concept applications. As such, these contextual learning situations are authentic representations of what people do in the world of work and are often represented as “authentic pedagogy” in academic education (Hernández-Gantes & Brendefur, 2003; Hernandez-Gantes and Nieri, 1997; Newman, Secada, and Wehlage, 1996).

Based on the promising premises of contextual teaching and learning, reform in career and technical education specifically called for the integration with academic education to promote college and career readiness (Gordon, 2014). In general, the term curriculum integration has been referred to in a variety of ways as a method or process to connect skills, themes, concepts, and topics across disciplines and between academic and technical education (Pierce and Hernandez-Gantes, 2015). In career and technical education, curriculum integration has been broadly interpreted at the organizational level through career pathways articulating sequences of coherent courses in occupational areas, integrated coursework (e.g., within and across courses), and through the implementation of career academies. In any case, the shared premise is to promote the understanding of academic and technical concepts rooted in occupational contexts and the facilitation of college and career readiness (Hernandez-Gantes and Brendefur, 2003; Pierce and Hernandez-Gantes, 2015).

3.3 CTE Approaches in Schools

In the United States, career and technical education provides for opportunities to promote career awareness, exploration, and preparation at the elementary, middle, and high school level (Lekes et al., 2007; Maddy-Bernstein, 2000; Stone, 2013). In elementary school, the promotion of career awareness and exploration has been loosely implemented, primarily using guest speakers to share what they do (e.g., firefighters, doctors) and field trips to get acquainted with workplaces. These strategies provide students with opportunities to interact with professionals, learn about their work, and see

what workplaces look like (Beale and Williams, 2000; Magnuson and Starr, 2000; Howard and Walsh, 2011). In middle school, career awareness is further complemented with opportunities for career exploration allowing students to better understand related interests and begin thinking about career and college planning (ACT, 2005; Orr, Hughes, and Karp, 2003; Howard and Walsh, 2011; Magnuson and Starr, 2000; Palladino Schultheiss, 2005).

In high school, career and technical education promotes college and career readiness by helping students participate in a range of career exploration activities to identify careers of interest and plan for post-secondary education and/or work (ACT, 2006; Hughes and Karp, 2004; Leikes et al., 2007; Maddy-Bernstein, 2000). High school students also have the opportunity to participate in CTE programs either as concentrators to complete a program of study or taking courses of particular interests. This flexibility allows students to develop skills in a career cluster and, in some cases, achieve industry certification for relevant skills (Stone 2013; Kantrov, 2014). In turn, other students take selected CTE courses to advance their college preparation focusing on the development of applied skills and/or to earn dual enrollment credit and expedite transition to postsecondary education (Castellano, et al., 2012; Karp et al., 2007).

3.4 Implications for Promoting College and Career Readiness

Career and technical education has come a long way in the United States, from a focus on narrow preparation for work—when it was known as vocational education, to a contemporary emphasis on college and career readiness (Gordon, 2014). As such, the benefits of technical education have been well documented suggesting that it is a viable alternative for successful transition to further education and/or work (Association for Career and Technical Education, 2010; Stern et al, 2010). However, despite the promising prospects of career and technical education, and the fact that all students need to be college and career ready, our society continues to view it as inferior to college education (Gray, 2010).

In this regard, the idea that a college degree is the ultimate goal of education negates the fact that everyone seeks a job afterward. Some researchers and policymakers have argued that the college-for-all notion prevents society from seizing the full value of career and technical education as a viable alternative way to win in life (Gray, 2010; Symonds et al., 2011). Grubb and Lazerson (2007) went even further suggesting that all of American education is, in fact, vocational education. They reasoned that in the new economy, education and work connections have become stronger and have progressively pointed to an education system that needs to be more responsive to an economic function.

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Session 8

Improving Quality in Prevocational Education and IVET: Work Process Orientation, “Living the Curriculum“, Training Networks and the Role of Social Partnership

The Potential of Implementation of Work Process Based Propaedeutic Apprenticeship Schemes in the VET Systems of Germany, Spain and Lithuania

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Abstract: The goal of this paper is to explore the potential of the implementation of work process based propaedeutic apprenticeship schemes in the VET systems of Germany, Spain and Lithuania. This goal is achieved by analysing the institutional, social and economic conditions for this implementation, as well as by discussing adjustments and amendments that are needed for successful implementation of these schemes in the VET systems of selected countries. This paper is based on the research of materials and results of the EU Lifelong Learning Programme project „Application of apprenticeship in the vocational integration of the socially disadvantaged youth“ (APPRENTSOD) aiming to develop sets of instruments of vocational integration of disadvantaged youth based on the innovative solutions and approaches of apprenticeship training in Germany, Italy, Spain and Lithuania. (<http://www.sodapprent.eu>).

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1 Introduction

Socially disadvantaged young people (this category comprises different groups of youth, such as orphans, young people from socially excluded families, handicapped persons and drop-outs from general educational institutions among others) in many cases do not have access to high quality VET due to their failures in the system of general education.

Formal education, on its side, is not always professionally prepared to work in heterogeneous pedagogical fields, i. e. with learners with lower social capital due to a manifoldness of reasons (Giménez and Marhuenda, 2012). Socially disadvantaged youth suffer under high unemployment or low quality of jobs due to their social background related to characteristics influencing their school performance and level of acquired skills and qualifications (Saniter, Bücken et al., 2014).

Enabling these young people with previous negative formal learning experiences to enter work and enterprise based learning environments will open new possibilities and motivation for successful learning, especially to ‘practically gifted’ youth. These and other factors require considering apprenticeship as a potentially effective measure of vocational integration of socially disadvantaged youth; but in countries like Lithuania and Spain the development of VET in the second half of the 20th century left aside their history of experience and know-how in applying apprenticeships as a whole. These have been recovered in the past two decades for VET in general but particularly as a fruitful measure for vocational integration of socially disadvantaged youth.

Apprenticeship approach can be applied for propaedeutical purposes, when apprenticeship schemes are used for the enhancement and empowering of marginalized and disadvantaged youth to study in normal initial VET programmes (school based or apprenticeship) afterwards. Such application of apprenticeship for the propaedeutic purposes requires revision and specific adjustments of traditional apprenticeship approaches and curricula. Guile and Young (1998) and Marhuenda and Griffiths (2002) notice, that contrary to the traditional approaches of apprenticeship limiting it to implicit and informal learning without pedagogy, apprenticeship involves wide range of learning and knowledge acquisition activities, where learning has strong social and transformative character with collective organisation of the „zones of proximal development“ (Vygotsky 1978). This idea helps to overcome the traditional narrow attitudes to apprenticeship as instrument for transmission of the workplace specific knowledge and skills oriented to the preparation to become a member of the “community of practice” (Wenger 1998). Work process presents by itself the fundamental background for vocational integration of socially disadvantaged youth. Work process oriented training enables effective vocational integration by providing holistic competences and creating favourable conditions for comprehensive and open vocational guidance processes (Hupfer, Spöttl, 2014; Marhuenda, 2009; Spöttl G., Ruth K. 2011). At the same time, work processes have different potential of vocational integration depending on their contents, objectives and other factors. Therefore it is important to identify those work processes that fit best to propaedeutic goals of apprenticeship measures. The criteria for this selection can be drawn referring to the features of work processes and characteristics of the target groups of learners.

In order to address the mentioned debates, the paper will target the following research questions:

- What are the current institutional conditions for implementation of our suggested propaedeutic apprenticeship schemes in the VET systems of Germany, Spain and Lithuania? (legal basis, existing institutional settings of apprenticeship, social partnership and involvement of social partners in the provision of VET).
- What are the current social and economic conditions for implementation of our suggested propaedeutic apprenticeship schemes in the VET systems of above mentioned countries? (implications of labour market situation, capacities of employers and their potential to implement such schemes, attitudes of learners towards apprenticeship).
- What adjustments would be needed for proposed propaedeutic apprenticeship schemes in order to implement them in the above mentioned VET systems by focusing on the institutional settings and conditions?

2 Institutional conditions for the implementation of work process based propaedeutic apprenticeship schemes

Institutional constraints present multiple challenges for application of apprenticeship in the field of vocational integration of socially disadvantaged and marginalized youth. The potential of work based learning has been widely recognised by practitioners and policy makers in many EU countries – there are many supporting examples, such as introduction of apprenticeship as alternative pathway of initial VET in the Law on VET of 2007 in Lithuania, the implementation of entry training [Einstiegsqualifizierung] in Germany in 2004, or recent VET reforms promoting development of apprenticeship in Spain. However, institutions and stakeholders (especially initial VET providers) seeking to conserve their current functions and place in the system very often tend to resist to implementation of apprenticeship schemes and approaches.

According to national policies, the dominant share of the provision of VET and vocational integration services for socially disadvantaged youth in all countries concerned should be supported by the public (or public-private partnerships, such as in Germany). This refers to VET providers and other public institutions, but this function is often delegated to NGOs.

Provision of vocational training and vocational integration services for socially disadvantaged youth in Germany and Spain is primarily regulated by regional authorities, while in Lithuania it is integrated in the general pathway of initial VET and with more centralized governance.

Involvement of social partners in the provision of apprenticeship and VET for socially disadvantaged youth is more developed in Spain and Germany, whereas in Lithuania social partners (especially trade unions and professional bodies) play a very marginal role in this field.

National qualification-systems policies consider the needs and requirements of social integration and thus foresee the measures and instruments related to qualifications and certifications that would increase the access to qualifications. This can be illustrated by the introduction of basic vocational education and related qualifications in Spain, the development of VET-propaedeutic curricula in Germany, and the modularization of the initial VET curricula in Spain and Lithuania.

There is increasing attention to measures that introduce disadvantaged young people to the workplace and real work processes. However, the application of apprenticeships as a policy measure for socially disadvantaged youth in the all countries is rather sporadic in terms of coverage, access and funding.

The lack of systemic approach in planning and coordination of provision of initial VET and apprenticeship for socially disadvantaged youth can also be identified for different reasons, beginning from the regional disparities in Spain, via an intransparent jungle of measures in Germany, and ending with short-term project-based policies in Lithuania.

3 Social and economic conditions in Germany, Spain and Lithuania for the implementation

The *German* situation is characterised by two opposing trends: The ratio of students with special educational needs is *increasing*; whilst the amount of participants in propaedeutic or substitute measures is *decreasing*. The second trend is the result of the demographic development and an apprenticeship system ruled by the market. The first trend is based on the growing number of educationally disadvantaged families. Although a migrant background is one of the risk factors; the issue of becoming (or staying) socially disadvantaged is more of a *class* than a *race* problem: The five federal states at the top of the statistics on the amount of GE-students with special needs are from former East Germany; there the ratio of migrants is less than 3%, whereas in Western Germany it is more than 10%.

In *Spain*, the percentage of early school leavers grew between 2000 and 2009 due to the rapidly expanding economy, particularly in the sectors of construction and tourism where companies were eager to hire non-qualified youth at low incomes, even if that meant that they had to leave school or VET a few months before completing their programmes. The percentage only started to reduce as a result of the financial crisis and the fast growing unemployment rate. Access to formal vocational education is only possible for those who have obtained the Certificate in Secondary Education upon

completion of compulsory education. Therefore, the only opportunities for those not achieving this certificate is to enrol in post-compulsory education, either to participate in a low level 1 non-formal vocational education programme or to enrol in adult education once they are 18.

In *Lithuania*, the competition among the low-skilled and unskilled population for the potential positions in labour market is characterised by a comparatively large supply of highly skilled and educated workers and a comparatively low demand for skills in most sectors. Low-skilled and unskilled workforce can only access unattractive jobs or seek unskilled employment in other countries. Another important field of concern related to social disadvantage are dropouts from the further education institutions. The greatest concern is caused by a relatively high percentage of drop-outs from the vocational schools (around 15%) in recent years. Over the last few years, a slight decrease in the rate of youth unemployment could be observed.

4 Potential and limitations for successful implementation of propaedeutic apprenticeship schemes

In *Germany*, the institutional support of socially disadvantaged youth in VET-propaedeutic measures (re-)started in 1980 via small pilot projects organised by the Ministry of Education and Research; its first legal framework was established in 1988; since 1998 the policies are part of the German Code of Social law (SGB). Almost every institution involved in education of socially disadvantaged youth may apply for financial support and choose between various measures. The curricula of individual measures are mainly for orientation, so each provider can choose his key activities.

In *Spain*, the policies of vocational integration for socially disadvantaged youth are governed by the Department of Education and the Department of Employment. The Department of Education legislates nationwide but differently adapted in each of the 17 regions. The Department of Employment has no legislation about the vocational integration of socially disadvantaged youth in force nationwide, so each of the regions develops its own. A weak point in this approach is that funding of non-formal VET and vocational guidance is based upon subsidized systems. Each of them is run on the basis of a yearly call for tenders. Therefore, no mid-term planning is possible. As a result, many professionals in these measures switch among organizations and change jobs, which hinder the establishment of long-term positive relations with young people. In other cases, these professionals maintain those relations beyond their contracts, which means that they do accompanying educational work on a free, voluntary basis. Nevertheless, due to the financial crisis affecting the country, another effect is that most training providers have run programmes in 2011 and 2012, which have not yet been paid for by the administration subsidizing them. Lack of conditions for proper planning is indeed the source of all other obstacles.

In *Lithuania*, no specific social or educational policy addressing vocational integration of socially disadvantaged youth exists. This issue is tackled by several different policies. The Ministry of the Social Affairs and Labour has launched the Entrepreneurship Promotion Fund and has placed a major focus on young persons, unemployed individuals, and disabled and elderly people. As regards the use of these funds, better financing conditions have been created for very small and small enterprises, natural entities to start their business and social enterprises trying to develop their own business. The Ministry of Education and Science has legislated foreseeing a complete shift to modular VET programmes in the future. Modularization of initial VET curricula will also involve the possibilities for learners to shape their vocational competences and qualifications by assessing skills and competences acquired in informal and non-formal ways and thus shortening the duration of training, as well as to enable acquiring partial qualifications that would facilitate their rapid employment. Each module will lead to the acquisition of a partial qualification documented by an appropriate certificate. Today, the student who leaves the training programme without completion receives only a certificate of acquired learning outcomes that, in turn, enables him/her to return to initial VET and to have previously acquired learning outcomes recognized – but it has very limited value in the labour market.

5 Résumé

Findings sketched (more details on <http://www.sodapprent.eu>) indicate that there is no “silver bullet” to support socially disadvantaged youth; preconditions of target groups, educational aims, national/regional policies, and sectors are spread widely; but we found evidence on really successful grass-root programmes. Unfortunately there was also broad evidence on poor funding; even successful programmes have to close or shorten their activities – an obvious violation of political aims like “The level of qualifications of the European workforce should meet the new needs of the labour market” (EU: New Skills for New Jobs, 2009).

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‘Living’ the Curriculum at School and Classroom Level. An International Multilevel Study on Pre-Vocational Education in Germany, France and Great Britain

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1 Introduction

The international comparative study being presented is referring to different levels in the education and curriculum systems of selected parts of Germany, France and Great Britain (see below). Within this case study, the official curriculum stipulated at the level of education policy and the practiced or ‘lived’ curriculum on school and classroom level, are being compared. The focus is on pre-vocational education, understood here as comprising all relevant school subjects and educational measures on lower secondary education level (leading to a diploma at ISCED-level 2) contributing to an understanding of the world of work and economics (Berger, 2015). To satisfy the variously shaped facets and dimensions of pre-vocational education, the research design is set up in a multilevel and multi-method design (Yin, 2003, p. 50) (see below).

The relevant research questions of the study are: What influences the implementation of the “official curriculum” (Berger, 2015, according to Posner, 2004, p. 191) on the school and classroom level in lower secondary education in Germany, France and Great Britain? What are the peculiarities, similarities, and differences in the structure and contents of pre-vocational education between the three countries and how can they be interpreted with respect to the wider cultural, economic, and political context of each country? – For example, how does the structure and image of VET affect the design of pre-vocational education in the selected countries? (Berger, 2015)

2 Research Design and Methodology

The international comparative study focuses on the investigation of the variously manifestation and shape of pre-vocational education in the three *core European countries* Germany, France and Great Britain. The country sample was determined on the basis of a *most different system design* (Przeworski & Teune, 1970, p. 32). Here, the differences within the structure of the education systems (and the wider social, economic, and cultural context as well) of the countries serve as explanatory variable for the object of investigation. The case study design of the study required a selection of regions within two of the three countries investigated: As the German education system is regulated under federal law, two states (Bundesländer) have been selected: *Baden-Wuerttemberg* and *North Rhine-Westphalia*. With respect to the different structures of the education and curriculum systems of England, Scotland, and Wales, the focus of this case study is on *Scotland*. In consequence, the results of this case study cannot be used to generalize the findings across each country.

The multilevel research design of the case study investigated different levels in the education and curriculum systems (Bray & Thomas, 1995, p. 475; Fend, 2006, p. 31) of the three countries: The *macro-level* of education policy, the *meso-level* of the single school in its local environment (Fend, 2008, p. 17), and the *micro-level*, in terms of the teacher’s “individual curriculum” (Squires, 2009, p. 142; Vollstädt, 1999, p. 15). Furthermore, the *meta-level*, within the meaning of the wider social, economic, and cultural context of each country (Berger, 2015), provided a solid foundation for the interpretation of the empirically collected data.

The research covers the period from 2010–2012, and is based upon the collection of qualitative data. On the basis of a literature analysis, the legal basis of the education system of each country (or rather region¹), the structure of the education system, and the transitions therein were investigated. Another research focus on this *macro-level* was set on teacher training. With a closer look into lower secondary education, the canon of core subjects and their assessment, as well as the relevant pre-vocational education subjects have been identified. Focussing on the “prescribed” (Bloomer, 1997, p. 135) or *official curriculum* for pre-vocational education subjects, a qualitative criteria based content analysis (Adamson & Morris, 2007, p. 274) showed the thematic focal points within the syllabuses. To provide a coherent basis for the analysis of the syllabuses and for enabling to carry out a homogeneous comparison of the countries concerned, an analysis framework was developed (Berger, 2015). To ensure that this analysis framework was valid, it was piloted by two independent coders and necessary amendments were made to optimise it. This helped on the one hand to ensure the quality of the methodological tool, and helped on the other hand to monitor the accuracy of the coders (Früh, 2004, p. 108). Within a sentence-by-sentence analysis, the text extracts found within the syllabuses were assigned to the previously defined criteria, as appropriate. This criteria based analysis served to cluster the curriculum content and to identify the respective key topics for the subsequent evaluation and cross-country comparison (see below). In each country, the official syllabuses in force in the final two years² of general lower secondary education within the pre-vocational education subjects (e.g. Business, Economics, and Social Science, as well as Careers Guidance subjects) were selected. The selection included both compulsory and elective subjects. Furthermore, for the analysis, the syllabuses of separated subjects and integrated subject areas have been considered: In the latter case, the curriculum content is taught within an existing subject or subject cluster, such as Civic Education or Social Sciences. In separated subjects, the content is taught as a discrete subject within the curriculum, such as Business Management or Economics (Pilz et al., 2014, p. 31).

While emphasising the *meso-level* of the single school and the *micro-level*, in terms of the teacher’s “individual curriculum” (Squires, 2009, p. 142; Vollstädt, 1999, p. 15) in classroom practice, qualitative expert interviews with 42 headmasters and teachers from the three countries were carried out. A semi-structured interview format has been used for the surveys conducted in the mother tongue of the interviewees (Berger, 2015). On the single school level the relevance of pre-vocational education measures (e.g. the involvement of companies in teaching practice) was retrieved. Furthermore, the local, physical and personal parameters for the realisation of the official curriculum in the interviewed institutions were investigated. On the level of the individual curriculum (micro-level), the thematic and didactical settings of priorities of the teachers were studied. Furthermore, the interview guideline comprised questions on the strengths and weaknesses of the curriculum’s implementation and its conditions from the perspective of the interviewed teachers.

The evaluated data are firstly reflected in *single country studies*: The findings from the macro-level, and there from the officially enacted curriculum, are compared with the implementation of the official curriculum by the schools and teachers, respecting the conditions on the local and practice level. Secondly, within an international comparison (*cross-case study*), the overall results of the three countries are interpreted and relativized in the wider context of the respective social and economic situation, and educational culture of a country (meta-level) (Schriewer, 2000). In this final cross-country analysis (Yin, 2003, p. 50), the peculiarities, differences, and similarities in economics and business education of each country are identified.

Due to a lack of space, in the following section the findings from both the single country studies and the cross-case study will be presented in a coherent manner.

¹ When the terms *Germany* or *Great Britain* are used in the following, the two selected Bundesländer/states (North Rhine-Westphalia and Baden-Wuerttemberg) and Scotland are meant.

² As the study was restricted to selected parts of the official syllabuses, relating to type of school and year-group in the three countries (or rather regions), it is not possible to draw any generalizable conclusions in relation to the official curriculum in its entirety.

3 Findings

The findings show, that although there are *more differences on the macro-level* of the education systems of Germany, France and Scotland, there are *more similarities in school and classroom practice*.

With a view to the *macro- or system level*, the findings of the study reveal that there is a relatively narrow canon of compulsory subjects taught in lower secondary school in Germany and France (see below). Conversely, great school and individual autonomy exists in Scotland. In *Scotland*, there are only a few compulsory subjects within the final two years of compulsory education, e.g. Math, English, a foreign language, Sciences, Physical education (McGlynn et al., 2012, p. 18). In consequence, the individual school is responsible for the extensive range of mandatory courses. This high degree of personal responsibility is also reflected in the liberal economic and social structures in Great Britain (Pilz & Deißinger 2001, p. 443; Pring, 1995, p. 171). For pre-vocational education, mainly three separated subjects exist: *Economics, Business Management, and Work Experience* (SQA, 2000, 2009a & 2009b).

The curriculum content in pre-vocational education in Germany and France is taught within integrated subject areas: In the *German* state Baden-Wuerttemberg, there are at the *Realschule* (selected type of lower secondary schooling in Germany) the obligatory subject cluster *Geography-Economics-Politics* and the two project courses *Business, Administration, and Law* and *Career Guidance* (Kultusministerium BW, 2004). In North Rhine-Westphalia, pre-vocational education is taught within the both integrated subjects *Social Sciences* and *Politics* (Kultusministerium NRW, 1994 & 2001). The latter subject is an optional subject at the *Realschule*. There is a narrow canon of compulsory subjects taught at the *French collège* (comprehensive school at lower secondary education level). Pre-vocational education takes mainly place in the obligatory subject cluster *History-Geography-Politics*. In addition, the course *Career Guidance* can be chosen as supplementary option in the final two years of the *collège* (MEN, 2012).

Depending on the structure of the subjects, the thematic focal points within the curricula vary as well: The content analysis of the relevant official curricula of the selected subjects and courses in the three countries showed that the integrated or clustered subjects (as used in France and Germany) focus primarily on *broader economic issues*, such as the internationalisation of trade, or the labour market policy instruments of a state. In both countries, the subjects pay very less attention to business administration topics. In comparison, whereas both German and French curricula prioritise knowledge-based competencies in economics, in Scotland the emphasis of the prescribed or official curriculum is more upon a *specific business competencies set* within occupational sectors. The analysed syllabuses cover the specifics of business planning and development, or enterprise education (Berger, 2015).

Coming from the macro-level now to a closer look into the findings on the *meso-level* and the *micro-level*, the interviews with headmasters and teachers³ show that the teachers' pedagogical and didactic freedom, hence the *individual curriculum*, is highly influenced by the obligatory nature of each subject and its consideration in the final exams. In all three countries another important influencing factor for the implementation of the official curriculum on the institutional and classroom level is the professional qualification a teacher: Former areas of study and non-school related job experiences affect the schools' personnel planning as well as the individual focuses of each teacher's lessons. The findings show, that teachers who have already worked in the private sector usually attach a higher importance to prevocational education matters than those who do not have such professional experiences. Furthermore, the interviews with headmasters and teachers show that in all three countries pre-vocational education is often taught by teachers from a different discipline. The causes mentioned by the interviewees were on the one hand a lack of qualified staff in the individual schools, as the following quote⁴ of a teacher in Scotland underlies:

³ The sample of 42 interviews at 21 schools in selected regions of Germany, France and Great Britain implies that the findings of this qualitative study do not aim to draw any generalizable conclusions.

⁴ All quotes from the interviews can be found in Berger (2015).

“Staff is problem. At our school we do not have enough Business-teachers. Me too, I do not have ad diploma for Business studies [I have one in Information and Communication Technology], so I have taught myself” (Interview No. SCO13, Scotland).

On the other hand, the problem of teaching outside the teacher's subject area is caused by the system of teacher training itself, as for example in the cases of France and Baden-Wuerttemberg: Typically, future teachers have studied only one of the three sub-subjects of the subject cluster History-Geography-Politics or Geography-Economics-Politics. Even though these teachers have the official entitlement to teach the whole subject cluster, they feel inexperienced in the subjects which have not been part of their former studies at university:

“You are doing everything to approach topics, where you are feeling competent. My focus is on History. In Geography, I am only doing the most important matters” (Interview No. FR3, France).

The interviewed teachers in Germany, France and Scotland seek a greater autonomy in teaching: There is a sense of an over-crowded written curriculum, leaving insufficient freedom for a more student-centred learning and its practical application. For the purposes of illustration of this aspect, here two quotes of teachers in Germany and Scotland:

“In Politics, we are only having three hours. This is too less. I am feeling constricted because this hardly offers possibilities for individualised instruction. This is very sad” (Interview No. NRW9, Germany).

“I think, if we had just more time to actually try to focus more and deeper on developing these other skills, the softer skills, and in developing the enterprise skills [...]. To do much more active learning” (Interview No. SCO9b, Scotland).

Furthermore, teachers argue the need for strengthening the cooperation with the business environment (Berger, 2015). Whereas partnerships between schools and companies in Scotland and Germany are common, France is still in its infancy for 'opening of school': French teachers reported that, for a long time, "the economy" has been seen as a "dirty word" and a "taboo" in the general education system (Interview No. FR5, France). An explanation could be that the French education system is based on the classical humanist ideal, accompanied by a strict rejection of any form of *vocational or work related learning* (Berger, 2015).

The similarities on the school and classroom level where the official curriculum is practiced and *lived*, demonstrate the key role of the teacher as "curricular-instructional gatekeeper" (Thornton, 1991, p. 237). The research shows that alongside the governmental and administrative setting of a country, curriculum design has to consider the conditions on practice level and, in particular the individual background and formation of a teacher.

4 Conclusion

There are limitations to this type of qualitative case study. The concern has been with the particular rather than the universal, and, as such, the study cannot be generalizable across a wider population. Nonetheless, in sense of getting through foreign understanding a better and deeper understanding of the own situation (Georg 2005, p. 186), the finding of the present study gives differentiated insights into pre-vocational education in lower secondary education in Scotland, France and Germany. Consequently, fields for future political action and potential areas for further research can be identified.

Notwithstanding the variations on the macro-level of the curriculum and educations systems of Germany, France and Scotland, it could be shown that the interviewed teachers and headmasters were placing similar emphasis in their own vision of the official curriculum: Teachers attach particular importance to offer education on an individualised basis with a great link to the world of work

and business. From the evidence presented in this study, additional time from both institutions and teachers is required, e.g. to strengthen cooperation and activities with local business partners.

Additional data from a wider group of headmasters and teachers and/or lesson observations would be required to substantiate the discussed teachers' key role (see above) in the implementation of the official curriculum.

Many teachers often view business from an outsider's perspective (Canning et al., 2012, p. 204). Offering company placements and in-service training courses to develop teacher's insight into employment practice, could, therefore be an appropriate way in initial and further teacher training. An alternative approach would be to encourage a more direct involvement of firms within normal teaching practice at lower secondary education level, e.g. through integrating placements and company visits or projects with business partners (Asher, 2005, p. 66). Therefore, with regard to future research, interviews with employers and stakeholders in business could serve to identify their expectations and wishes regarding the collaboration school – business world.

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Training Networks in VET as Innovative Concepts – Reasons and Boundaries for Training Companies to Participate

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Abstract: During the past decade vocational education policy has been furthering training networks. Enterprises which are too small or too specialised to offer an apprenticeship place on their own join a network of training companies. The responsibility for recruitment, placement, and formal qualification lies with a professionalised lead organisation. During their apprenticeship, the apprentices switch their training company on a (half-)yearly rotational basis. Based on a case study of four training networks in Switzerland the aim of this paper is to understand the reasons for the slow and hesitant institutionalisation of this new organisational form of VET that has high potential for improving quality of VET, for creating additional apprenticeship places and for integration socially disadvantaged youth into post-compulsory education.

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1 Introduction

During the past decade vocational education policy in Switzerland as well as in other countries like Germany, Austria or Norway has been furthering training networks or training circles¹ as an alternative location for the placement of vocational training opportunities in the dual VET system (for Austria: Lachmayr and Dornmayr, for Germany: Schlottau, 2003; 2008; for Norway: Michelsen and Høst, 2004; for Switzerland: BBT, 2008). This policy is a reaction to changes in the training conditions of companies due to rising requirements on flexibility, implementation of new technology, the rationalisation of production processes or the outsourcing of parts of production or services (Walther and Renold, 2005).

Based on a case study of four training networks in Switzerland the aim of this paper is to understand the reasons for the slow and hesitant institutionalisation of this new organisational form of VET that has high potential for improving quality of VET, for creating additional apprenticeship places and for integration socially disadvantaged youth into post-compulsory education.

2 Training Networks

Enterprises which are too small or too specialised to offer an apprentice a training-programme on their own can form a training network with other enterprises to cover all the elements in the training plan (Figure 1). A so called lead organisation recruits on the one hand training companies that are willing to join the network and that are able to train apprentices on a good quality level. Members of this organisation support the training companies in administration and training and in situations of problems that arise with the apprentices.

On the other hand the lead organisation recruits the apprentices, draws up the training contract with them and places them on a (half-)yearly rotational basis in the training companies. The responsibility for formal qualification lies with this lead organisation. With this, the training companies pass responsibility for the apprenticeship over to the lead organisation, but pay the salary of the apprentices and the service of the lead organisation.

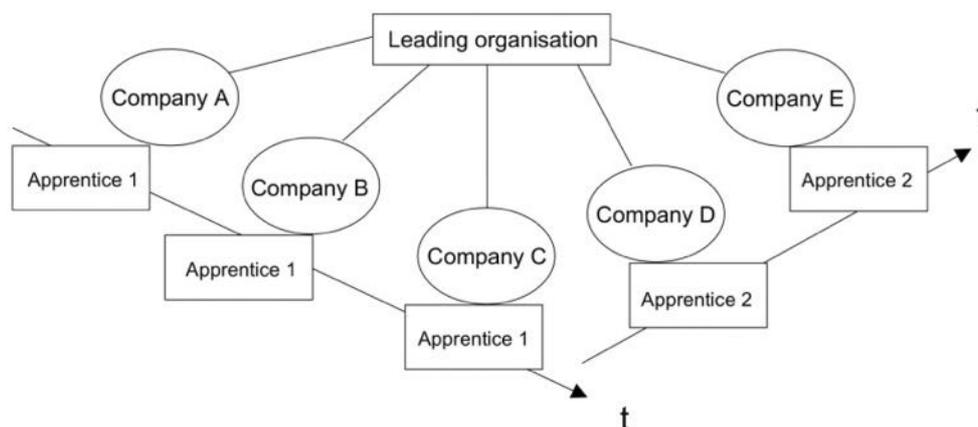


Figure 1: Structure of a Swiss training network and the rotation of apprentices

3 Potential of training networks

The furthering of shared training particularly of small and medium-sized companies (SME) can serve on the one hand the public good of creating additional apprenticeship opportunities and of fostering

¹ Germany: Verbundausbildung; Austria: Ausbildungsverbünde; Norway: Local Training Agencies; Switzerland: Lehrbetriebsverbünde.

the integration of socially disadvantaged youth into the employment market (Imdorf and Leemann, 2012). On the other hand, this new educational form can help improving the quality of VET in SME because it gives apprentices insights in different field of branch activities (Leemann and Birr, 2015) and fosters competencies of flexibility and mobility with the apprentices (Leemann and Sagelsdorff, 2014).

Shared training by means of these networks could also have many advantages for the training companies. The leading organisation possesses the resources (time, tools, and qualified personal) for a professional recruitment of apprentices and assists the training companies significantly in providing the training services, in supervising the apprentices and supporting them in difficult situations that could lead to an interruption of the apprenticeship. It coaches the professional trainers in the training companies when new regulations in the VET-system are introduced. The training companies are freed from the responsibility for the apprenticeships themselves. If ever serious problems occurred with apprentices the lead organisation is accountable for their relocation.

4 Impediments in running a training network

Nevertheless, we can also imagine disadvantages for the training companies and problematic constellations of such a training network that could hinder training companies to join a training network or that could lead to a withdrawal from the training network. One reason could be the payment for the lead organisation in cases where training companies are not satisfied by the services of it. Another reason could be found in the rotation principle because firms have to introduce new apprentices into the company culture, operational sequences and array of products again and again and lose the well instructed and familiarised ones every (half-)year. Not least competition between the training companies becomes reality when they fear that business secrets are passed over or that they lose the good apprentices as future employees.

5 Aim of the paper

Although the model of training networks is an innovative and promising concept in VET that might support SME in contributing to the VET system, that can improve quality of VET and that has the potential to give access to socially disadvantaged youth to an apprenticeship, the share of training networks in the VET system is rather small and has not been substantially increasing during the last decade.

Unfortunately no statistical data on the number of apprenticeship places in training networks or on the spread of training networks is available. On the basis of an evaluation of the Swiss Federal Office of Vocational Training and Technology (BBT, 2008) and of an own appraisal (internet-enquiry) we estimate that the number of apprenticeships in training networks has increased from 1 percent to 3 percent of all apprenticeship places in the last fifteen years.

The aim of the paper is to understand the reasons for the slow and hesitant institutionalisation of this new organisational form of VET. Therefore we will treat the following two questions: 1) Why companies do join a training network and participate in this form of VET (reasons to participate)? 2) In which situations they express critique and dissatisfaction, call for adjustments and improvement of the organisation of the training network and threaten to withdraw from shared training (boundaries to participate)?

6 Theoretical framework

To reveal and conceptualise the different competing and conflicting rationalities of training companies in participating in a training network, we refer to the French sociology of convention (Boltanski and Thévenot, 1999; Diaz-Bone, 2011). Conventions are collectively established principles of orientation and action (orders of worth) on the basis of which actors evaluate and coordinate in social situations and justify their actions and decisions.

The social world comprises a plurality but finite number of conventions whereby the conventions of market, domestic, civic, industrial, fame, inspiration and project are relevant to understand

the dynamic in training network. To keep the training network running, compromises, i.e. durable agreements, constructed on the basis of different conventions, have to be found (Jagd, 2011).

7 Data

The empirical data stems from a case study of four theoretically selected training networks with a mixed method design (Yin, 2009). Two training networks have been established top down by the initiative of a public organisation; the other two training networks have been founded bottom up by the initiative of a professional or branch association.

The paper is based on 36 expert interviews with selected training companies in the four training networks as well as on documents like educational concepts or annual reports.

8 Results

The results demonstrate the plurality of rationalities that underlie the motives of training companies for participation in a training network. We find two main motives. On the one hand training companies stress the potential of the rotation system in forming a qualified work force thanks to the experiences that apprentices gain in different fields of the branch and due to the expertise of the lead organisation in training the apprentices (industrial convention). On the other hand, certain training companies refer to the civic convention when explaining their participation by referring to their public responsibility for offering training positions to (socially disadvantaged) youth.

Besides that other and additional motives can be found. For example especially small training companies participate due to the good image and reputation of a training company in the training network or of the training network itself what attract well qualified and motivated youth (convention of fame).

As to the boundaries of participation one problem is the fact that training companies lose the possibility of recruiting the apprentices on their own. Instead they get them assigned in the context of the (half-)yearly rotation and they have to work with "the human material" they receive. As a consequence training companies complain about certain groups of apprentices (e.g. youth with migrant background) who do not fit into the culture of the firm what reflects the agency of the domestic convention.

Critiques about the amount of additional work for introducing every (half a) year new apprentices is a feature of the industrial convention. Critique that relies on the market convention we can observe when training companies are no more willing to pay the "high price" for the apprentices and claim for reduction.

In a training network a mixture of different and sometimes contradictory rationalities is melding and resulting in conflicts so that the lead organisation is challenged to find solutions and compromises to keep the training network running and to prevent a withdrawal of a training company from the training network.

The results on the motives of training companies for participation in training networks help understand the "social glue" which binds the different training companies together into a lively and flexible organisational form. Knowing the boundaries for participation and the dynamics of conflicts and compromises of this complex and unstable organisational form help understand why this innovative concept has problem in gaining a foothold in the VET System. All in all this allow better advice for training networks in acquisition of potential training company and cooperation with training companies.

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New and Old Partnerships Targeting VET in the 21st Century

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Abstract: In the changing world of work new forms of work-organisations and new types of work-contracts raises the question of partnership between employers and employees in a broader sense. Policy makers are turning to new forms of partnerships and seeking to include a wider range of stakeholders related to the issues around the world of work, among others on vocational education and training. One part of my paper is based on review of literature on the changing partnerships related to VET. Other part of my paper is based on the second analysis of an on-line survey which addressed the members of a former civil association connected to VET, the Hungarian Association of Vocational Education (MSZT). The purpose of the questionnaire was to measure how former members of MSZT feel about the efficiency of partnership, the role of each stakeholder group and the strength of the partnership regarding VET.

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1 Introduction

My paper is based on research started in the end of 2014, aiming to examine the role of social partners in the management and development of VET in the European level and to find out the extent to which social partnerships targeting VET can be considered as ‘new social partnerships’ according to the concept of the The Copenhagen Centre (TCC). The main research questions are, who can be seen as new actors among social partners related to VET, what can be considered as their specific role, and also, how can old and new actors work together in order to achieve the best results in those fields of VET where social partners had traditionally significant role in the past. My hypothesis is, that we can find new forms of partnerships around VET vigorous and efficient in countries with strong traditional social partners. However, strong centralisation of power does not provide supporting environment for the new partners, with the exception of those who have been established by the central governments.

2 Conceptual and theoretical framework

Economic crisis, introduction of new technologies and new products, requirements for new skills and new qualifications can generate less or more serious conflicts, disharmony between the interests of the employers and employees, which calls for applying the instrument of dialogue and harmonisation of interests. The social partners traditionally play a key role in this process. Since some large companies - included many multinationals - make it forbidden for their employees to be organised in trade unions or in work-councils, or punish them if they do so, it is a widely unsolved question how to ensure the representation of the interests of employees in these companies.

„While 33 per cent of the workforce were trade union members in the OECD area in 1970, this percentage had decreased to eighteen per cent in 2008.” (Visser, 2009, cites Afonso 2013, p.32). „Within the European Union, the number of trade union members declined from 46 to 43 million between 2000 and 2008, whereas the number of non-unionised employees increased from 120 to 140

million people. Trade union density fell from 27 per cent to 23 per cent in the EU during this period.” (DG Employment and Social Affairs, 2010, p. 25, cites Afonso 2013, p.32).

Social partnership has been associated with „low voltage” politics, and Peter Katzenstein has described it as a „relatively dull and predictable kind of politics” (Katzenstein 1985, p. 32, 87). Katzenstein calls the ideology of social partnership as the main characteristic of democratic corporatism, shared by both business and unions and also expressed in national politics. As this ideology permeates everyday politics in corporatist societies, it can moderate class conflict between business and unions. Democratic corporatism can be featured by centralized interest groups and emerging peak organizations (Katzenstein, 1985). Studying the relevance of the theses of Katzenstein in the later decades, it must take into account that business has internationalized so that both large and small states „do not have a dominant domestic business class with which to negotiate” (Keating and Harvey 2013, p. 7). Since capital is more and more mobile, investors can give up social compromises and can go away to another country. Trade unions have declined both in numbers and influence in the last decades. Thereby, evidently, corporatism came back in the 1990s in the form of - among others as - ‘social partnership’, differs from the former corporatism in its frame and content. The role of the market strengthened, the redistribution has weakened compared to the previous one. As the result of negotiation, instead of the former „over-arching and binding deals across the policy spectrum, there are more limited agreements”. This new social partnership already includes earlier excluded social welfare groups and environmental interests. However, some researchers say, that the extending of partnership to other groups may reduce its effectiveness. Also, there is a risk, that private groups might be excoriated as ‘special interests’, addressed respectfully as ‘stakeholders’ or incorporated as ‘social partners’ or ‘civil society’. "Without strong government, social partnership can become a mere vehicle for brokering private interests and privileging existing power holders. The design of government is therefore critical.” (Keating and Harvey 2013, p. 7, 8, 8-9).

According to the literature, the term ‘social partners’ does not have an exact and strict definition, it can be divided into two broad groups. A more traditional definition refers to the representatives of the government (local, regional or national), the employer’s organisations and the employee’s organisations. The other, broader definition of social partners includes representatives from various community groups or organisations from the ‘civic’ society involving other social issues outside of employment. According to some examples, the higher rate of civilians among the social partners, the higher level of their participation in employment and training issues (Scottish Executive 2002).

As the effect of long-term socio-economic changes, collective organisations become more difficult: „the appearance of deindustrialization, the emerge of white-collar, atypical, and part-time employment, the growth of private services cause changes in normative orientation from collectivism towards individualism” (Ebbinghaus 2002, p. 5). The ever accelerating economic and environmental changes require faster and faster responses from companies. By the reduction of the organizational hierarchy, responsibility is placed to the low level of the work organisation in many cases. The emergence of flat work-organisations and the empowerment of employees represent the answers in many innovative companies to the new and rapid challenges (Bakacsi 1994). According to the theory of Human Resource Management (HRM), flat work-organisations provide such conditions for their employees which make un-necessary for them to be organised in the framework of the traditional trade unions. HRM says that employees who are working in flat work-organisations have a direct way to represent their interest to the management, so they do not need special bodies to represent and save their rights against the employers.

As the result of the changing environment of the world of work, obviously, new ideas have appeared on the forms and resources of the social partners in the last decades. O’Donnell outlines a new interpretation of social partnership, derived from reflection within the policy process in Ireland. His definition or description of the „new social partner” emphasises „process rather than structure”, and „information rather than force” (O’Donnell 2001, p.7). While the key resource of the traditional social partner was bargaining, the key resource of a modern social partner is information. In the place of the old forms of bargaining new forms of public advocacy emerged, as analysis, dialogue and shared understanding. „The new social partner is an actor, not just a voice. Mobilising, organising, delivering and solving problems (with others), seem to be features of effective social partners”

(O'Donnell 2001, p.9). This way social partnership can be considered as an instrument of direct participatory democracy.

According to the policy paper of The Copenhagen Centre (TCC), the definition of New Social Partnerships has six key principles, as societal aims, innovation, multi-constituency, voluntary, mutual benefit and shared investment and alchemical effect (Nelson and Zadek 2000). These new partnerships mean important sources of innovation both at the local level (by practical local actions) and also at the European and national levels (by policymaking). „They involve many individuals and organisations throughout Europe, covering a wide diversity of cultures and socio-economic problems and opportunities” (Nelson and Zadek 2000, p. 5). An important feature of new social partnerships is, that they can be effective to solve societal problems in cases where traditional, single sector approaches are not effective or inadequate. Another major feature of the new forms of partnership, that the traditional social partners – employers' organisations and trade unions – are not being involved and do not play necessarily an important role in all of them. Many of the new partnerships are developing from the 'bottom-up'. These new partnerships involve and mobilize new actors, like individual companies, community organisations and social entrepreneurs. One of the main benefit of these new partnerships is learning how to build unfamiliar approaches to work together with different people and organisations, and also building synergy from diverse cultures, networks, and competencies. This alchemy makes these partnerships more than the simple sum of their parts and also makes it effective focusing both their shared societal purpose and the individual interests all of those involved. On this basis, the Copenhagen Centre defines new social partnerships as: „People and organisations from some combination of public, business and civil constituencies who engage in voluntary, mutually beneficial, innovative relationships to address common societal aims through combining their resources and competencies.” (Nelson and Zadek 2000, p.14). The TCC paper also emphasizes, that in the new model „Traditional power hierarchies are being replaced by a more complex, multi-relational balance of power, where citizens and companies are playing an active role in shaping socioeconomic change and addressing problems that were previously the sole responsibility of government.” (Nelson and Zadek 2000, p.7).

The works of Nyhan (2007), Billett (Billett and Seddon 2004), Ennals (2002) and McQuaid (2000) represent meaningful contribution to the study of the theory of partnership around VET.

3 Methods and empirical foundations

One part of my paper is based on review of the literature. I was planning to search for literature focusing on the evaluation of the role of social partners in VET. Since the topics dialogue and social partnership – especially the role and the function of trade unions – are still sensitive questions in many countries, my original research plan was to analyse case studies from more advanced (European) countries to discover the participation of the social partners in concrete development projects related to VET. However, I had to recognise, that it is rather difficult to find and get access to country-specific reports and case studies in English, so I had to change my original plan and reduced the focus of the literature review on assessments and summary works, focusing mostly on the European level.

Other part of my research is based on the second analysis of an on-line survey was carried out in January 2014. The survey addressed the members of a former civil association on VET in my country (Hungarian Association of Vocational Education, MSZT), 596 members. The response rate of the survey was 25 %. The purpose of the questionnaire was to measure how former members of this civil organisation feel about the efficiency of partnership, the role of each stakeholder's group and the strength of the partnership related to VET. The questionnaire consisted of multiple choice questions and Likert scale questions. One section of the questionnaire was directed to the main tensions of our VET system, and another was directed to the role of different interest groups in vocational education and training. SPSS analysis of data did not show connection between the searched variables. Questions of the survey were directed to the efficiency of dialogue and partnership, the opinion of MSZT-members on centralisation of power, the evaluation of reconciliation meetings, the evaluation of the

different forums representing interest groups and to discuss issues related to VET, the value of each stakeholders group by their catalyst-role and the power of each stakeholders group in forming VET.

The survey was novel without previous precedents on the research issue in my country.

4 Outcomes

It seems to be obvious that new types of contracts with employees and new forms of work-organisations raises the question of partnership between employers and employees and the state in a broader sense and in a new dimension. Also, the wish to increase the level of democracy in the society demands new forms of partnerships and new actors to represent the interests of different parts of society. Across and beyond the EU, policy makers are turning to new forms of partnership and seeking to include a wider range of stakeholders in the design, planning and delivery of policies related to the issues around the world of work, among others, on vocational education and training.

Seeking answers to the challenges, how vocational education system can meet the demands of the process developing and changing work organization, products, and work processes, research carried out in the ITB has confirmed, that the debates and the decision making on the future of the dual vocational system, the school-based system and the so-called transition system in Germany is complex because of „the specific prevailing institutional configuration of the social partners and the related responsibilities involved” (Spöttl and Windelband 2013, p. 8). According to Kohlrausch (2009, p.29-40, cites Spöttl and Windelband 2013, p.8-9) „these responsibilities are to be found on the following three levels: “Regulation” through social partners (corporate system); Occupational structure of qualifications; Capacity of companies for social integration.”

A research in Australia points out, that „small business now comprises 99.7% of all small and small to medium sized businesses on the planet, and employs 75% of the world’s workers”, (UNESCO 2005, Annex 2 p. 5, cites Plane 2007, p. 2). Despite the fact, that small business is a key stakeholder in the workforce, it is often excluded within the discourses of social partnership and disenfranchised from the debate. According to a policy paper, their role should be redefined related to community and sustainable development at the regional level (Victorian Government Parliamentary Paper 2005, p. 6, cites Plane 2007, p.2). There are serious challenges for practice, how to support the inclusion of smaller business and how to connect social partnership to smaller business at the local level. Also, it is a task for the future to find the right balance of corporate community involvement in VET.

Social dialogue is critical for the success of VET, both in case of initial vocational training (IVT) and continuing vocational training (CVT), „especially where the social partners are involved in the identification of training needs, curricula and content of training” (Finlay & Niven 1996, cites Stringfellow and Winterton 2005, p. 140). Related to the role of social partnership in the development of VET, analysing VET models, CEDEFOP research points out that, the model of "social democracy" is based on democratic participation and social partnership. „In terms of VET for social inclusion this means that socialisation is particularly important. For social cohesion, socialisation as an active citizen is relevant in terms of democratisation.” (Green and Preston 2008, p.70). Studying the involvement of social partner’s in VET, Winterton emphasizes, that "social partner involvement in implementation is more extensive in countries where VET is focused on the workplace than in those where VET is focused on the school” (Winterton 2007, p. 294).

I assumed that new forms of partnership, new actors can be more successful in those countries, where the traditional forms are successful and politically supported. In less democratic countries the non-traditional forms of partnerships have limited role in the representation and reconciliation of interests. The civil organisations are still weak in many cases and some of them are influenced by the central governments. According to a recent study on the OECD LEED programme (Froy and Giguère 2010, cites Campbell 2012, p. 55) of eleven countries (Bulgaria, Canada, Croatia, Denmark, Greece, Italy, New Zealand, Poland, Portugal, Romania and the USA) „in many countries, cooperation remains at a relatively formal level, not translating into real policy integration of joined-up strategies”.

As a recent policy action related to VET, the Council of Europe is targeting to raise the status of VET and also gives a higher weight to adapt VET to local needs. According to the plans, „vocational

education and training boards on a local level should include at least representatives of schools/colleges (general and vocational), social partners, chambers of trade and industry, employment services and local authorities as stakeholders” (Council of Europe 2014, p.1-2).

According to the findings of the MSZT questionnaire, experts consider very important to develop partnership in local communities in the field of VET and strongly wish to participate in a broad decision making process related to VET. This former civil organisation seems to be very critical about the efficiency of civil organisations related to vocational education and training in general in my country. Also they were very critical about the role of trade unions. They confirm regional institutions (managed and controlled strongly by the central government) as the most powerful institutions making decisions related to VET. But, in a former research we experienced that teachers found themselves the most competent actors to make decisions what qualifications are needed to teach in VET schools in the future. It means that according to their opinion the most powerful partners are not necessarily equal the most competent partners (Benke 2010, p. 87).

I have studied summary works and assessments, some very valuable literature, articles and documents, which provided me with good basis to continue the work on this very interesting issue. It seems that the main tensions maybe located between traditional social partners and not around the new partners.

It seems that there is not too much attention nor interest focusing on the actual or potential new social partners. However, some promising research confirms the importance of the issue as the conditions and roles of new partnerships around VET. Further field work is needed to carry out to control the relevance and the goodness of my hypotheses. Regarding the survey, I am looking for the opportunity to repeat the survey on a larger sample of VET experts, focusing on active VET teachers of the country. Another way can be to apply the findings of the Australian research on SME-s as potential social partners and study this topic under the conditions of my country.

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Session 9

Policy Transfer and Policy Learning in Europe and Beyond

Europeanization in the VET Policy as the Process of Shaping Educational Space¹

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Abstract: EU represents the transforming education space, where boundaries between national and supranational in education governance are becoming blurred. EU has become important actor of educational governance and an important arena for policy learning and transfer. In the paper I am looking how the process of shaping the educational space is manifesting itself in the process of Europeanization of VET in the case of Estonia. In Estonia, the process was followed by the growth of executive VET institutions and has developed from horizontal and rather uncritical policy transfer to the more active learning from EU, although conformism is still observable in the cases of introducing the standardizing policy tools.

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1 Introduction

Throughout the course of the globalization, when the flows of globally travelling ideas and policies in education are intensifying, the (symbolic) power of supranational agencies (e.g OECD; EU), supported by governance of comparative data sets (e.g PISA; TALIS; PIAAC), is growing in the field of education.

Over the last century the education sector that has been mainly based on the territorially bounded national education system, is transforming into the educational space (Seddon, 2014) which can be considered as “globally networked lifelong learning order” (Field, 2006 in Seddon, 2014:10). Two processes are embodied into this remaking (Seddon, 2014) or redevelopment process: first is a shifting social logic, that places learning, instead of teaching, at the centre of educational affairs and therefore expanding the education space to “learning sites” other than schools. Second are the changes in the governance of education. National states have ceded some of their traditional responsibilities in the education sector to inter/supranational agencies, that in turn, is a manifestation of the broader trend – a shift from government to governance (Seddon, 2014, p.14).

The European Union (EU) represents this kind of educational space, where the boundaries between national and supranational in educational governance are becoming more blurred. The discourse of the common education space is explicitly articulated in the “after Lisbon” strategic documents and education policy goals. EU has become important actor in the sphere of educational governance and an important arena for policy learning and transfer (e.g. Bulmer et al., 2007, Toots and Kalev, 2015).

Throughout this paper, I would like to contribute to the understanding, how shaping of the educational space can occur in vocational education and training (VET). More specifically, I am looking at how the shaping of the educational space is manifesting itself in the process of Europeanization of

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VET in the case of Estonia. The paper departs from the concept of Europeanization and looks at the policy transfer and learning in EU. I try to find, how the domestic institutional dynamics has been related to the goals and principles of the Copenhagen process. Particular attention is turned to the emergence and expanding of the executive governance institutions/agencies, which are doing “boundary work” (Seddon et al., 2007) or in other words, mediating flows of information and resources between domestic and EU actors. I also analyse the domestic policy documents, foremost Action Plans (AP) to identify the “hotspots of change” where national and EU education relations are intersecting (Seddon et al, 2013, p.4, Seddon, 2014, p.11) and thus, are shaping the educational space and governance pattern.

2 The Europeanization of VET Policy and the Changing Educational Space

Europeanization traditionally has been understood as a convergence process, leading to greater similarity of national policies as a result of the adoption of EU policy goals and instruments (Bulmer et al., 2007).

EU has launched the Open Method of Coordination (OMC), that officially launched at the 2000 Lisbon Summit. OMC represents the learning-based policy model (Toots and Loogma, 2015) meaning, that activity of the domestic policy actors/“learners” is central and therefore the process of policy transfer and learning and the mediating mechanisms, that are applied (Grootings, 2009) become the more important object of analysis (Bulmer et al., 2007; Toots, 2009).

In this paper, Europeanization is understood as the process of how member states adopt EU rules and implement EU policy. Or, in other words, the process where domestic policy actors’ utilize objectives and principles adopted at the European level in national policy making (Toots and Kalev, 2015). In this process, the development of institutions plays a central role and the process of institutional changes can serve here as the operational dimension and indicator (Bulmer et al., 2007).

The educational space has been treated as an active force rather than a container of education policies, involving the socio-cultural and historical dimensions, as well as activity of actors, doing “boundary work” (Seddon, Ozga and Levn, 2013; Seddon, 2014, p.12). From the perspective of shaping educational space, two aspects of Europeanization should be highlighted: standardization, that can be considered as central mechanism, creating the common educational space and the role of institutions, which can impact on the interaction patterns of actors and the resultant pattern of governance (Bulmer et al., 2007, p.7).

3 VET Reform in Estonia

After the regaining of independence in 1991 the Soviet VET system collapsed. At the same time local VET actors lacked all resources – appropriate levels of expertise, finance and time to build up the new VET system in such circumstances, when all other societal systems were simultaneously rapidly changing. (Loogma, 2004; Toots and Loogma, 2015). In early 1990s, there wasn’t even an institution at the state level that was responsible for the governance of the VET (Neudorf et al., 1997). Emerging social partners’ organisations were too weak to take any responsibility for VET (Loogma, 2004). Therefore, the VET reform in transition countries was led mainly by external donors and designed by international experts (Grootings, 2009: 272).

The impact of the EU in VET was quite recognizable even before the local actors were able to engage the reform initiative. The Foundation “VET Reform” was established and National Observatory was founded by ETF - an EU agency - in 1996. (Neudorf et al., 1997). In VET reform, different stages can be identified, emphasising the milestones of changes, that were related to the impact of EU VET policy.

1990 - 1996/97: a period of liberal adjustment of schools to the upheaval encountered within both the economy & labour market. During this period, state intervention was minimal and social partners (employers, unions) were too weak to initiate and support reforms in VET (Loogma, 2004; Loogma, 2010). Since the mid-90s the EU Phare programs for supporting reforms and negotiations between social partners have been in operation. In 1995, the first legislative act regulating VET

schools activity was compiled. During a very short period of time the VET system in Estonia developed from a highly centralized “distorted dual” system under Soviet rule, to a school-based system.

1997-2000: building up the legislative framework for VET. In 1998, the compiling of the National Strategic document - the Concept of Vocational Education - symbolized the beginning of national reform of VET. An important milestone in the process was the adoption of the Professional Act in 2000, which served as a legal basis for the implementation of the national qualification system. Generally, the horizontal learning and best practices’ adoption from other (rather random) systems in the beginning of 1990s was dominant. VET policy making become more coordinated in the second half of 1990s.

2001- 2004 (pre-accession period): Establishment of the Estonian Qualification Authority (SA Kutsekoda) and National Qualification System. This stage of VET reforms marked the beginning of “standardization era” in VET. From 2001 the VET reform process became coordinated and was governed by the strategic Action Plans (AP) for VET, composed for 4 or 5-year periods.

2005- 2009: Establishment of national curricula in VET. Also the process started in 2004/05, the 44 national curricula in different domains of study had been created and legislated by 2009. The introduction of the Learning Outcome (LO) based approach in VET curricula development started in 2009 and was almost completed by 2013.

For VET, the EU strategy toward a uniform, transparent vocational education space, set by the Copenhagen Declaration provided the impetus for intense Europeanization of Estonian VET policy. While in the first VET AP for 2001-2004 there were few references to EU guidelines, the next one (2005-2009) was explicitly based on the principles presented in the Copenhagen Declaration (MER, 2005, Toots & Loogma, 2015). Besides the emphasis on the development of the standardizing policy tools, a shift occurred to an emphasis on greater social responsibility, which assumes the inclusion of disadvantaged groups (e.g. learners without basic education or with special needs) in VET. (ibid).

4 The Emergence and Strengthen of the Executive Institutions in VET Governance

Even before the Copenhagen process started, the establishment of the Agency “Vocational Education Reform Foundation” and the National Observatory of Vocational Education and the Labour Market by European Training Foundation (ETF) in 1996 denoted the beginning of the Europeanization of VET. Although the main responsibility of National Observatories was the steering of VET reform, horizontal learning from other VET systems and from EU took place as well. In 2003 the Vocational Education Reform Foundation was reorganized into the Foundation Innove, whose responsibility was related to steering the developments in VET and labour market. From 2004, when Estonia become the EU member, Innove is coordinating the EU structural Funds’ (ESF) assistance. Innove has become one of the most important institutions responsible for the cooperation and exchange of information between EU and domestic VET actors. While the Foundation started with 5 staff members, today Innove employs roughly 200.

Another institution, the Foundation Estonian Qualification Authority (EQA), was established in 2001. The EQA is responsible for the development of the national qualification system and beside, EQA is responsible for the implementation of standardizing policy tools of the EU, like Europass and the European Qualifications Framework and performs the role of a national information and coordination centre. Like Innove, EQA has coordinated several ESF programmes and projects, which have supported the development of NQF and implementation of EQF.

5 Discussion

It has been argued that Estonia, like many other new member states and post-socialist countries, has been more receptive to the EU education policy goals and tools (Raudsepp, 2010), and tends to accept EU norms and policy goals less critically, without big discussion (Toots, Toots and Loogma, 2015) than older members, who already have a well-established institutional setup/structure for their VET governance. In the case of transition countries, which have undergone systemic regime change, at least two factors can contribute to this kind of conformist orientation. VET reform largely coincided with a period of radical change for the European VET framework (Grootings, 2009). In a way,

Estonia “entered” into the Copenhagen process in time, where there was no established institutional setup for VET in place (a contrast to the situation in old member states). This can be seen as a reason, at least partly, as to why “Estonia has been eagerly adopting the pan-European instruments for VET and Lifelong learning” (Raudsepp, 2010: 4). Secondly, the general liberalization and marketization tendencies in education make a good fit of the Lisbon values with the Estonian national goals of education (Toots, 2009).

The process of Europeanization in Estonian VET has emerged from the random interventions via first foreign aid packages after the regaining independence in 1991 and has developed via the Copenhagen process into the multilevel governance system of VET, where the EU and domestic policies are interweaved and EU guidelines, policy instruments and tools play a crucial role in the domestic government of VET (Toots and Loogma, 2015). In the of Europeanization process three stages can be identified: 1) The horizontal lesson drawing from random best practices in the first period of chaos and liberal adjustment of VET system to changing context. The period is characterized by the uncritical transfer of EU policy goals and tools/instruments into the domestic reform policies 2) Discursive Europeanization - the EU’s influence on the content and style of the policy documents is called discursive Europeanization (Radaelli, 2008, in Toots and Loogma, 2015), – manifested mainly by the Action Plans of VET and supported by the ESF projects 3) The diminishing of the uncritical approach; even the goals and principles have transferred from the EU, the policy tools and instruments have developed, considering the national/local needs and challenges. (Toots and Loogma, 2015). However, the standardizing policy tools and activities been adapted almost without discussion, regardless of whether and how they may contribute to the quality of VET (in terms of the labour market relevance, lifelong learning capacity building of vocational students etc.)

The Europeanization in Estonia has been accompanied with the strengthening of the executive agencies. The executive VET institutions, mediating between EU and domestic policy actors, and executing the reform policies, including those, transferred from EU, play a significant role of “boundary work” in integrating Estonian VET into the European common framework

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Tensions and Interrelations between the Modern and the Traditional Sector of TVET - Some Insights from the Construction Industry in Egypt

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Abstract: Lead by an approach of work culture as an heuristic toolkit to analyse the interrelation between the TVET system and socio-culturally environment in which it is embedded, the insights of modern elements of Egyptian TVET were shown and the connection with the traditional sector are explain. The rules and regulation of the traditional sector of TVET specifically in the construction industry in Egypt will explain on the background of some theoretical remarks and of the German economic history. Methodological the article bases on group debates with foremen of a large construction enterprise in Egypt, on focus group discussion with responsible personal for in-company-training of modern private companies and with document analyses of scientific papers. Moreover, with numerous observation on construction site and in other different fields of TVET activities.

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1 Introduction

The insights into the Egyptian institutional order of TVET during the WEB-TT project for three years (2011-2014) show a strong tension between the TVET regulations of the modern sector and the traditional ones.

During the work in the construction field and in other sectors of the modern industry in Egypt, some irritation occurs because of the dominance of traditional regulations in the modern sector.

We use the approach of work culture as a heuristic toolkit to analyse the interrelation between the TVET system and socio-culturally environment in which it is embedded. The deeper look go on the constitution of the collective actors, one of the six dimension of the work culture approach. We compare the constitution of collective actors with interrelations to the TVET system in Germany with Egypt.

The rules and regulation of the traditional sector of TVET specifically in the construction industry will explain. Before we offer some theoretical remarks on the general interaction between the modern and the traditional part of societies specifically on the background in German economic history.

2 Theoretical background

2.1 General understanding of culture

In general, the main theoretical assumption was an understanding that the workforce qualification regulations exist in close interrelations with the societal environments of a given society. This societal environment of qualification is understandable with an approach of culture as an expression of dynamic results of actor's activities in contested social fields (Wolf, 2010b). In contrast to common culturalist reductions, this approach understands culture as a dynamic social process, a process in which social actors in a highly competitive social arena of negotiation compete in order to secure a position in society (Bourdieu, 2004). To guarantee a capacity of social governance, social actors are

required to interpret and process external influences, both material and cultural, individual and collective. If necessary, external influences are newly formulated, provided that there is progress of social processes. Here, social actors create new systems of meaning, a new symbolic order or also an innovative individual style. A number of scholars have described this mechanism of re-formulating cultural meanings (Çaglar, 1995; Hobsbawm and Ranger, 2003; Auslander, 2008).

Based on this reference point the concept of work culture clarify the interrelations between the VET system in a society and the socio-cultural environment in which it is embedded. This general basis of the work culture approach is to some extent similar to the approach of comparative political economy. "Changes in the domain of skill formation have consequences for the development of adjacent spheres of the political economy, such as industrial relations, collective wage bargaining, the welfare state, and labor markets and vice versa." (Busemeyer and Trampusch, 2011, p. 3f).

The main difference is the range of the two approaches of interrelation of VET resp. skill formation systems. While the collective skill formation covers the whole system under a clear political perspective, the work culture approach looks deeper on the rules, regulations and meanings and their interlinkages with a given VET system in a society. The practical impact to understand a foreign VET system and its use as a toolkit to facilitate the understanding of an unknown VET system is more important for the work culture approach.

2.2 The work culture approach

The concept of work culture brings light in the symbolic structures of order and the system of cultural meaning of a society at the interchange with vocational education and training. Starting from a cursory remark from Greinert on important features of work culture of German vocational education, the next section will break down and complement the essential interrelations between economic activities and vocational education (Greinert, 2007, pp. 161ff.). As at other places already mentioned (Barabasch and Wolf, 2011; Wolf, 2009; Wolf, 2010a), vocational education or training interrelates with other social areas of society. It is important in terms of social education and in the production of goods and services. For the purpose of this paper, we will focus here on the latter and the economy's impact on cultural mechanisms and the interrelationship with vocational education (Georg, 1997; Greinert, 2004). We can discern six different dimension of work culture with different vice-versa influences of VET systems. These dimensions facilitate the better understanding of foreign VET systems by simplifying the high complex observed reality. We are better able to orient the focus of observing-point. The here given contribution will focus on the dimension of the constitution of the social actors. The findings and insights of the Egyptian VET systems on the other dimensions have more detailed described in Wolf (2013, pp.134ff.) and Wolf (2014, pp.36ff). Here the focal point is the dimension of the constitution of the social actors.

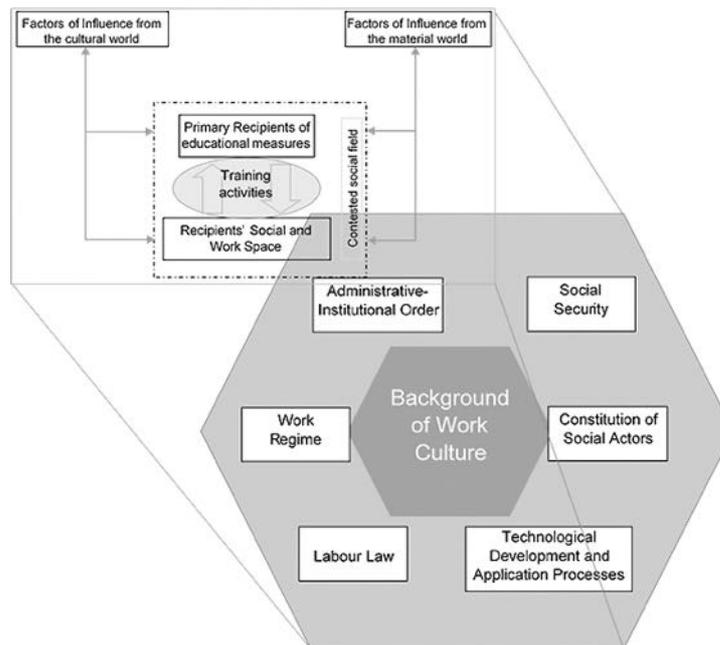


Figure 1: The concept of work culture

2.3 The constitution of social actors

But the question of central social actors who play a role in shaping relations of production and the VET systems needs to be clarified. It is important to distinguish between collective actors and individual social actors. Alongside the collective actors, it is important to observe individual actors, their worlds, cultural systems of meaning, as well as their imaginations of a good life (Wolf, 2009). The individual subject is interrelated to vocational education by his/her socialisation, too (Lempert, 2006). The training and succeeding professional activities have a powerful effect on the constitution of the self and identity (Krappmann, 1983; Leithäuser, 1986; Körzel, 1987; Deetz, 2000; Schönberger and Springer, 2003). Without going into detail, it is fair to say that, for a long time, the German dual apprenticeship model, with its gender-specific, male-dominated work biography, represented the norm (Hausen, 1976; Baethge, 2001; Krüger, 2003) and shape insofar the vocational education and training system understanding of individual actor.

2.3.1 The collective actors in Germany with influence of TVET system

From a German perspective, the powerful trade unions fall under the category of central collective actors and, historically, have played a primary role in shaping vocational education. Beside of this German look, the collective actors appear in a variety of shapes and forms in other countries, for example, in the state administration of the education ministry and actor constellations of program models for vocational schooling. Very often, we can find actors from the traditional apprenticeship system in sub-Saharan Africa (Greinert, 1999; Nübler, Hofmann and Greiner, 2009; Adam and Boehm, 1994). Identifying collective actors for a comparative analysis and clarifying their influence on shaping vocational education and training can provide inferences as to the outlook of vocational policy transfer. From the perspective of the German vocational training and its order the role of the social partners, trade unions and employers associations for the shaping and the development of the German TVET and the vocations is important and well known. Also, the basis of the German dual system of vocational training is the essential role of the self-organisational structures of the German economy. It means the strong organisational role of the formal and legal founded economical actors (so called "verfasste Wirtschaft"), especially of the chambers and the guilds, but also of the collective actors of workers associations, e.g. the unions or the employees' associations in the guilds. This unique feature in this differentiated form doesn't exist in other countries.

2.3.2 The collective actors in Egypt

In Egypt, the idea of a social partnership does not exist. There are in addition to various groupings of employers' associations, private sector actors but no constitutional grounded as in Germany. The legal chambers in Egypt are administered by the state and not driven by the idea of self-regulating economic actors as in Germany. The relation with the vocational education and training of the formal part of the Egyptian economy remains very weak. Only the Egyptian Federation of Investors' Association (EFIA) is explicitly related with vocational training at the company level, support for long time by German Mubarak-Kohl-Initiative (Schneider, 2004; Schippers, 2008). A formalised involvement of trade or labour unions do not exist. The interests of the workers are not taken into account in the development of the formal part of qualifying for work and income ("Erwerbsqualifizierung"). They have only the chance to influence the vocational education and training regulations by informal activities e.g. market behaviour as for example privilege workers from the traditional apprenticeship scheme instead of more formally qualified workers from public training programmes (Assaad, 1993, p. 933). One result of the field observation and field talks in Egypt is the manifest lack of any influences of formal collective actors from the workers side in the regulations of vocational education and training. But much higher are the influences from informal collective actors and from the rules and regulations of the informal resp. traditional sector of the economy, so the results of the field observation in the construction industry in Egypt, but presumably in other sectors of the economy, too.

3 The relation between the traditional and the modern sector of a society in general

Very often, the traditional sector of a society is signalled as informal sector or informal economy, but simultaneously with this naming, prejudice and discrimination from the side of modern society and the state agencies occur. Nevertheless, a clear theoretical based concept of the informal sector does not exist and we will follow the definition of Elwert et al. They express that it means "a social stratum of the unsecured ("Schicht der Ungesicherten") attempts, by utilisation of economic niches, through mobility in job search and the combination of different sources of production and income to secure their survival and their reproduction" (Evers, 1987, p.357 from Elwert et al., 1983; transl. StW).

3.1 Theoretical approximation to the intertwining between modern and traditional

Under a deeper theoretical point of view of economic activities, we find the oeuvre of K. Polanyi (1944) some categories that will help to a better understanding what means economic action. He distinguishes (1) reciprocity, (2) redistribution, (3) subsistence and (4) market exchange as the main categories to analyse economic activities in societies (Polanyi, 1978, pp.71ff). However, the general assumption in depth of Polanyi expresses that every economic activities will be socially embedded, no economic action can cut the liaison to the social life otherwise it will be a deformation and at an end dis-embedded with all constraints and conflicts we will find in the modern capitalistic practices (Kocka, 2014).

With the differentiation of Fernand Braudel in three sectors of economic, based on extensive historic investigations and illustrative documentation we can better understand how traditional and modern sectors intertwine. The market economy put down the roots in the ground of the society the sector of non-economy but without dominate it. The contradiction of the market economic, the rule of the right of the mighty one and the cleverness of the individual economic advantage without limit, is the sector of the capitalism in a historic perspective (Braudel, 1986, cited by Evers 1987, p.355). Also in modern sectors of industrialised society, we will find in the importance of trust and confidence for economic action the regulations noted above beyond capitalistic rules of survival of the strongest with its cost-value-attitude.

3.2 German experiences

Nevertheless, from our German history the intertwining between traditional, to some extent informal and the modern parts of the economy is well known from our industrial history but not so often articulated in the German society's mainstream meanings. The base of the German industrial production

in the 19th century was the professional qualification of the traditional craft sector (Radkau, 2008; Baethge, 2004, p.14). During the industrial take-off, the recruitment of the workers for the companies based on the young unskilled workers from the rural areas in the eastern parts of Germany and the mobilised youth of the lower class (Conze and Engelhardt, 1979). Taking reference on the book of Lutz, 1984 we can state on top of that before noted historical evidence the economic dualism between the modern and the traditional sector as a structural continuity of the economic development in Europe till the mid of the 20th century (Lutz, 1984). In difference to the developing theories of the 20th century with the formulated contradiction between modern and traditional sectors and the necessity to destroy the traditional economy, he explains clearly the positive effects of the economic dualism for both sides of the economy and the risks of economic instability following the disappearance of the traditional sector in the post-industrial era. The interchanges are the following: (1) the workers recruitment of the modern sectors based on the labour force of the traditional sector with stabilising point that in phase of unemployment the workers can go back to the traditional areas of work and guarantee the survival. (2) The paid labourers got their goods and services mostly from the traditional economy in their neighbourhood. (3) The traditional sector was coupled on the modern sector by getting the goods from the modern industry to invest for benefit the prospect of economic development (Lutz, 1984, p.110). Under the condition of external expansion until the first two decades of 20th century, these relations produce a spiral of prosperity but under the conditions of the external economic crisis of industrialised countries from the beginning 30th of last century the spiral move upwards to a depression dynamics. Only with the beginning 50th, the welfare policy produced the conditions to dissolve the traditional sector and evoked the large mobilisation of industrial societies, but with the risks of systemic destabilisation without the opportunity of equilibria with traditional sectors to cope with deformations.

3.3 Egyptian interrelations between the two sectors

In Egypt we can find the here shortly described dualistic society with clear and strong influences of the traditional sector to the modern, also in the rules and regulations of the training activities.

The Egyptian workers on building sites, so the observations on the sites of the Egyptian project partner in the R&D-project WEB-TT, are recruited mainly from the informal sector of the Egyptian economy. 8 million people working in Egypt in the construction industry, mainly as a day labourer hired without social security. The workers are recruited from stable communities, from craft communities of the countryside or of city districts in Cairo. The inner cohesion of the communities is strong and socially defined. Semsek (1986) observed three mechanism of the inner regulations of the traditional districts: (1) A high complex network of reciprocity and exchanges of social, symbolic values lead the public activities in the districts. (2) The private activities of the household are ruled by female orders and strictly segregated from the public sphere. (3) Important persons, the great and virtue representative of the districts secures the order and organises the mediations and agreements in case of conflicts. Under a perspective of crafts, we can find similarities e.g. the shaykh in the traditional craft work (Dobrowolska, 2005). In Egypt there were over very long historical times organisations of craftsmen, and during the Ottoman periods it existed a flourishing guild system (Baer, 1964; Ghazaleh, 1999). At current time in Egypt, formally no longer guilds exist, but as a social form with its long tradition continues and has a significant impact on training and work activities. The construction workers have an own social structure in the so-called informal economy and distinguish of both the workers who have been trained in public programs, as well as of casual workers who waits to intersections on work offers (Assaad 1993, p.929f.). These mechanism of established and outsiders (Elias and Scotson, 2002) as well as other cohesion reproducing manners e.g. specific coffee shops as meeting points of these traditional workers produce a social stability and continue the rules and regulations.

Indeed the recruitment is organised in a specific manner. A virtue representative of the community, the Reyes, comes to the modern company to offer the labour of his "clients". He arranges the workers, manages the funds and enforces the respect to the general accepted rules and negotiate with the foremen of modern companies to get hired his "client". The decision of hiring was done by the companies foremen who decides based on practical prove work and its quality. The foremen know

what quality means by understanding the Egyptian code of practice. They know what good work is. The influence on training activities of the traditional sector is immense. First, most of the qualified workers on construction side coming from traditional apprenticeship. "(Traditional, (note St. W.) apprenticeships continue to serve more than just a training function. Besides learning the necessary skills, the apprentice is socialized into becoming a member of fraternity of craftsmen by learning the values and behavioral patterns that make him an insider." (Assaad, 1993, p.932). Following to some casual observations in different modern sectors of Egyptian economy outside the construction field, the daily training activities on job familiarisation in the companies are given to the rule of tradition, experiences and personality. Virtue workers often dressed with a Gallabiyah, the traditional men's dress in Egypt, and/or with a habit of respect and high symbolic acceptance do the training-on-the-job based on their experiences from the traditional work system. A formalistic and systematic way as we find in Germany's training activities doesn't exist to any extent in Egyptian companies, and to our surprise neither in the traditional nor in the modern ones.

4 Conclusion and final remarks

Essentially, the in-company qualification procedures based on the traditional vocational training and is designed to promote a practice of appropriate conduct and of rules and roles of the work, and less on professional qualification. Egypt grounded on an old, complex traditional society, despite of some modernity with strong social influences of traditional sector as already mentioned above. In here, the maintenance of beneficiary social relation and the care of social networks with the demonstration of loyalty to the influential representative is important. These social networks are on one hand the framework for recognition and the social positioning of the own person and on the other hand they are the traditional basis for social advancement by social relations but also the conditions of emotional subjection. This tradition with its principle of emotional negotiation of an own role stays in concurrence to the shaping of a vocational training system based on formalised and codified qualification requirements, with written and accepted training plans and agreed curricula without any space for negotiations.

"If a young person (in the Egyptian dual system) at a machine work does not feel comfortable, then I take him or her away and put him to another place, where he can learn better. It is supposed to be a good worker. All the qualifications he then cannot get out to this machine, he will learn in any other way," said a staff person responsible for vocational training in a modern company in the Egyptian dual system.

The promotion of a closer dovetailing of modern forms of employment training with the traditional forms of craft teaching is an important project for the further development of Egypt's vocational training system. Specifically if you let your eyes wander in the history of the German vocational training, their strength derived, among other things from the integration of tradition and modernity.

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Session 10

Reviewing Activity Theory, Developmental Work Research and Change Laboratory Methodology – Experiences, Critique and Lessons Learned

Reviewing Activity Theory, Developmental Work Research and Change Laboratory Methodology – Experiences, Critique and Lessons Learned

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Abstract: This paper presents an outline for reviewing Activity Theory, Developmental Work Research and Change Laboratory methodology. The contribution from the Learning Layers project provides describes a participative innovation process (with *digital media and mobile technologies in workplace learning*) and the changing role of the practitioners involved. Here several issues on Developmental Work Research are raised. The Finnish cases of using *Change Laboratory in vocational education colleges* (education of nurses) give insights into participative curriculum development (with emphasis on intercultural education). The subsequent explorations on *training models of German companies in the United States* are concluded by using the Theory of Expansive Learning as an interpretative framework. The final contribution draws attention to the theoretical potentials of Activity Theory and on challenges and contradictions in different cases of Developmental Work Research. Altogether the contributors draw conclusions for developing research approaches that build upon the above-mentioned theoretical and methodological concepts.

1 Introduction

This paper provides an overview on the conceptual backgrounds and research contexts for reviewing Activity Theory, Developmental Work Research and Change Laboratory Methodology. This reviewing will take place in a research workshop hosted by the EU-funded Learning Layers project. The challenge to review the theoretical, research strategic and methodological contributions based on Activity Theory emerged in the Learning Layers project during its theoretical consolidation phase (“Theory camp”) and is taken up in the transition from the current pilot phase towards exploitation of the results and scaling up of innovations. From this perspective the Learning Layers project has invited guest researchers with different theoretical and methodological interests in Activity Theory (and related research approaches) in a joint workshop.

The workshop will start with a brief examination of the issues raised by the Learning Layers project and then proceed to discussion on the guest researcher contributions. In this way the workshop will explore the theoretical core structures of Activity Theory and their significance for new intervention research projects as well as different empirical cases for working with Activity Theory (and Change Laboratory Methodology). A special guest contribution will make use of the theory of Expansive Learning as an interpretative framework for analysing cross-cultural innovation transfer in vocational education and training (or training of workforce in enterprises).

2 Conceptual background and R&D challenges in the Learning Layers project

The EU-project Learning Layers (LL) is a transnational Research, Technology & Development (RTD) project that is being funded during the years 2012-2016. It has the task to promote innovations in workplace-based learning by introducing digital media, web tools and mobile technologies. The pilot areas are building & construction and healthcare. In both pilot domains the project tries to overcome obstacles to using mobile technologies, web resources and digital media as support for *learning at workplace* and/or *learning and knowledge sharing in organisational contexts*.

The project consortium brings together different fields of expertise (including different aspects of informatics, software development, design of media, domain-specific expertise and pedagogic expertise in workplace learning. In the pilot activities the project relies heavily on application partners, their professional networks and affiliated SME clusters. So far in the construction sector pilot the main emphasis has been given on joint development of a mobile framework “Learning Toolbox” for managing digital media, web resources and customised apps to support learning in working contexts.

During this developmental phase the LL project has taken special *capacity building measures* in the application partner organisation Bau-ABC (intermediate industry-based training centre). With workshops and Multimedia Training program the project has promoted trainers’ development into *change agents* who can support implementation of the Learning Toolbox throughout the range of apprentice training programs (and also in the continuing training) in Bau-ABC.

The aim of the project is to scale up of innovations (that have been brought forward in local and regional pilots) with the help of networks and clusters. From this perspective the application partner organisations - like Bau-ABC - are challenged to become effective multipliers. In a similar way the R&D partners are challenged to develop conceptual and methodological tools support wider dissemination and exploitation processes.

3 The importance of Activity Theory, Developmental Work Research and Change Laboratory for the Learning Layers project

In the light of the above the Learning Layers (LL) project has had a special interest to examine the contributions of the Cultural-Historical Activity Theory (CHAT), latterly known as Activity Theory (AT), the corresponding research strategy ‘Developmental Work Research’ and the specific formative intervention research methodology ‘Change Laboratory’ (see Virkkunen and Newnham, 2013). These approaches have been mainly developed by research groups led by Yrjö Engeström, University of Helsinki (see Engeström, 2001; Engeström and Sannino 2010). In an earlier phase of the project some reference articles from these research groups (and from affiliated researchers) have been examined during the preparation of the “Theory camp” activity of the LL project (Spring, 2014). At present, when the project is working with an intensive pilot phase and at the same time preparing the grounds for exploitation activities it is essential to identify points of interest for theoretical, R&D strategic and methodological exchanges:

- 1) **Core structures of Activity Theory - Analyses of working contexts as *activity systems* or *networks of activity systems*:** For the LL project it is important that the AT gives central attention to work processes (and occupational) working contexts and conceptualises them in terms of activity systems. Here, the approach of AT makes it possible to explore working interfaces, crossing the boundaries and qualitative changes in working contexts.

- 2) **Theory of Expansive Learning - Analyses of occupational growth, collective learning and transformations at organisational level:** For the LL project it is important to pay attention to the conceptual interpretation of transformations in working and learning process (as it occurs when participants in pilot projects turn into multipliers of innovations). Furthermore, it is of interest to explore learning processes in teams and organisational settings (as has been conceptualised by the AT as “Theory of Expansive Learning”).
- 3) **Developmental Work Research - Exploring co-participative roles of researchers in formative *intervention research* projects:** For the LL project it has been necessary to develop a flexible and agile intervention research strategy (that builds upon multiple contributions from an interdisciplinary RTD team and on multiple interactions with application partners). In this respect it is interesting to discuss on criteria for involvement, interventions and reflection with other similar approaches.
- 4) **Change Laboratory Methodology - Sharing knowledge on a standard procedure for engaging practitioner’ in participative innovation process:** One of the key features in the intervention research strategy of AT has been the use of Change Laboratory (initially called as ‘Boundary Crossing Laboratory’ or alternatively as ‘Cultural Laboratory’). For the LL project the involvement of practitioners has changed during different phases of the project. Yet, in the exploitation activities and in follow-up phases it might be possible to use a more ‘standardised’ process.

4 The inputs to the workshop and the mode of work

In the light of the above the workshop will be opened by the introductory presentation of **Pekka Kämäräinen** (University of Bremen): *Learning Lessons from Activity Theory, Intervention research and Change Laboratory Processes - Issues from the perspective of the Learning Layers project*. His input provides an updated overview on the work of the Learning Layers project, on the current pilot activities and on the exploitation plans based on the pilots in construction sector. He will also address some key issues for exchanges on the Activity Theory and related research approaches.

This introduction will be followed by two input papers that focus on using Activity Theory in an intervention research project or as an interpretative framework for reconstructing research findings.

The presentation of **Johanna Lasonen** (University of South Florida/University of Jyväskylä) and **Marianne Teräs** (University of Helsinki): *Implementing Change Laboratory in the Vocational Education of Healthcare Sector - Insights into the Process, Context and Cultural Environment* gives insights into two processes of Change Laboratory in the same college. This presentation provides insights into different preconditions for engaging vocational teachers (and learners) as drivers of the innovation and taking on board the results of the Change Laboratory process. It shows how teachers and learners have supported the work in the Change Laboratory by producing their own notes or audios and videos to document episodes or impressions with relevance to language learning, vocational learning and intercultural encounters. She also emphasises the need to find a balance between *conceptual tools of researchers* and *the practice-related tools and instruments of teachers*. In this balancing process the intervention researchers had to negotiate, to what extent the conceptual tools could be used as common tools and to what extent they should be left to secondary analyses. From the perspective of the Learning Layers project it is interesting to discuss, to what extent such complex RTD projects and their follow-up projects can make use of adapted ‘Change Laboratory’ processes or of lessons learned with them.

The presentation of **Michael Gessler**, **Larissa Freund** and **Susanne Kopatz** (University of Bremen): *Activity Theory and the Dual Vocational Education and Training System in the USA and in China: Imitation or Innovation?* is based on an a project that studies training policies of German companies outside Europe. The main issue is, whether the companies are *inclined to comply with the dual system of apprenticeship* or to what extent they need to *find alternative ways for shaping their*

training policies and arrangements. When exploring the making of new training policies and putting them into practice the presenter makes use of Engeström's theory of expansive learning as an interpretative framework. From the perspective of the Learning Layers project it is interesting to discuss, to what extent can some elements of Activity Theory - such as the theory of Expansive Learning - be used as interpretative frameworks for reconstructing research findings or re-conceptualising dynamic innovation processes.

After these contributions the concluding presentation of Ines Langemeyer (Karlsruhe Institute for Technology, KIT) *Activity Theory and Developmental Work Research – Reflections on Conceptual Grounds and Methodological Issues* provides an overview on the potentials and limits of Activity Theory. In particular she explores some critical issues regarding the treatment of 'activity systems', 'contradictions' and 'empowerment' in related studies. Also, she discusses the claims of Developmental Work Research as means to enable the practitioners to become owners of innovations. From the perspective of the Learning Layers project it is interesting to discuss, how the theoretical and methodological critique can be taken into account in further development of such transformative and co-developmental R&D approaches.

In the discussion the participants work towards conclusions for future research initiatives that draw upon Activity Theory, related intervention research and participative R&D methodologies.

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Session 11

Work Based Learning, Learning in Work Processes and in SME's from a Norwegian, Dutch and German Perspective

Contributions to Learning at the Workplace: A Perspective of Secondary Vocational Trainees

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Abstract: Learning in apprenticeships is a significant element of curricula in secondary vocational education. Recent studies have stressed that the learning outcomes of these apprenticeships are not undisputable. The research questions in this explorative study are: 1) what learning outcomes do students report themselves? 2) what contributes to learning at the workplace according to the apprentices? 3) how do students frame learning at the workplace? 14 face-to-face interviews with first-year students in secondary vocational education show these students frame workplace learning in terms of personal development. From this perspective, the apprenticeships are considered valuable and instructive. These findings challenge the outcomes of previous studies that questioned the contributions of apprenticeships in terms of learning. Students certainly benefit from workplace learning and they value what they learn in the apprenticeships. In addition, they regard self-regulation skills worthy and emphasize the importance of it.

1 Introduction

Vocational expertise consists of three components: theoretical knowledge, practical knowledge and self-regulative knowledge (Tynjälä, 2008). Workplace learning has a substantial share in contemporary vocational education. Workplace studies report ambiguous results for the effectiveness of the workplace as a learning environment; researchers disagree on the learning potential of the workplace (Billett, 2004; Nieuwenhuis and van Woerkom, 2007). The aim of this explorative study is to identify how Secondary Vocational Education (SVE) students frame their apprenticeships in terms of learning and what they see as factors contributing to their learning. This is a valuable contribution to the debate on workplace learning, because (1) we know that students' perceptions of the learning environment affect their learning behaviour (Entwistle, 1991) although these perceptions have not been taken centre stage before in workplace learning studies, and (2) recent studies have questioned the effectiveness of Dutch vocational education apprenticeships in terms of learning (e.g. Jossberger, 2011; van der Klink and Streumer, 2012; Poortman, 2007; Wagenaar, 2008). In this paper we will argue that rationales on workplace learning should be taken into account for understanding and valuing learning at the workplace since different frames take different learning outcomes as a starting point (Nieuwenhuis and van Woerkom, 2007; 2008).

Two dominant frames can be discerned in the debate on learning in apprenticeships; 'apprenticeships as education' and 'apprenticeships as work' (e.g. Boud and Garrick, 1999; Nieuwenhuis and van Woerkom, 2007; 2008). These frames hold different logics and objectives. Table 1 presents an overview.

Table 1: Overview of Dichotomy Between Logic of Education and Logic of Work

	Logic of Education	Logic of Work
Tasks & responsibilities	Accomplishing workplace learning assignments	Contributing to production / work process
Criteria for success	Successful assignments & attainment of learning goals	Contribution to production process
Learning experiences	Competence development & personal development Deliberate practice Learning by reflection	Professional skills & expertise Learning by doing Learning as side-effect

Both logics frame “what is and is not knowledge, and what counts and doesn’t count as learning” (Boud and Garrick, 1999, p.7). What is effective learning from one logic may be considered ineffective in another (Nieuwenhuis and van Woerkom, 2007; 2008). For example, the objective of workplace learning might be either ‘production’ or ‘qualification’, dependent on the frame you adopt. However, workplace learning is often considered from a logic of education by researchers when assessing the learning outcomes of apprenticeships. Accordingly, learning outcomes are defined in terms of educational goals and its contribution towards qualification. This might result in overlooking other types of learning outcomes, or ignoring contributions of workplace learning in other domains (for example impacts on personal development). Moreover, this dominant educational frame might also explain why previous research shows that it remains ambiguous what students actually learn in their apprenticeships (Jossberger, 2011; Wagenaar, 2008).

We would like to examine what frames students use themselves, valuing learning in apprenticeships. Studies from primarily a student perspective are scarce. Including a student perspective could add a valuable contribution to the debate about the learning potential of the workplace. Particularly since van der Sluis, Reezigt and Borghans (2014) showed that VET-students hold other perceptions of VET programmes than other stakeholders, such as teachers, workplace mentors or policymakers. The following research questions will be answered: 1) what learning outcomes do students report themselves?; 2) what contributes to learning at the workplace according to the apprentices?; and 3) how do students frame learning at the workplace?

2 Method

Participants

The participants in this study enrolled in a course for Office Assistant, level 4 SVE¹ at a Dutch College for Secondary Vocational Education (SVE). Halfway their first year, they have an apprenticeship period of three months at an office. They work as trainees for two days a week, the other three days of the week they follow a program at school. A complete group was selected by means of convenience sampling (Punch, 2005). All 16 students were women between 17-23 years old. Since two students dropped out, 14 students were interviewed at the end of the apprenticeship period.

Materials

The in-depth interviews had a semi-structured character whereby the initial questions and the order of topics were pre-defined. Possible options to probe were formulated in advance to optimize depth, detail, vividness, nuance and richness of the data (Rubin & Rubin, 2005). Successively, the ‘tasks and responsibilities in the apprenticeship’, ‘learning experiences’, and ‘criteria for a successful apprenticeship’ were discussed with the interviewees. Because the interviewees were relatively young, only one researcher conducted the interview to reckon upon the possible imposing impact of being interviewed. All conversations were recorded digitally and lasted between 35 and 68 minutes.

¹ in Dutch , level 4, mbo

Procedure

The interviews were transcribed verbatim. The process of analysis was supported by ATLAS.ti (version 7.5.2). This approach consisted of three modes of analysis: an initial open coding mode, followed by cross-sectional and categorical indexing (Mason, 2004), and conclusively a theoretical comparison mode. The three analytical modes resulted in four final analytical domains and fifteen discerned categories, presented in Table 2.

Table 2: Frame of Analysis

Domains	Categories			
Learning outcomes	Defined competencies and tasks for the apprenticeship	Skills & competencies in the professional domain	Skills & competencies in the personal domain	Orientation on the profession
Contributions to learning in apprenticeship	Personal attitude towards learning	Support	Tasks to conduct	Work setting
Mentoring	Style of mentoring	Availability	Relationship with the mentor	Role model
Self-regulation	Meta-cognitively	Motivationally	Behaviourally	

3 Results²

In this section we present our findings. The first domain, ‘learning outcomes’, is related to our first research question (what learning outcomes do students report themselves?). The second domain, ‘contributions to learning’, is related to our second research question (what contributes to learning at the workplace according to the apprentices?). The third research question, how students frame learning in apprenticeships, will not be answered directly by one of the discerned analytical domains. The framing will be constituted out of the results on the four analytical domains. Table 3 presents an overview of the number of quotes in all discerned categories by the individual respondents.

² because of the limitations on the amount of text, only a brief summary of the results is reported here.

Table 3 Overview of the Number of Quotes in the Different Categories by the Individual Respondents

	Learning outcomes				Contributions to learning				Mentoring			Self-regulation			
	Defined competencies and tasks	Professional skills	Personal skills	Professional orientation	Personal attitude	Support	Tasks	Work setting	Style	Availability	Relation ship	Role model	Meta-cognitive	Motivational	Behavioral
r1	6	4	2	0	1	3	1	3	3	2	0	0	6	5	4
r2	4	4	1	0	2	2	1	3	3	1	3	0	4	4	4
r3	4	0	0	0	0	0	0	2	2	1	0	0	3	1	2
r4	7	3	0	0	1	3	0	2	2	1	3	2	4	2	2
r5	6	1	0	0	2	3	1	3	3	2	2	1	5	4	3
r6	4	0	0	0	0	0	1	0	1	1	1	0	4	2	3
r7	2	2	4	0	1	2	0	2	1	2	1	0	2	2	2
r8	6	3	0	1	3	0	1	4	3	2	1	1	5	3	3
r9	6	0	0	0	6	1	0	0	1	0	0	1	3	2	1
r10	4	2	3	0	3	0	1	1	2	2	1	0	3	2	3
r11	10	2	2	0	4	1	1	0	4	1	2	0	4	4	4
r12	6	1	1	1	1	0	0	2	3	3	1	1	3	2	3
r13	5	2	2	2	4	2	0	3	2	1	2	0	5	3	3
r14	8	2	3	0	3	1	0	3	2	1	1	0	4	2	2
Total	78	26	18	4	31	18	7	28	32	20	18	6	55	38	39

L earning outcomes
All respondents mentioned several curricular pre-defined attainment targets which they learned in their apprenticeships. In addition, respondents ($n = 11$) reported developments in the general professional domain, like coping with work pres-

sure, setting priorities, dealing with demanding clients, working independently, working accurately, and having a professional attitude. Learning experiences in the personal domain that were pointed out, comprise taking initiative, asking for help, saying no, setting limits, and being less insecure ($n = 8$). Three students explicitly mentioned having a better notion of the profession as learning output.

Contributions to learning

According to the students ($n = 12$), the personal attitude towards learning is very important (e.g. being motivated, being inquisitive, knowing what can be expected, daring to ask for clarification). Secondly, support at the workplace was an important condition for learning according to the apprentices ($n = 9$), such as showing example behaviour, having clear expectations and giving clear instructions, being open towards questions, giving trust. Thirdly, half of the interviewed students ($n = 7$) brought up different aspects considering the conduction of tasks that contribute to learning. They referred to the importance of a variety of tasks, the amount of tasks (not too many, but definitely not too few), and the importance of challenging assignments. A fourth sub category of ingredients that contribute to learning in apprenticeship related to the working environment ($n = 11$). Elements brought up in this sub category are: working together in a team, having friendly colleagues, getting the opportunity to develop yourself, receiving respect, and sensing to be part of the organisation.

Mentoring

Although mentoring was essential, students did not favour one particular style of mentoring. Moreover, the availability of the mentor was important for the students ($n = 13$). For the majority of the students ($n = 11$) the kind of relationship with their mentor was of considerable significance as well. They regarded it as helpful when they could go along with each other and shared personal tidbits. It was considered advantageous when the mentor was not much older so they would share the same interests. Finally, five apprentices saw their mentor as a role model.

Self-regulation

All 14 students reported many aspects of self-regulation in the meta-cognitive, the motivational, and the behavioural domain. Meta-cognitive elements that are reflected in the stories of the apprentices were a willingness to learn, formulating particular (learning) goals, deliberately facing challenges, knowing what they are good at, as well as knowing what they could still improve. Motivational aspects of self-regulation were reflected in students' enthusiasm to conduct particular tasks. This referred to tasks that were challenging, or tasks that expanded the professional scope of knowledge of the apprentices. Behavioural components mentioned were preparing in advance, asking for help, adjusting one's strategy to succeed in a task, coming up with an alternative approach when things do not work out as planned, guaranteeing monitor moments and deliberate practicing, what was still considered difficult.

4 Conclusion

The findings of our study add an alternative 'personal development' frame to the debate on workplace learning. This frame includes both a logic of education and a logic of work. It is clear to the students what the apprenticeship is about and what they have learnt. They are able to indicate, in their own terms, the conditions that foster their learning. Moreover, they express a willingness to learn and regard the apprenticeship as a valuable context to gain expertise and to develop themselves. The results of our study leads us to two optimistic conclusions. First, students certainly benefit from workplace learning and they value what they learn in the apprenticeships from a personal development frame. Second, students regard self-regulation skills worthy and even emphasize the importance of it. They consider their learning to a large extent conditional of the aptitude of self-regulation skills. This finding is promising and should be further explored. It suggests that interventions focused on self-regulation skills and learning orientations have potential to put students in a learning modus. Further research should shed a light on this.

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Work-Based Learning and Learning within Work Processes – Two Sides of the same Coin?

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Abstract: This article provides a brief insight in currently existing definitions of the concepts of work-based learning and learning within work processes. Based on the results of a research group at the Institute Technology and Education (University of Bremen) it also contains a comparison of the two concepts regarding the theoretical framework, scientific backgrounds and empirical foundation of both approaches with regard to development of individual competencies, the occupational capacity to act and the shaping of work (processes).

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1 Introduction

With respect to the success of the German society mastering the worldwide economic crisis since 2007 whilst contrasted by high unemployment rates among young people in several other European countries, the recent turning towards genuine vocational education and training (VET) concepts becomes more than ever comprehensible. The „world-wide socio-economic processes of change such as globalisation or the information age and the changing environmental conditions have a considerable impact on our societies in terms of the design and organisation of the world of work, and also on vocational education“ (Schröder, Schulte, Spöttl, 2013, p. 1).

The relocation of learning into the real corporate work process is increasingly dominating the shaping of work places and work processes in companies as well as the objectives and research methods in vocational educational science. The reasons for this development are the direct usability of learning outcomes in the work process, the relevance of problem-oriented learning for skilled workers and the long-term value of acquired experience knowledge for the occupational practice. As compared to classical learning situations, the relocation of learning into the work process enables companies to increase the effectiveness and efficiency of corporate further training. Due to the fact that also the employees benefit from this because the learning processes can be linked to work activities resulting in motivationally positive effects, learning at the workplace will continue to gain more importance in the future. Vocational education meanwhile acknowledges the work process as an important “content” for learning and for offering learning processes. In this respect, work processes

are increasingly becoming subjects of vocational educational research with the aim to identify those elements beneficial for learning within the processes.

But talking about “learning in the work process”, what is the difference towards the idea of “work-based learning” (WBL), as it is anticipated in the international community? Is the concept of WBL comparable to what researchers in Germany understand by the term “learning within work processes”? Are there similarities concerning the theoretical framework, scientific methods and empirical foundation of both approaches to be found with regard to sustainable problem solving, development of individual competencies and the occupational capacity to act? Or are they just a makeshift leading to adjusted short-term qualifications for disposable working tasks?

The article aims to clarify these questions by trying to provide an insight in currently existing definitions of both concepts. Further educational and vocational aspects like reflection or gaining the ability to shape real working conditions and technologies used rely on the clarification of the most important interactions between learning and working.

2 Work-based learning – The “International” Perspective

“Work-based learning is a fundamental aspect of vocational training – it is directly linked to the mission of VET to help learners acquire knowledge, skills and competences which are essential in working life.” (European Commission, 2013, p. 5). In VET research in Europe WBL focuses on three main topics such as apprenticeships, on-the-job training periods in companies and integration in school-based programmes, playing an increasing role especially in German-speaking countries. Regarding to the question what work-based learning is all about, Raelin describes WBL as a pedagogical method of „how to make learning arise from our mutual experience with others, in particular, from our work together“ (Raelin, 2011, p. 17). This does not apply to a typical classroom situation and a traditional disjunction of theory and practice. Quite the contrary, “theory is expressly merged with practice” and “learning is centered on reflection on work practices” (ibid, p. 17). Later on, Raelin shows the influence of philosophical elements to the understanding of the concept of WBL (and consequences for leadership) and refers to the necessary “spirit” of organisational learning and an essential learning culture, which e.g. allows free inquiry and curiosity for learning and for the exchange of knowledge. The statements of Raelin are leading to a WBL-Model with two fundamental dimensions: the first dimension describes two poles from theory and practice modes of learning whereas the second dimension is set from explicit to implicit forms of knowledge (Raelin, 2008). Further on, the model also shows the difference of WBL for individuals or in groups (e.g. in a company). Brought together in a conceptual model and complemented by the dimension “Level of activity”, four “expositions” or learning types are picked out, each with individual and collective points of view. In his summary Raelin expresses that WBL must “blend theory and practice. Theory makes sense only through practice, and practice makes sense only through reflection as enhanced by theory” (Raelin, 2008, p. 67).

A similar approach to define WBL is depicted in a study regarding a multidimensional scale measuring the learning potential of the workplace (Nikolova et. al., 2013). The research process identified four dimensions of WBL that are based on two “core components”: an interactional aspect and a task-based aspect. The first aspect is subdivided in learning from colleagues and learning from supervisor, while the second aspect is split up into learning through reflection and learning through experimentation. The testing and evaluation of this instrument showed useful results for research actions aiming to test workplace related learning theories (ibid).

In the end, both mentioned models emphasise the *meaning of reflection, of learning from colleagues and learning through practice*. All aspects refer directly to the *action in the workplace* and form a useful framework for the understanding of the concept of WBL.

3 Learning within work processes – The “German” Perspective

Learning in the process of working can fundamentally be depicted as “learning forms and -processes, that on the one hand take place directly in the work process or, on the other hand, directly refer to the work process itself” (Reuther, Weiß, 2003, p. 113; *translated by the authors*). Additionally, this kind

of learning is characterized by spatial and organisational closeness to the place and contents of employment based on a work analysis (Mühlbradt, 2014). This comprehension is explicated by three different research perspectives: The humanisation of the working life is shown through the holistic demand of the arrangement of work, which makes a contribution to the development of one's personality. The related research program "Lernkultur Kompetenzentwicklung" focused on the aspects of transfer of learning and competency development. Learning in the social context and informal learning in real work contexts as well as dispositions of self-organisation have been analysed regarding to their importance for competency development. Finally the companies' ability of innovation has been acknowledged as a basic element. This element can be fostered by innovation-stimulating workplaces, by supporting of informal learning or through a fundamental involvement of the company towards VET. Ideally, the result is an appropriate organisational culture.

In addition to this theoretical explanations the concept of "learning within work processes" is a basic principle for didactical research and shaping processes using the vocational educational scientific research methods with the aim to "*identify the characteristic work tasks and the incorporated requirements for qualification and to look at the didactical benefit of these tasks for competence development*" (Becker, Spöttl, 2008, p. 27). This leads to typical steps using the empirical data, e.g. for the shaping of curricula and further vocational trainings in Germany. That kind of argumentation is congruent to the legitimization of qualification contents based on the poles of empirical identified qualification needs and normative settings of educational objectives (Rauner, 2006).

One basic definition to describe the "learning content" of learning in the work process in detail is seen in the term of "work process knowledge". According to Fischer (2000) *work process knowledge is incorporated in the occupational act of skilled employees, but points beyond their own workplace*. Precisely, he means that kind of knowledge which connects the own work with the companies entire work process (Fischer, Witzel, 2008).

Obviously, a universal definition of learning within work processes is hard to find although there is a visible demarcation to other areas of education apart from VET. However, the comparison between WBL and learning within work processes is shortly discussed in the following.

4 Comparison and Outlook

To clearly indicate the different accents of both concepts, Kraus' (2006) scheme of occupation may offer another point of view. Her approach consists of the three dimensions: technical expertise, interdisciplinary competencies and attitude towards employment. It will become apparent that this scheme of occupation can help to understand the above mentioned concepts from a retrospective. Greinert (2008) reanalysis likewise, that the German vocational education closed an existing gap by focusing on technical skills in order to overcome qualification deficits in the 1960s and 70s. This continued in the debate of key competencies for multidisciplinary contents in the 1980s and 90s. Apart from that, the current discourse of considering employability so attentively emphasizes the latter dimension, namely the orientation at forms of work. Greinert further argues that vocational qualification follows four principles:

- A wide set of work-relevant competencies with focus on the individual giving manpower in exchange for money,
- A vocational education system with learning processes as key aspects measuring the achievement of defined occupational profiles,
- An occupation, in which vocational qualification ensures the personal development with a meaningful surplus for the individuals and
- Institutional courses as long-term, systematical and structured transcending the bare acquirement of skills in the direction of social role-play.

Besides its political pointers, WBL is obviously highlighting the first item. However, the concept's association with the idea of employability, which disregards general education and employees' participation but forces work capability in a free-market economy by assigning the responsibility for a successful occupation career to the individuals (ibid.; Faulstich, 2015), is critical.

In addition, the associations made between work-based learning and workplace learning in the definition of Nikolova et al. (2013) differentiates from Fischer's work process knowledge which even exceeds the workplace. With reference to Kruse (2002), Fischer (2006) determines two further aspects of work process knowledge: On the one hand, dominantly, it helps the workers to cope with pre-existing conditions. On the other hand, work process knowledge can lead to self-confident orientation and reflection for indeed possible alternatives, active participation and shaping of work. Consequently, "it incorporates a complete work process in the meaning of objective, planning, execution and evaluation of the own work in the context of operational sequences" (ibid., p. 309).

The focus on meaningful work situations for the development of vocational competencies arose in the course of the German vocational education turning towards work orientation. Thereby, learning within work processes is not directly brought up. Nevertheless, the authors see in it a reasonable motivation for the application of genuine vocational educational scientific research methods, such as participating work studies and skilled workers interviews in the course of work process analysis. Taking note of real work processes offers the potential for concrete qualification proposals, especially in young and upcoming sectors such as wind energy (Molzow-Voit, Windelband, 2015).

Vocational education and training not only aims at adjustment qualification but educational programs based on empirical research and normative settings. For this reason, learning within work processes demarcates from work-based learning, which also challenges learners to reflect but is rather guided by direct usability to fulfill economic needs.

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Session 12

Professional Identity, Inclusive Practices and Digital Inclusion – Perspective from Finland, UK, Germany and Taiwan

Conceptualisations of Inclusive Practice in English Vocational and Educational Training Systems: Meeting challenges and Identifying Strengths

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Abstract: This paper outlines the nature and application of inclusive culture, policy and practice during a time of rapid system and governance changes in VET within England. The focus of the study is an overview of changes, positive and negative, which have been experienced in inclusive practice in VET in further education (FE) college contexts, in the past 5 years, and how these impact on the transition into employment for people with SEND (Special educational needs and disabilities). Whilst ethically informed, empirical data has been collected to inform the conceptualisation of inclusive practice, the emphasis in this paper is on contextualising literature and documents. Initial findings indicate positive changing attitudes to inclusive practice within VET/FE despite a challenging and politically driven national achievement agenda in England. Full reporting of the data and analyses will be undertaken in a later paper.

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1 Introduction

Within the context of international challenges of provision of an appropriate workforce for the 21st century, and alongside an increased interest in creating inclusive workplaces, according to the Organization for Economic Cooperation and Development (OECD):

“Countries are now giving the long neglected topic of vocational education and training (VET) a dramatically increased profile, reflecting a recognition of its economic function and the need to grapple with emerging strains in VET systems” (OECD, 2010, p23)

This paper considers the nature and application of inclusive practice within VET (vocational education and training) in further education (FE) college contexts within England during what has been a time of rapid change in both systems and governance. The study focus centres on the impact of such

changes, both positive and negative, in the past 5 years, and how these impact on the transition into employment for people with SEND (Special educational needs and disabilities). It also considers the potential for positive change as opportunities arise to inform future practice.

Employment opportunities are inevitably linked not only to the needs of the evolving, and highly competitive, national and international labour market, but also to the willingness of employers to embrace a commitment to inclusive workplaces. New measures were announced by the previous English government of “an important accountability tool, both for FE (further education) providers on the quality of their post-19 provision” (Department for Business, Innovation and Skills, 2014, p3). Bjelland et al (2010), in a study of employment discrimination, suggest that it is ‘critical to support positive employment outcomes of groups who have been underutilized, specifically older workers and workers with disabilities’ (Ibid, p456). Within this socio-cultural background, VET systems must therefore be responsive to the needs of a diverse workforce, whilst valuing diversity and ensuring that all students have an equal and fair chance to reach their potential in the employment market.

Using documentation and data collected from a FE college and its linked employers, the authors seek to make sense of a rapidly changing field by examining how wider influences can impact on local practice, and therefore on the lives of people with SEND as they move from training to employment.

2 Theoretical background

Both VET and SEND form part of a dynamic conceptualisation which encompasses the multi-faceted transition from VET to employment. Such transitions for students with SEND are predicated by a complex web of influences, which range from very individual, personal attributes, aspirations and impairments, through to the wide reaching national and international influences which shape their context. To make sense of this, the researchers propose an application of the theoretical framework developed by Bronfenbrenner (2005). Bronfenbrenner argued for the use of the process-person-context model for research design to allow identification of ‘any differences in developmental processes and outcomes associated with different ecological niches’ (Bronfenbrenner, 2005, p. 118). Furthermore, Singal (2006) argued that Bronfenbrenner's framework allows for an exploration of inclusive education as being about the development of systems and the development of individuals.

Additionally, Hawe et al (2009, p. 269) postulated that schools or worksites can be recognised as ecological systems that utilise a dynamic perspective that emphasises ‘linkages, relationships, feedback loops and interactions among the system's parts’. Neal and Neal (2013) have further argued that ecological systems should be conceptualised as being networked and where systems relate to one another in an overlapping way, in contrast to being seen as a nested approach.

The researchers have also used and developed the conceptual framework of Booth and Ainscow (2002), which investigated inclusive practice. The three dimensions of inclusion suggested by Booth and his colleagues have been used as a lens with which to examine both documentation and data, in this study. Booth's original work was further developed within the Roadmap to Inclusion (TILE, 2013), through the implementation of inclusive principles to VET in a range of international settings. Both conceptual frameworks applied the three dimensions of cultures, policies and practices, to propose an exploration and evaluation of inclusive practice in educational institutions, which values and promotes diversity. This is in line with the social model of disability (Oliver and Barnes, 2010) where all students are valued equally, and institutions adapt to ensure that individual needs and preferences are not simply tolerated or even accepted, but in a response to encompass diverse needs and attributes becomes embedded in the functioning and philosophy of the part of normal practice.

Research questions focus on the changing agenda in further education (FE/VET) settings in England.

1. What positive changes have been seen/experienced in inclusive practice in FE/VET in the past 5 years/currently?
2. What potential challenges to inclusive practice have been seen/experienced in the past 5 years/currently?

3 Methodology

This conference paper covers a literature and document search relating to current practice in England. In addition, empirical, qualitative data were collected through semi-structured interviews with VET/FE professionals on the context of a further education college in England. Additional data were collected from written email responses to a short questionnaire using an opportunistic sample of employers of students with SEND, contacted via the college staff, and one local government manager involved in supporting employment access for people with disabilities. Ethical guidelines were followed in line with the British Educational Research Council (BERA, 2011). These data have been analysed and the results of this part of the research will be covered in a more comprehensive, subsequent article to be submitted for publication.

4 Three dimensions of inclusion

4.1 Cultural evolution

Inclusion for people with SEND is no longer seen as a country wide issue and has a wide reaching, international agenda (Artiles and Dyson, 2005). In recent years, there has been an exponential rise in the use of the internet to facilitate wider communication, not only between educators around the world, but between populations and individuals, thus creating more open, international employment markets. Alongside this, in England, there has been an expansion and opening in the roles of educational institutions. Colleges of Further Education (FE) in England, which traditionally offered both academic and vocational training to students in post-compulsory education, have now partnered with schools to offer vocational courses for learners as young as 14 years, and with universities to offer higher education (HE) courses leading to undergraduate degrees. English universities have created their own University Technical Colleges, providing education for school-aged learners, and including vocational courses. Both FE and HE providers are moving to closer links with the workplace and offer a widening range of vocational courses.

4.2 Policy in context

In England, recent political rhetoric has linked the raising of academic outcomes to success in employment, evidenced by examination results in national academic qualifications. For students with SEND a 'focus on raising standards which is founded only upon a narrow range of academic outcomes' (Rose, 2014, p. 55) has been critiqued as incompatible with allowing people with SEND to succeed and be included in both education and the workplace.

Recent changes in English educational policy are offering potential opportunities for innovative practice and systems development. The 'Special educational needs and disability code of practice: 0 to 25 years' (DfE/DH, 2014) provides statutory guidance for organisations supporting people with SEND. The guidance indicates that formalised plans for students with SEND in schools must include transition planning, and Local Government Authorities (LAs) must set out, in a publically available 'offer', support available to help young people move into adulthood and prepare them for employment (Department for Education/Department of Health (DfE/DH, 2014, p. 63). New Education and Health Care Plans, which schools will now put in place for young people with SEND, must have a focus on adulthood from the age of 13-14 (DfE/DH 2014, p118), and planning for education of students with SEND is now required to record pathways to employment (DfE/DH, 2014, p. 120-121), with clear implications for VET providers. This extension to previous SEND documentation which only covered school-age children and young people is an important step forward, bringing young adults in VET clearly into the spotlight.

4.3 VET Practices in relation to SEN

Much of the debate around VET practices still focuses on the need to provide a variable, skilled workforce. However, McGrath (2010) argues for an academic debate about the nature of VET which puts the needs and development of people at the centre rather than focussing on systems and qualifi-

cations. It is important to bear this in mind as VET is attracting interest from politicians and funding bodies, for a number of reasons.

In England, FE colleges are state owned, funded and managed institutions, where VET takes place alongside academic and basic skills provision. Ever-tightening economic constraints, along with a concern for the creation of an internationally competitive workforce, have encouraged English governments to place VET under close scrutiny. A proposal is in place for systematic, formalised collection and publication of data about all FE colleges, where much VET is situated. This will include post-education destinations into employment or further learning, and earnings, following completion of courses. This is said to be “an important accountability tool, both for FE providers on the quality of their post-19 provision” (Department for Business, Innovation and Skills, 2014, p. 3). This direct, but extremely narrow link between learning and economic success, is unlikely to promote the needs of many students with SEND and ignores well-being and meaningful occupation which are key issues in inclusive practice, but echoes the recent government focus on reducing the number of adults in receipt of disability allowances.

Another aspect of practice VET/FE in England is also currently under review. The industrialist Whitehead (2013), in a report commissioned by the previous coalition government to review vocational qualifications in England, revealed that of approximately 19,000 regulated vocational qualifications available from 176 awarding bodies, the majority were at Levels 1 and 2: in England these are around the level expected before the age of 16. Whitehead called for clearer progression routes in FE, HE and the workplace. If taken in tandem with the Code of Practice (DfE/DH, 2014) this could be an opportunity to develop clearer and more explicit routes for non-traditional students. With a new government already making cuts to services for people with disabilities, it is questionable whether this opportunity will be seized.

5 Empirical Findings

This review of documentation supported by empirical data reveals, at both an individual and institutional level, positive changing attitudes to inclusive practice within VET/FE despite a challenging and politically driven national achievement agenda. English systems to enable both the identification of diverse students and particular support needs such as special arrangements to access examinations are evolving rapidly and there is potential for student assessment to be streamlined to enable this.

6 Discussion and moving forward

The years to come offer a chance for a rethinking of both the nature of VET and how we ensure that it meets the diverse needs of populations and individuals around the world. Fostering inclusion requires us to challenge exclusion in the light of changing political contexts (Slee, 2013; Rose, 2014). This research offers insights into possible developmental directions. This is a crucial moment to enter into a debate about the way in which VET can develop to meet not only the needs of individual students, including those with SEND, but can also provide and encourage creative skills and competences which support the needs of the international community and the planet. One such example would be fostering closer links between VET/FE and employers. Additionally, partnerships between universities and colleges of VET can be embedded in good practice to facilitate transition into the employment market. This is an important way of encouraging students with SEND to progress from their studies into the workplace.

As Rose et al., (2014) suggest in reference to the Index to Inclusion: “It is necessary to establish more holistic approaches by which we may interpret the effectiveness of schooling and through which we may make observations about its inclusiveness.” (Rose et al., 2014). One of the strengths, but also challenges, of inclusive practice in 21st century VET/FE systems will be to empower people with SEND to become involved with the inclusion debate.

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A Pilot for a new Professional Profile: “e-facilitator” for Digital Inclusion - Closing the Gap in Professional Education for Digital Competences

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Abstract: Digital exclusion is an increasingly pressing challenge of the knowledge society. Telecentres accept the challenge by providing internet access and raising the competences of the digitally excluded in local communities. This paper reflects the role of e-facilitators, the persons who work in telecentres, and the diverse set of qualifications they need in order to do their job well. For this group, which is rapidly growing in number, a curriculum has been developed, tested and made available for free. Finally, opportunities to integrate education for mediating digital skills in existing professional profiles are being discussed.

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1 Introduction: Why a new profession? The challenge of digital inclusion

18% of EU population aged 16-74 has never used the internet (Eurostat, 2015). This means a large group of adult citizens is excluded from services such as education, eHealth, wide parts of the labour market or eGovernment. A national comparison shows that this percentage is not set in stone: In some countries (Iceland, Denmark, Netherlands, UK, Finland, Sweden or Norway) only 1-8% of adult persons never used the internet. In other countries (like Italy, Greece, Romania) more than 30% never used the internet (cf. Eurostat, 2015).

While the overall target figures of the Digital Agenda Scoreboard might be reached (cf. European Commission, 2014, p.2), it is obvious that regional and national differences matter a lot. Digital exclusion seems to be a matter of socio demographic factors; correlations with socio demographic background of internet users and "offliners" indicate that vulnerable people are not only less active on the web (European Commission, 2014, p.2) but do also draw less profit from their activities if they are online (Dudenhöfer and Meyen, 2012). This group of "digitally excluded" persons is largely made up of people aged 65 to 74 years old, those on low incomes, the unemployed and the less educated (cf. European Commission, 2010, p.24). "Bridging this digital divide can help members of disadvantaged social groups to participate on a more equal footing in digital society (including services of direct interest to them such as eLearning, eGovernment, eHealth) and to tackle their disadvantage through increased employability". (European Commission, 2010, p. 26).

On the other hand, the European economy "is hampered by a shortage of ICT practitioner skills" (European Commission, 2009). "39% of the EU workforce has insufficient digital skills, 14% has no digital skills at all" (European Commission, 2014, p.8). This competence gap results in a growing deficit of ICT professional skills, forecast to reach 900,000 by 2020 (European Commission, 2014, p.8) which challenges EU development targets related not only to inclusiveness, but also to innovativeness. The Scoreboard sustains this forecast on a study by Empirica (2013). The final version articulates that in 2015 the unfilled vacancies for ICT practitioners are believed to amount to 509,000, with the forecast being 913,000 in 2020. (Empirica 2014, p.128). These numbers alone show the extent as well as the diversity of the societal challenge of digital exclusion, and the need for professionalising all efforts contributing to an inclusive turnaround. This indicates the need for people who can act as change-makers by setting up and scaling projects, institutions and learning opportunities for digital inclusion.

2 The working space. Physical places for digital competences

Public internet access points (PICs) or telecentres are institutions which have emerged to provide free internet access and to raise the competences of digitally excluded persons. Telecentres have placed themselves as providers of ICT access and digital competences in local communities. They cover the intersection of ICT based learning (for any purpose, such as employability or leisure, lifelong learning or personal development), ICT competences (for example, learning how to use applications, how to surf the web or how to handle a tablet) and community building (through the mediums of local based communities or groups of interest, like senior internet cafes or telecentres for migrants). Typical examples for these spaces are public libraries, senior residences, youth clubs or dedicated public internet cafes. These institutions have shaped new practices of supporting vulnerable target groups by creating places in which to learn and spend leisure time, offering the chance for new learning opportunities and principles such as community-based learning, and formulating local networks for promoting digital and social inclusion on the local level. There is also the support of their staff's competences matching the multi-faceted profile needed to facilitate digital competences. They can be regarded as the institutional layer of vocational training for fighting the digital gap.

Rissola and Garrido (2013) estimate that there are "almost 250,000 eInclusion organizations in the EU27". These institutions usually operate with less than 10 employees and a budget of less than 100,000 EUR per year, leading to a "physical" digital inclusion support structure in Europe which is widely spread, but consisting of small units. Telecentres work as promoters of digital competences especially for disadvantaged target groups and for people with special needs (e.g. migrants, elderly people, unemployed persons).

3 The profile of the e-facilitator. A pilot

A key challenge for a successful target group approach is the qualifications of the telecentre staff (“e-facilitators”). Recent years have seen a constant rise in requirements that educational staff working in telecentres have to abide by. Telecentre staff meet challenges like reduced public funding, new labour market demands for employability concerning ICT qualifications and changing technological systems (tablets, cloud applications, apps). On the other side, end users are requesting new services (mobile devices, online job searching, certification of competences) and new target groups are entering the digital world facing competence gaps. These developments lead to a demand for professional training for educational staff of telecentres.

E-facilitators enable disadvantaged people to acquire digital competences and participate in the digital world. It is difficult to estimate the number of persons working with end users in the field of eInclusion, but taking 250,000 organisations as a basis, it seems safe to argue that around 250,000-375,000 persons in the EU are working on digital competences of disadvantaged persons. Only tentative research has been done on the sociodemographic characteristics of this field of employment, but it seems to demonstrate a presence of a young, female and highly educated workforce with a high diversity of educational profiles. This staff can be regarded as persons with high interest in social innovation, with strong links between this person group and social innovators being able to be traced through different social entrepreneurship organisations. These staff are in need of constant training with issues needing to be tackled such as the means to initiate and sustain fundraising, certification of competences and a high crew change rate. As recent research has shown, there is no recognised or widely accepted profile for e-facilitators yet. This situation challenges both the “quality” of e-facilitators and the attractiveness of this occupation for employees or volunteers. These issues were addressed by the project “Trans e-facilitator”.

“Trans e-facilitator”¹ (TeF) was a transfer of innovation project contributing to the European lifelong learning strategy in a twofold way. On the one hand, an e-facilitator curriculum was produced and tested in different national contexts, employing a localisation process that took differentiation between national and regional situations into account. On the other hand, the transfer has initiated a systematic recognition process in the participating countries of Germany, Latvia and Portugal, including stakeholder involvement for social recognition and preparatory steps for a formal recognition process. Moreover, it has led to an increased awareness of European stakeholders and member states with respect to social integration through digital learning opportunities and the need for professionalising the e-facilitators’ field of practice.

The “TeF” training course consists of eleven modules, addressing management, sustainability, communication and ICT competences. All learning materials are available online and free of charge and have been disseminated to telecentre staff all over Europe. The professional profile of the e-facilitator can be regarded as the layer of practice overcoming the boundaries of institutions (like libraries, SME or vocational training institutions, all relying on e-facilitators) by providing teaching, learning and competence development.

Although digital technologies are often used to connect people with similar interests, the telecentres’ mission to digitally and socially include vulnerable target groups has a strong emphasis on the local level and is focused on establishing or re-activating local communities where telecentres consider themselves facilitators of social innovation processes. They empower local communities via digital media and build networks and unlikely alliances with other education providers, public employment services and companies. Social innovation in this paper is referring to a combination or figuration of practices (Howaldt et al., 2014) in areas of social action, prompted by certain actors or constellations of actors with the goal of better coping with needs and problems than is possible by existing practices. An innovation is therefore social to the extent that it varies social action, and is socially accepted and diffused.

¹ See www.trans-efacilitator.eu. The project received funding from European Union’s lifelong learning programme and ended in September 2014.

Speaking for Germany, where five of the eleven modules have been piloted, there is a distinct demand for the curriculum. Besides safety and security issues which are addressed, the facilitation of learning processes with target groups such as senior citizens and migrants is regarded as very important; as are modules on internet-based search for employment opportunities and basic knowledge of how to develop media literacy trainings. The different modules can easily be implemented into the curricula for professional education as well as professional development in social education and thus directly lead to the qualification of e-facilitators. During the piloting process, 112 e-facilitators, 32 of them German, implemented and tested modules e.g. on promoting ICT for elderly and migrants, on facilitating job-seeking at the telecentre, on planning digital literacy workshops, and on e-safety and e-security.

A second objective of the project was to draw attention to the profession of e-facilitators and to establish it as a permanent profession within national vocational training systems. There are at least four opportunities where the curriculum of a set of modules could be included in already existing educational structures: First, in vocational and educational training and higher education, e.g. in curricula for preschool teachers, educators or social workers, the curriculum can help to focus on digital empowerment. Secondly, volunteering services (like the "freiwilliges soziales Jahr" in Germany) could employ the curriculum to spread ICT related teaching competences within social services and education systems. Thirdly, as the players in the field of social inclusion (predominantly the large welfare organisations) are in need to establish standardized trainings for their employees to meet the changing and emerging needs of their target groups, the curriculum can become a part of these institutions' further education programmes. Fourthly, in small and medium sized companies employees can be identified that take over the role of internal e-facilitators in order to promote their colleagues' digital competences.

In all four cases, the internal function of e-facilitators would be complemented with an external one. The telecentres' mission to digitally and socially include vulnerable target groups has a "strong emphasis on the local level and is focused on establishing or re-activating local communities. One reason is certainly that "exclusion and inadequate policies become visible in cities, suburbs and villages in the first place" (Kaletka and Pelka, 2015). In the local dimension, the boundary-crossing character of telecentres and their staff with respect to the institutional and practice-related reference level comes into play. Telecentres are not part of the formal education system but provide non-formal education especially for vulnerable target groups and, subsequently, for people who voluntarily attend the courses. They have to develop strong networks with secondary and adult schools, employment centres, public administrations, companies and other local stakeholders in order to set up community projects, help people find a job, and to effectively support their clients in different settings and critical phases of their (learning) biography. This telecentre-driven accumulation of social capital and border-crossing collaboration – through interactions with policy-makers, researchers, companies and the civil society - shows that e-facilitators often act as social innovators and change-makers. In this system, "civil society is considered increasingly important for developing new processes and collaborations aimed at social change on the local level" (ibid.). This is why topics such as network building and sustaining telecentre organisations are also part of the "TeF" curriculum.

4 Integrating education for mediating digital skills in professional profiles. Next steps

Further education as opportunity for vocational improvement and promotion becomes increasingly important for employees as well for people who want to enter the labour market again. People who had already finished their first vocational education got the opportunity to receive additional qualifications which allowed them to take more responsibilities. Next to better payment, the reason to attend further education is often the chance to take over another role in the work place and thus achieve "vocational fulfillment". For most vocations officially recognized professional academies play an important role as providers for additional qualification. The vocational profile of (early childhood) educators is probative for the potential of further training in media education for vocational specialization and further development.

Although there have never been as many employees in German day care institutions for children or as many future staff in training than today, the demand for pedagogical professionals and educa-

tors is still very high due to the implementation of the right for care places. Those professionals are mainly trained in technical colleges for social pedagogy. With additional courses for early childhood pedagogic and models for the lateral entry in this vocation various new entry opportunities were created for the work field of day care (cf. Deutsches Jugendinstitut (DJI) / WIFF – (Initiative for further education of professionals for early childhood education). Nevertheless, an obligatory curriculum that qualifies pedagogic professionals in media education is neither existent in vocational training nor in further education: although most training plans or basic curricula of the German federal states that were introduced in the post PISA era include in their directives media education as an educational mandate and therefore as work field for educators. Also the 14th Child and Youth Report of the Federal Ministry of Family Affairs, Senior Citizens, Women and Youth shows that the life world of children and young people is increasingly influenced by digital media and that this is a challenge for social workers, educators and other pedagogical professionals in many ways. The report calls attention to the safety handling of personal data in social networks, the meaning of pedagogical child and youth protection, the digital inequality in participatory and educational opportunities and the necessity of qualified media education.

In 2012, a study on the status of media education in day care facilities in North Rhine-Westphalia was conducted from the media science team of the University of Paderborn led by Prof. Dr. Dorothee Master. The results show that over 80% of the surveyed facilities understand media education as part of their educational mission. Especially on the management level the interest for media education is (very) high (62%). The majority of the surveyed institutions wish therefore for more external support regarding media education services and media education training. However, the actual situation is different: only six of 650 institutions reported that their employees (apart from training) have a media educational background. Thus, the increasing mediatisation of the children's everyday life is (still) hardly reflected by the deployment of educators qualified in media education.

Additionally, the evaluation of the nationwide media qualification project for preschool teachers of the initiative "Schulen ans Netz" ("schools online") made it clear that long-term changes in the attitude of professionals towards digital media can be best achieved through continuous training. It was the scope of the training to contribute to lasting changes in the early childhood education landscape in the sense that a greater acceptance and a competent use of digital media can be achieved. A special focus of the evaluation was thus on the issue of sustainable impact of the measure. The results of the qualitative analysis point to lasting changes in the everyday life of former participants. The participants became multipliers in their institutions who passed on their knowledge and supported colleagues in their media literacy acquisition process. This result supports the multiplier approach of the project "Trans e-facilitator" and that the impact of training campaigns is especially sustainable if both colleagues and management have a positive attitude towards the inclusion of media education in their work field.

These statements prove that both the vocational training and further education for educators and social pedagogic staff offer appropriate connecting points for the implementation of a specialized curriculum for media education and thus for qualifying e-facilitators. Thereby is the assignation of secondary importance, whether it is called "e-facilitator", "professional for media education" or "media consultant". Alone, the variety of different responsibilities in the respective states or regions will ensure different names for this profile. Of importance is, however, that the qualification framework is as uniform as possible and that there is a binding quality assurance in the implementation of the qualifications. From this point of view, both the curriculum from the "Trans e-facilitator" project as well as the experience of the pilot phase of the project can provide important support. The modules can be integrated with little effort into the formal education of professional academies. Additionally, it would be possible to include the "Trans e-facilitator" modules into existing trainings and into the newly developed university courses for early childhood pedagogues. However, because of the rapid development in the field of digital media, it is necessary to review the contents regularly, update the curriculum and train the professionals continuously in up-to-date modules.

E-facilitators act in their professional environment as multipliers and thereby take over an additional role which is in demand in various professions and voluntary positions. From the voluntary trainer at the senior computer centre to the social worker in the youth centre, educators, librarians,

IT-specialists, job counsellors and customers as well as the craftsman or professional in small and medium enterprises (SMEs), can all become e-facilitators and introduce people to the Internet - assisting them in the use of digital media, informing them of the dangers and showing them benefits and recommendations. Employers benefit from this feature, because in many companies the digitization process has not really started. With their help and advice, e-facilitators also contribute to opening the gate to the digital world for disadvantaged people and so to be a part of society. They make a significant contribution to the digital inclusion.

But in the further education sector the topic of facilitating media literacy is still not widely considered. While there is a high amount of computer courses which teach the usage of specific hardware and software, there is still a lack of courses which facilitate the dimensions of media competence and media literacy under pedagogical aspects to specific target groups. The training curriculum of the project "Trans e-facilitator" combines technical with pedagogical aspects and provides thereby a first step to the development of qualifications for facilitators of media competence. In order to disseminate and further exploit the training curriculum in a broader scope, complementary measures can be conducted. For an extensive application, the curriculum should be implemented into already existing vocational trainings (educator, social worker, etc.). In Germany as well as in other countries, four actors should be addressed for this purpose: employers' and employees' associations, the Federal Institute for Vocational Education and Training and respective ministries. A market assessment and market analysis in advance can show the market potential (description of the need). Long-term efforts can be complemented by a short-term implementation of the curriculum in projects and collaborations with partner organisations. In welfare organisations qualifications for the staff could be created, in which the curriculum is adapted to the needs of employees and then integrated into the educational culture of the organisation with the train-the-trainer approach of the project "Trans e-facilitator". Training organizations could also integrate and extend the curriculum that they offer. There are already national as well as international organisations interested the curriculum and view it as a benefit for their employees or their training programs.

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Session 13

Learner-Generated and/or Instructional Videos as a Means for Competence Development in VET

Learner-Generated Videos as a Means for Subject and Language Learning in the Care Sector across Europe

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Abstract: How can innovative learning concepts be expanded into vocational education? Starting-point of the European Resolve- Project is an already established video platform draufhaber.tv. The aim is to implement the method of learner-generated videos with subtitling as a pedagogic means in IVET in the care sector. The article asks what are the enabling and restraining factors in doing so applying a socio-ecological approach that focus on structural and cultural factors as well as individual agency of teachers and students.

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1 Introduction

ReSoLVE – Reinventing Subtitling for Language Learning in Vocational Education, is a two-year innovation project, financed by the European Union (2013 - 2015), which object is the implementation of learner generated videos and their subtitling as a pedagogic means in vocational education. Didactic teaching-learning-units at schools for (geriatric) care are implemented in the target countries. In doing so, at least four learner generated videos on a health care issue with English subtitles are produced by apprentices in each country. These videos are exchanged through a platform and incorporated into the vocational education classes of the participating countries. Starting point is the already established video platform draufhaber.tv. This platform is translated by the project consortium (DE, ES, FI, IT, RO) into a multilingual video platform (EN, IT, FR, FIN, ES, TK, RO, RUS) and is improved by integrating a display-function for subtitles. Therefore the platform becomes a European platform for videos through which young people are able to demonstrate their skills in their vocation. Afterwards, the videos are discussed and translated back to the national language of each country. There are main elements regarding the subtitle function: on one hand as an aspect of mobility (language learning), on the other hand as a resource of students with migration background (showing competences). Thus subtitles have to be considered as a resource in vocational training providing access to vocational content and foreign languages outside the traditional curriculum. Against this background, questions regarding cultural practices of teaching and learning as well as agency can be discussed target group-specific.

2 Theoretical Framework

Through a socio-ecological approach the paper wants to address the question of how innovative learning concepts (learner-generated videos) can be expanded into vocational education. The model of Pachler, Bachmair and Cook (2010) has been developed for the description of education related use of mobile technologies, but can be interpreted more broadly. Socio-ecological approaches in general are derived from the area of socialisation research and understand socialisation as an active engagement within different environments. The term ecology is used in order to reveal that a medium like learner-generated video is embedded in a constantly changing socio-cultural and pedagogical context,

The description of this context takes place on three levels: structure, cultural practices and agency. Pachler et. al., (2010) are describing these three definitions as follows:

- Structures contain social structures, for example milieus, as well as technological infrastructures and curricular structures of educational systems, which influence the use of cultural resources for learning.
- Cultural practices describe the handling of new technologies as well as pedagogical practices and the underlying concept and understanding what learning is.
- Agency describes the ability of the individual to act within these structures and practices. This means not only the active engagement in the sense of becoming an acting person but as well the “active” decline of an action, for example the conscious renouncement of the use of digital media. Agency is of a central importance in this study, because it enables one to analyze different individuals or different groups with regard to their behavior towards similar structures and practices.

By using agency as a research focus a subject-oriented approach is proposed; however, this is not neglecting structural elements, but is connecting these in a non-hierarchic model. Such an approach seems to be suitable to structure the observations made within the Resolve project and to show connections between structure, practice, and agency with regard to the introduction of learner-generated videos in the care sector. In terms of Giddens (1997) we are looking at the individuals influenced by structures but as well as formers of their environment.

3 Research questions

Our research questions derive from the socio-ecological approach:

- a) In which way aspects of structure enable or restrain learner generated videos and their subtitling as a didactical means for subject and language learning?
- b) How does the cultural practice of learning relate to this innovative method?
- c) In which way teachers and students engage within given structures and shared cultural practice to make the video production and subtitling process come into reality?

4 Empirical Foundation

The empirical foundation is based on a method triangulation in order to consider a subject-oriented perspective. Two times teachers and students were interviewed about the implementation process by using quantitative questionnaires and qualitative group and in-depth interviews. Observations from the implementation process were added in forms of field notes to complete the findings.

Our

5 Findings

Our main empirical focus lays on aspects of agency, nevertheless structures and cultural practices influences the process.

5.1 Structure

Regarding structure it is to mention that in none of the countries digital or media learning is fixed in curriculum structures in care sector. But all schools have more or less access to technical infrastructure to record and edit learner-generated videos.

Only two countries (RO, FI) have integrated English in their curriculum. In Germany, structural differences on Länder-level lead to a mixed result of one state (Bremen) without foreign language in the curriculum and the neighboring state Lower Saxony with English as a mandatory subject. In Spain and Italy, English was not part of the curriculum.

This structure affects the way in which teachers respond to the challenges of producing and subtitling learner generated videos. When questioned about the role of technology and changes at work all teachers agreed that technology has an undeniable role in their work, and that increased use of technology has brought changes in their work. These changes are both positive and negative. Positive changes include for example new opportunities for interaction and increased amount of different kind of teaching material. Negative side of technology, in turn, is reflected for example in the fact that amount of work has increased (including keeping themselves up-to-date in technological issues) and technology is not always working properly.

Since the use of digital media is not embedded in the structure of IVET in care sectors, it relates on the agency of each individual teacher or trainer to deal with the consequences on individual level. This is reflected on the ambivalence of each partner. Questioned the experience and implementation of the method (educational video production) with focus of subtitling we could sum that a few teachers had some previous experience about video production, but none of them were experienced in video subtitling creating a voluntary, singular impression for the activities.

5.2 Cultural Practice

We found a couple of ideas on how learning should take place within the project that we consider as a phenomena of cultural practice of learning in this sector.

First the selection of the content of videos was done in all countries by the teacher. It relates to the idea that the teacher knows and selects what is important for the class. The same process happened when teachers chose videos to get translated.

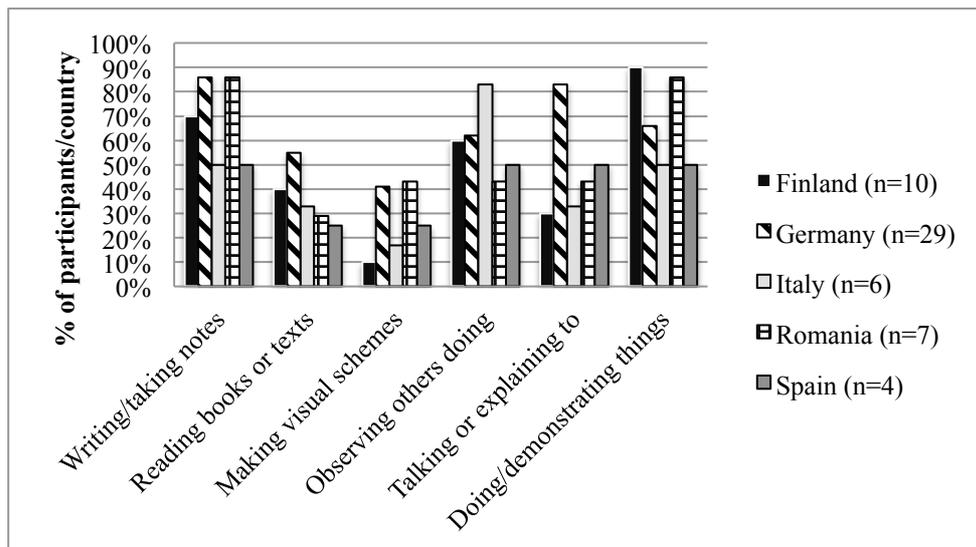
Focusing on the benefit of foreign material, all teachers are interested in material produced in other countries during the project. Therefore they see foreign material as useful in demonstrating how

similar tasks can be performed differently. But there is as well a high worry about (1) external assessment regarding the videos: How did others see me and the product (extern view) and (2) (students) learning process with regard to mistakes (intern view). Due to the fact that learner-generated videos may include some mistakes all teachers mentioned that it is really important to make sure that students find these mistakes and learn from them. This includes a discussion about the issue to make sure that students understand the differences correctly. It showed up that on intercultural level a strong curiosity of foreign material is visible as much as a concerning about external assessment and insecurity with regard to mistakes. The traditional cultural practice of teaching is teaching the right things by showing proper content. Learner generated videos are challenging this cultural practice of learning.

5.3 Agency

Students were asked with a questionnaire on their preferred learning styles with regard to new knowledge of skills in their field. Producing explanatory videos corresponds to some of the most preferred learning styles: doing / demonstrating things to others (70%) and talking or explaining to someone (61%) are constitutive elements of the production process. On the other hand we find the receptive perspective as well: 61% of the students prefer to observe others doing things. The answers are not exclusive: Students were able to respond to more than one item.

Table 2: Preferred Learning Styles per country



Interestingly we see a huge difference between countries: Students from Germany and Romania preferred writing or taking notes while Finnish students preferred doing / demonstrating things to others. While we have to keep the low response rate in mind we might see here again interplay between agency and cultural practice. In Finland peer learning seems to be more embedded into vocational education thus students develop a preference with regard to these techniques. In contrast in Germany the preference of writing notes corresponds to our observation within class or through the discussion with teachers that the reluctance of using peer produced material is due to the fear of mistakes or non-validated knowledge. In one school teachers were quite skeptical with regard to our approach claiming that they even check presentations of students beforehand to prevent errors shown to the class. Teachers that took part in our project revealed a strong individual approach that stood in contrast to the overall impression of their colleagues. We see here how individual agency can act contradictory to the cultural practice of one institution.

6 Resume

Summarized, all teachers taking part in our project found video recording and subtitling a useful way to promote language learning as well as for learning with regard to foreign practices. But, as video production and subtitling was considered as a very time consuming and partly technical demanding method, they mentioned as well the difficulty to integrate such way of teaching in everyday practices. Questioned the suitability to use and develop the method, all countries shows interest to use and develop the materials. While FI, DE and ES express no doubts for the moment, IT and RO struggle with (1) the accuracy of the learning material (RO) and (2) the sustainability in means of access due to a lack of materials provided by the school (IT).

In countries without English as a part of the curriculum, the activities were completely performed on voluntary level which raises doubt on the sustainability of the action. This obstacle can only be overcome by a change of curricular structure.

Despite these positive views, it still remains unclear what are the major added values of subtitling for learning compared to more traditional methods. Thus, video production and subtitling should be further developed in a way that is easier to integrate into everyday practices.

Further education of the teachers in the use of digital media would strengthen their agency in using this method and providing a first step in the direction of a cultural change of learning with regard to learner generated videos and the didactical use of mistakes.

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Teacher Self-Governance in Technology-Based Learning Project – A Pedagogical Approach

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Abstract: The purpose of this study is to problematise teacher self-governance in a technology-based learning project (TBLP) as a pedagogical approach. The rationalities of governing the self are constructed in a sociocultural perspective according to a governmentality analysis of teachers' accounts. The findings reveal teachers' self-mobilisation through the process of learning projects as knowledge producers, lifelong learners, owners and entrepreneurial self-managers of their learning. Furthermore, the study indicates that a TBLP can enable teachers to become responsible for individual self-realisation and play a role in scaffolding learners' change. Thus, the TBLP seems to form teachers' future in terms of human capital contributing to socioeconomic development and productivity. Finally, the findings demonstrate that this pedagogical approach can shape both generally and vocationally oriented learning practices.

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1 TBLP Characteristics

This paper explores the ways in which secondary school teachers govern the self while integrating information and communication technology (ICT) in teaching and learning through a pedagogical approach of a technology-based learning project (TBLP). This approach is characterised by five main aspects (Mukama, 2014). Firstly, technology is brought to students' sociocultural proximity: the change in learning practice depends to a large extent on whether technology is positioned in students' physical, cultural and contextual proximity. Secondly, learning activities are organised around authentic and real-world projects. The learners are given some degree of responsibility and autonomy to make personal investigation in order to shape their understanding. The development of real-life experiences is supported by collaboration. In other words, learning emerges from learners' actions in the interplay of 21st century skills, namely critical thinking and problem solving, creativity and innovation, and communication and collaboration. Thirdly, technology is in the background of the process of learning, and knowledge construction is at the forefront.

In this study, a modified circle of knowledge construction inspired by Wells (1999) and Rogoff (1995) is utilised: teachers demonstrate previous experiences that constitute their world of work. In the encounter of previous experiences and new information collected from different sources (such as the Internet, computer, library, facilitators, experts, and the community), new understanding can be jointly achieved in a discourse through a participatory activity. Therefore, knowledge construction involves creation of new meaning or improvement of representational artefacts. Moreover, new knowledge can be appropriated and serve to deal with further related situations. Fourthly, the TBLP implies that learning projects are shared with an external audience, especially with end users, and experts. The point is that sharing learning projects with the community helps learners to gain real-world experiences, while an external audience's feedback lifts them up to higher-order thinking. Fifthly, the spiral process of a TBLP is organised in the five following components:

- *Planning*: this component consists of the creation of group work. Moreover, group members get together to define their learning projects, which should be authentic, service-oriented and drawn from a real-world experience. Learning projects should also reflect the group's physical, cultural and contextual proximity. Group members plan how they will strategically handle their learning project. They may ask research questions or identify hypotheses that need verification. However, this plan can be modified and adjusted along the process according to the reality of the ground.
- *Investigation*: group members try to collect data and evidence in order to answer research questions or verify hypotheses identified in the *Planning* component. They organise field visits and meet experts and the community. Group members are advised to deal with one task at a time, though sources of information may vary. This component implies also experiencing both hands-on and minds-on activities in the light of 21st century skills.
- *New solution*: this component is crucial as learners need to create a new and common understanding or product satisfactory to the group members. They must demonstrate outcomes of learning, reflecting appropriate solutions and development of a meaningful project. Group work strategies are essential to helping learners to develop exploratory talk (Mercer, 1995) and a progressive discourse (Wells, 1999). These include critical analysis and evaluation of individual thoughts and propositions for the purpose of reaching joint achievements.
- *Sharing*: the project work as a new solution or as a new product is shared with an external audience in order to gain insight from end users, customers, experts, the public or the community. The first audience to make comments on the group work comprises classroom mates. Facilitators can organise group presentations not only at the end of the *Solution* component but also whenever necessary. Sharing their project work with an external audience creates also a sense of motivation to the learners and helps them to address real-world needs; furthermore, feedback can assist in improving their work. Meeting experts enables group members to become legitimate speakers of experts' discourse.
- *Planning the way forward*: this component refers to appropriation of the new solution developed as project work for individual and societal fulfilment. Group members plan how their proposed solution can benefit end users, customers and the community, and make it happen if possible. Finally, group members investigate ways in which to deal with a new inquiry created by their new solution.

2 Governmentality

In this study, governmentality is analysed in terms of teachers' power relationship vis-à-vis the present order of the education system in Rwanda. The study relates to reflection on teachers' conduct about learning and its different expressions (Simons and Masschelein, 2008). Accordingly, the concept of "conduct" refers to different meanings, such as leading or guiding. It can also relate to conduct of oneself in a self-directed way according to certain contexts and norms (Fejes, 2006). Foucault (2003, p. 237) asserts that "the instrument of government, instead of being laws, now come to be a range of multiple tactics". Dean (1999) interprets this statement by saying that the rationalities of governing involve different techniques that shape people's conduct as reflected through their behaviours, desires, aspirations and beliefs.

According to Dean (1999), governmentality can be examined by problematising the practice of governing in relation to cases under study. In this paper, focus is on problematising of how teachers govern the self in a TBLP. In other words, the study articulates different kinds of rationalities of teachers' self-governance. In a similar vein of reasoning, meaning is relative and interpreted in light of a sociocultural perspective. However, this study does not attempt to identify teachers' subjectivi-

ties. Conversely, it acknowledges teachers' active involvement in expressing their aspirations through their accounts and these accounts can denote some subjectivities and different meanings.

3 Analytical Process

The analytical process of this study focuses on how the subjects (teachers) are self-governed from their own accounts. A subject is utilised in a Foucauldian perspective, where human beings are changed into subjects through a variety of objectification (Simons and Masschelein, 2008). Teachers' "reality" is built through their texts, i.e. their accounts of a topic they developed at the end of a post-graduate diploma programme upon the request from an examiner: "Explain how your group work about ICT integration in education reflects the process of knowledge construction." Altogether, 90 teachers provided individual reports or accounts of about 50 to 60 words each. These reports were scanned through discourse analysis using the Foucauldian notion of governmentality. Accordingly, teachers' accounts were examined as subjects actively participating in the formation of the discourse of knowledge construction in a TBLP. These texts "talk" from the teachers' perspective. They convey teachers' "reality" in relation to time and space. Therefore, I made an interpretation of teachers' interpretations. Furthermore, I tried to identify discourses emerging from teachers' interpretations and how the latter shape certain ways of reflecting about and analysing the rationalities of governing the self as portrayed in the data (teachers' reports). The analysis consisted of exploring technologies/techniques that came into play in the development of teacher self-governance. The following general questions guided the analysis of teachers' reports:

- *What subjects should be governed and what is this subject becoming?*
- *What rationalities of governing the self are constructed in teachers' sociocultural proximity?*
- *What kinds of techniques for teacher self-governance are created in a TBLP and how?*

Without loosening the focus on discourse analysis from a Foucauldian perspective, the analytical process draws also from grounded theory. Interpretation took the form of concepts and relationships. Teachers' reports were grouped and then analysed systematically one by one and team by team. Thus, interpretation was continuously validated through comparisons with incoming reports. I wrote analytical memos that assisted me in keeping record of emerging concepts and their relationships. As incoming reports were analysed, the memos were also compared and similar analytical ideas were organised into themes, i.e. discourses. I cited some excerpts of the material in this paper to substantiate analysis and interpretation. The analytical process evolved in conjunction with the development of the theoretical framework. I continuously related my findings to research conducted by other researchers which help me streamline the construct.

4 Findings

4.1 Self-Mobilisation Through a TBLP Process

Drawing from teachers' accounts, it can be interpreted that the process of knowledge construction, the formation of something new beyond their previous experience, is embedded in the process of learning. Teachers reported that their new understanding was developed through collective efforts and interaction around a real-life project. For example, one of the group members whose project was on "Why does it rain often in Murera region?" argued that they collected information from a sample of people from Murera, the Internet, and from a meteorologist. She concluded:

We confronted our previous experience with information we collected from people and data retrieved from the Internet. We found out that it rains often in Murera because Murera is found in high altitude and is made of high mountains. Hence, mountains make barriers to wind and the latter moves up in the atmosphere. As altitude increases, temperature decreases, which results in rainfall formation.

Through the five components of the process of a TBLP, namely *Planning, Investigation, New solution, Sharing, and Planning the way forward*, teachers become responsible for their own learning. They manage their project work with some degree of autonomy. During this process of creating their own “Solution” (new understanding or a new product), they engage in a meta-cognition resulting from sharing ideas with an external audience.

4.2 Teachers Responsible for Self-Realisation

In a TBLP, teachers consider themselves to be lifelong learners. Teachers’ reports show that their involvement in TBLPs allowed them to acquire new skills that could enable them to address their own needs in a continuously changing context. Additionally, their aspirations regarding supporting students in terms of scaffolding their proximity became a priority: they projected helping them to make a diagnostic of their learning needs, formulate their goals, identify their resources (human, financial and material), choose and implement adequate strategies, and evaluate the results of their project works. As an illustration, a member from a group that worked on “Savings at school through the formation of clubs” wrote the following:

The project has created knowledge into students about the importance of cooperatives and collaboration for unifying energy and the importance of savings. Knowledge constructed from this project can help individual students in the future by initiating their own projects starting by savings and then investing money for revenue generation.

Therefore, teachers’ desires in a TBLP go beyond the school settings and project students in a real-life experience.

4.3 Entrepreneurial Self-Management

By analysing teachers’ accounts about their experience with TBLPs, it becomes clear that they placed project works in a business world. They considered their projects to be a means of learning creative and productive skills that could generate some income. The following excerpts are illustrative:

We decided to use new knowledge to teach our learners. We gave advice to our group members and classmates from Murera region to form farming cooperatives that aim to grow crops which need enough rainfall in order to get better agricultural production. We decided to communicate with our community and the Rwandan community by creating a website of our group where this new knowledge and other project works can be found.

Another member from a different group reported:

The project has generated some income and it was presented to the school stakeholders as one of the means to address students’ financial problems. Thus the school has fewer problems compared to the previous situation. In general, there was some socioeconomic change to group members in particular and to the school and the region at large.

It can be concluded that teachers regarded themselves as human capital that could contribute to creating some income and productivity. Thus, the teachers’ role becomes that of organising learning conditions so that both individual and societal fulfilment can be achieved.

5 Conclusion: Capitalisation of Learning Project

Drawing from the findings, TBLPs imply that school and real-life experience are intertwined. Learning in a TBLP is geared by a purpose to meet teachers’ intrinsic needs and to tackle a real problem of their students or the community with a long-term solution. For example, some teachers explained that understanding the reasons why it rains often in their region can lead to advising farmers to cultivate crops that require more rain. Another group of teachers found out that practising saving was not only a topic to study but also an innovative solution to address student financial problems. In other words, socioeconomic problems are framed within a learning project framework. Project work portrays a

mechanism to enable both teachers and learners to become a major force of production of value-added products and/or services. Instead of acting as a direct supervisor of knowledge production, facilitators (teachers), experts, the community, and peers contribute to the development of productive and employability skills and competencies. As an illustration, the group working on rainfall in Burera interacted with a meteorologist during their investigation and after developing their solution. Not only had the group gained exposure to the specialist discourse and raised their thinking to a higher order, but also they became confident about their solution. Thus, teachers can become, at the same time, responsible for self-actualisation and entrepreneurial self-managers of their learning as lifelong learners. Consequently, the TBLP process seems to be a pedagogical approach and a means of capitalisation of learning, whereby teachers are regarded as part of human capital, the pillars for socio-economic development and productivity. The findings reveal that this approach can be used as a pedagogical approach in both generally and vocationally oriented disciplines.

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Session 14

Challenges and Strategies of VET in Emerging Countries: Insights in Africa and Asia

TVET and the South African Democratic Developmental Ideal: Plausible Rhetoric, Creative Tinkering or Radical Revisioning

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Abstract: This paper explores the role of TVET in South Africa and its capacity to respond to a democratic developmental and inclusionary context. It argues not only that the road achieving real and positive impacts is accompanied by some potholes, but also that the conceptualisation and design considerations need to be radically overhauled for TVET to make a meaningful contribution to the espoused policy goals of inclusive democratic development. While the rhetoric is plausible, the creative tinkering of the system is unlikely to lead to radical and transformative revisioning responsive to national needs.

Bibliographical note:

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1 Introduction

Education and training are central to the establishment of ideals of a democratic developmental state (Edigheji, 2010). Indeed, it is argued that without a robust education and training system that allows widespread access to sustainable livelihoods and productive work, the possibilities of realising national social development objectives is unlikely to succeed. In this regard, the effective establishment of a vibrant and robust post-school education and training system in general, as well as effective Technical and Vocational Education and Training (TVET) in particular, is an absolute *sin qua non* for an effective Democratic Developmental State (DDS) (Akoojee, 2010). Furthermore, national policy proposals have reinforced the role of education, training, growth and jobs being created in the context of a developmental state. Any commitment to resolving the poverty, inequality and unemployment challenges in South Africa must, therefore, pay serious attention to the TVET sector.

In this paper, I explore the current purposes, roles and functions of TVET in current South African policy with a view to identifying the extent to which it is directed at responding to key elements of 'responsive and inclusive developmentalism', i.e. development that is 'responsive' to key elements of the South African social, political and economic challenges and 'inclusive' in terms of ensuring that benefits accrue to everyone, especially those most economically vulnerable and socially excluded in society.

2 The South African Context

The myriad challenges faced by the South African state include poverty and inequity, with considerable unemployment as a consistent feature of the post-apartheid socio-economic context.¹ Unemployment, especially, has been rampant, with the official figure of 5.5 million unemployed and 14.8

¹ The latest unemployment figures (first quarter of 2015) have recorded the highest unemployment of 26.4% since 2003 (when it was 30%) (StatsSA, 2015).

million not economically active of an estimated working age population of 35.8 million (StatsSA, 2015). This is perhaps made more serious by reports of a ‘more realistic’ expanded rate of unemployment of 36.1% (and 8.7 million unemployed). The lack of economic growth (reduced to 1.3% from 4.1% in the last quarter of 2014) suggests that this is not likely to change in the near future unless some real changes are effected. Brought on by a ‘power crisis’ that is steadily eroding any prospect of growth likely to be a catalyst for job creation, the ‘discourse of skills shortages’ provides the basis for some more acute attention to skills and their impacts. In this context, the skills deficits that have not been resolved by the post-apartheid government provide a particularly serious challenge for education, training and work opportunities in the formal sector.

There has not been any shortage of policy proposals to respond to the challenge. The role of technical and vocational skills has always been at the forefront of these as a means by which more people can be rendered employable. While the resolution to formal employment rightfully lies outside of the education and training realm, the responsibility of education and training to respond meaningfully to national skills development challenges has been identified as critical to any national developmental solution. Thus, the National Development Plan (NDP), a key policy instrument designed to chart the path for a better future developmental trajectory, identifies three ‘priorities’ in the achievement of its objectives:

- Raising employment through faster economic growth;
- Improving the quality of education, skills development and innovation;
- Building the capability of the state to play a developmental transformative role (National Planning Commission, RSA, 2012, p. 27).

The developmental path to achieve these goals might still need to be crafted, but the central role of skills in its relationship to job creation and the role of a developmental state have therefore been recognised at the highest level as a central mechanism for resolving these national challenges. Notions of development have therefore to be (re)interrogated, as the following section illustrates.

3 The Democratic Development State Discourse

The concept of development has long plagued academics. The dominance of the Rostow (1960) model, in which societies were expected to pass through stages of economic growth from ‘traditional society’ to ‘high mass consumption’ entities, has long dominated the development discourse (Rostow, 1960). This ‘staged’ notion of development has been found wanting. As a decidedly economist perspective, it is by a view that suggests that the rest of the world could simply mimic the advanced capitalist entities at the time, from agrarian to industrial, and by extension to the networked society (Castells and Cardoso, 2005). Central to critiques of this model and its ‘human capital’ element is the unquestioned role of growth in this trajectory (Piketty, 2014). The rapid rise of transition economies, especially current developments in China and South-East Asia, which presumably bypassed these stages, has underscored the importance of different ways of thinking about development and the economy. However, Thandika Mkandawire (2010) reminds us that in the aftermath of the neoliberal heyday of Bretton Woods and the Washington Consensus era of the 1990s, “development is a deliberate and international process of economic transformation, as opposed to simply a result of the blind forces of the market” (Mkandawire, 2010, p. 60).² Clearly, the era of the ‘one size fits all’ recipe, even in what was considered an empirical, non-contested terrain of ‘objective’ development, is not borne out by the evidence.

While development has important economic roots, there is a need for widening its perspective to include social and political elements. The alternative view is based on one that is more socially

² Interestingly, even the World Bank has also admitted that “...there is no unique set of rules....sustained growth depends on key functions that need to be fulfilled over time...we need to get away from formulae and the search for elusive best practices and rely on deeper economic analysis to identify the binding constraints on growth” (World Bank, 2005, p. xiii).

appropriate — one that is both responsive (to particular national contexts) and inclusive (to various social groups, especially the most economically vulnerable and destitute). In this regard, the need for ensuring that the benefits of development are shared amongst the populace must rank as an essential element that needs to be considered.

Technical and vocational education has been ascribed a special role in development, described as the ‘handmaiden of the economy’.³ Its close association with the industry and economy has led it to be responsible for many of the economic challenges in most countries. It is no wonder that it has been recently described as a ‘detritus of an industrial era rather than the handmaiden of a new economy’. The economist discourse to which it is associated clearly needs to be redefined. The economist notion of development to which it is associated therefore needs some radical review. It needs to be reoriented to be both responsive and inclusive to the needs of the wider community. This does not mean that the interest of the economy is subverted, but that the economy becomes a subset of wider societal interests. It does suggest that ‘people’ will have to be prioritised over ‘profits’.

The role of TVET, as one expected to accompany, or prepare for, the various stages of economic growth to which developing nations were expected to pass, thus clearly needs to be reviewed. The TVET system thus provides skills for lifelong learning and skills for sustainable livelihoods necessary to ensure that development is both responsive (to unique contexts) and inclusive for those most in need of them.

4 The TVET White Paper Proposals

In South Africa, the Higher Education Ministry, in its efforts to expand and widen participation of youths emerging from the schooling system, has placed considerable emphasis on TVET. Indeed, the policy document released by the ministry in its White Paper on post-school education and training publicly espoused its intent towards the ideals of a developmental state: “...(the paper intends to) guide the DHET and the institutions for which it is responsible ...to contribute to building a developmental state with a vibrant democracy and a flourishing economy” (DHET, 2013, p. 4). The potential for placing the long-neglected sector at the forefront of development is to be celebrated for its bold commitment to intermediate skills.

Thus, the commitment in which the TVET system needs to do more than enable production is explained by the view that it “...should not only provide knowledge and skills required by the economy. It should also contribute to developing thinking citizens, who can function effectively, creatively and ethically as part of a democratic society. They should have an understanding of their society, and be able to participate fully in its political, social and cultural life” (DHET, 2013, p. viii). This is, however, undermined by its narrow and exclusionary economist perspectives that dominate its pages.

Two areas, in particular, will be explored in this work: the purpose of the TVET system and the way in which expansion is envisaged. Each is discussed below.

4.1 Purpose

With regard to purpose, the discourse of the White Paper (2013) is one that at the outset appears as if it incorporates a range of TVET purposes that go beyond the formal labour market. It states at the outset that it is directed “...to prepare workers for the labour market, or to enable individuals to earn sustainable livelihoods through self-employment or establishing a company or cooperative” (DHET, 2013, p. 13).

It is evident, however, that the labour market purpose is the primary one. The paper points out elsewhere that “...since the main purpose of the TVET colleges is to prepare students for the workplace and/or self-employment, it is essential that they develop and maintain close working relationships with employers in their areas of study (DHET, 2013, p. 16). It proposes further that the ‘close partnerships’ between colleges and employers will assist the colleges to locate opportunities for

³ An article in *The Economist* (Aug. 23, 2014), however, has described the decline in the sector as ‘detritus of an industrial era rather than the handmaiden of a new economy’ (see <http://www.economist.com/news/business/21613279-retooling-vocational-education-got-skills>).

work-integrated learning and help them to place students when they complete their qualifications” (ibid.). Elsewhere, it is also pointed out that the main challenge faced by many nations today is that “too few young people and adults are currently able to develop the skills, knowledge and attitudes they need for today’s changing world of work”. Citing a UNESCO study (2012), it points out that in South Africa, TVET provision is ‘poorly articulated with labour market demands and ...not contributing towards socio-economic development needs as much as expected’ (UNESCO, 2012, p. 5).

This discourse may resonate with what McGrath (2012), quoting Giddens (1994), argues is a narrowly economic and productivist approach to the TVET system. The domination of a human capital approach is done at the expense of the social and equity components of the purpose of TVET, although the reference to those excluded and vulnerable groups is presumably prioritised. Thus, the human and equity elements are present, but relegated to the periphery.

4.2 Expansion and Diversification

The White Paper emphasises expanding the post-school system by ensuring that colleges are responsive to those emerging from the schooling system. While the issue of expanding the TVET sector appears to be a laudable policy ideal, this is undertaken as almost devoid of context and purpose of what these colleges are expected to do. The numbers game is played to the exclusion of the unique features of this sector. Thus, the aim to expand TVET headcount enrolments, from “just over 345 000 in 2010 to an estimated 650 000 in 2013 ... (reaching) one million by 2015 and 2.5 million by 2030” (DHET, 2013, p. 12), is not an unlikely target.⁴ The relationship between the offerings at the TVET and its relationship to gainful and sustainable employment or self-employment is perhaps far more elusive.

It does appear that the paper has ignored the current context in which TVET colleges find themselves — whether it be in terms of governance, curriculum, teaching/learning deficits or resourcing. The need to enable colleges themselves to undertake radical review of their offerings to respond to community needs appears to be undermined by a blind commitment to expanding the college campuses. In addition, while quality considerations clearly need to take centre stage in the quest for expansion, there is a need to ensure that the TVET college learner cohort is inclusive — to include those employed and unemployed adults. The proposal to separate the post-school learners from the other TVET sectors, while underpinned by principles of diversity, tends to isolate the different sectors to which colleges should be responsive.

5 Conclusion

It is contended that the South African notion of developmentalism as reflected in the TVET policy context has, in fact, been derived from a traditional notion of economic development, based on an economist model which promises jobs for all, naturally occurring as a result of the skills developed. The post-school focus of TVET also hampers the full potential of the TVET system to be responsive to the needs of all, including the employed and those outside of the labour market seeking to be meaningfully engaged.

The reality of South Africa’s high unemployment, on the one hand, and the often touted skills shortages, on the other hand, suggests that a radical new role for the TVET college sector is required, which takes communities as a starting point, as the basis for engagement. The jury is out. While the rhetoric is plausible, the creative tinkering has not resulted in radical revisioning for the benefit of all.

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Changing VET Scenario in India

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1 The Framework

Conceptually, education and the world of work remained apart in most of the countries. This led to the academic environment remaining detached from practice (Anuma, Manish and Towski, 1995; Stvenson, 1995; Muskin, 1997; Tabron and Yang, 1997 – Koln paper). Tachler (2009) argued that channelling the learning process to the world of work would limit the very purpose of imparting education. The debate during the last 10 years has, however, shifted to the perspective of public education as an industry (Donaldson, 2006; Clark, 1998; Pauly et al., 1995; Sodhi, 2014). Despite the emphasis on vocational education, a recent OECD study (2012) has pointed out that it has tended to remain separated from the markets, except in Germany. Also, there has been a debate on what kinds of VET training programmes lead to employment. Meager (2009) points out that the evidence suggests that there appears to be an emerging consensus that job broking and matching services, information advice and guidance measures along with some kind of targeted subsidy schemes have the most positive impact on out measures.

2 An Overview

Current skills landscape in India: Out of the total population of 1.31 billion, about 700 million are the working-age population. Of these 700 million, only 200 million are graduates and the remaining 500 million do not figure anywhere. Fifty-eight per cent of the population are below the age of 30 years. Twelve million people are entering the workforce (FICCI, 2011) and less than 10% had access to training (OECD, 2011). The formal skilling in India is just 2% of the total workforce, while about 8% have received vocational training while being on the job. Also, against 90% of the jobs which require training, only 6% of the workforce receive any form of training (CII, 2009). Various studies have highlighted skill gaps in different sectors in India (Mehrotra, 2013; Jamal and Mandal, 2013). NSDC had estimated an incremental requirement of 347 million skilled workers in 21 high-growth sectors by 2022 (www.nsdcindia.org, 2014).

3 VET Issues, Initiatives and Analysis

Issues related to skilling in 2009 were very complex. These have both the quantitative and qualitative dimensions (World Bank, 2007; IAMR, 2010). Firstly, there is an overarching presence of the State in the VET space. This issue has been a subject matter of debates in terms of its impact on the outcomes of technical training (Greinert, 1998; Green, 1995; Nelson, 2007; Niemeyer, 2007; Pilz, 2012). Secondly, capacity of skill development was totally inadequate compared to the need. Thirdly, vocational education's status was very low in the social hierarchy of occupations and least inspirational. Fourthly, quality of training was much below the expectations, and the course curriculum, teachers, and infrastructure were totally outdated. Fifthly, quality assurance and certification procedures were at a nascent stage of development and the existing ones were ineffective. Sixthly, training was being provided in the old occupations and was not in tune with the demands of the new economy and emerging occupations. Finally, industry involvement was minimal.

Government Initiatives

It was this background which saw the government launch an ambitious nature of the plan of skill development in 2009 to provide vocational education to 500 million persons by 2020. This initiative was launched with a three-tier structure of the National Skill Development Agency (NSDA) with the Adviser to the PM as its head. The National Skills Coordination Board of the VET endeavours in the public and the private sector, for which a special agency called the National Skill Development Corporation (NSDC) was set up with the target of providing vocational education to 150 million persons. The rest were to be provided training through 21 ministries of the government of India.

As of now, VET is being provided by the National Skill Development Agency 21 central ministries and many in the state governments, Sector Skills Councils (SSCs), National Council of Vocational Training (NCVT), All India Council of Technical Education (AICTE), Central Board of Secondary Education (CBSE), National Institute of Open Schooling (NIOS), and Quality Council of India (QCI). The training by the government is being largely carried out by the Ministry of Labour and Employment (MOLE), Ministry of Human Resource Development (MHRD), and Ministry of Rural Development. The private sector has been led by the NSDC, which was set up in the Public–Private Partnership (PPP). It funds private sector skills training providers to set up centres that can train people for employability in various high labour demand sectors. It has thus far set up 33 SSCs, which are bodies to identify current and projected skill gaps, provide a delivery mechanism, and support the standardisation of training and certification requirements across industries. Each SSC acts as an intermediary between stakeholders and industry. NCVT, AICTE, CBSE, NIOS and QCI are the regulatory bodies for education and skill development.

In continuation of the efforts of skill development, the government unveiled the new National Policy for Skill Development and Entrepreneurship 2015 under its National Skill Development Mission, and rolled out on an all-India basis the flagship scheme, Pradhan Mantri Kaushal Vikash Yojana (PMKVY). The Yojana is a demand-driven, reward-based skill training scheme which will incentivise skill training, by providing financial rewards to candidates who successfully complete approved skill training programmes. Along with other initiatives of VET, it will, for the first time, provide skills to young people who lack formal certification, such as workers in India's vast unorganised sector, through an initiative known as 'Recognition of Prior Learning' (RPL). These young people will have a chance to be assessed and certified for the skills that they already possess. This task will be taken up by the Ministry of Skill Development and Entrepreneurship, which was created last year with the main objective of co-ordination of all skill development efforts across the country, removal of disconnect between demand and supply of skilled manpower, building of new skills and skill up-gradation, and encouragement in entrepreneurship.

During the last six years, substantial progress has been made towards the quantitative and qualitative aspects of skill development. There has been a sufficient push in the direction of increasing the capacity of training in terms of the number of ITIs, which increased from 5114 in 2006–07 to 11,964 by September 2014 with a seating capacity of 16.93 lakhs (MOL, 2014). The growth in the numbers has been equivalent to those set up during the last 50 years. Additionally, many existing craftsmen training centres have been allowed to function like ITIs by introducing another shift in them. Twelve new ITIs have been set up in the public–private mode and another 27 will be added in the second phase. With these efforts the total capacity of vocational education and training would increase up to 25,000 institutes. The government has also been signing the Memorandum of Understanding (MOU) to provide autonomy to ITIs in particular reference to flexibility to design training programmes at ITIs in a manner in which the youths are skilled according to the specific needs of the industry. Some recent MOUs by the Ministry of Labour and Employment with Tata Sons, Flipkart, Raymonds and the Gujarat Industrial Power Company Ltd (GIPCL) are an example of this.

Study of the Upgraded ITIs Through Public–Private Partnership

ITIs by way of their historical presence across the country, therefore, have been given a key role to play in achieving the objective of skill development, training most of the 350 million along with increasing their number. It was imperative to take up the journey of upgrading ITIs with the involvement of industry. A phased programme beginning in 2006 of upgrading 1396 ITIs was taken up pri-

marily through funding from the government. The scheme of up-gradation involved formation of an Institute Management Committee (IMC) which is headed by the industry partner. The IMC is registered as a society to enable its independent functioning. The Central Government grants an interest-free loan of Rs. 25 million directly to the IMC and it is given financial and academic autonomy. ITIs are only selected for up-gradation if they are able to get an industry partner.

The study was conducted in 120 ITIs all over India out of the 600 upgraded ITIs, and covered aspects of their functioning, utilisation of funds, KPI (capacity utilisation, academic performance and placement success), and perceptions regarding the impact of the scheme.

Some of the findings are as follows:

- There were 13 major trades in which training was imparted. The highest share of ITIs (16%) is associated with Automobiles/Engineering Products, followed by Electricals and Electronics (14%), and Education, HRD Consultancy and Training Services (12%).
- While the industry partners have been active in the IMCs, they have themselves not provided any financial support for the upgraded ITIs. However, they were receiving support of faculty, training of the ITIs faculty, and placement of students. The support provided for placement was the highest, as almost half of the industry partners provided placement services to the students.
- The industry was not enthusiastic about providing on-the-job training, as about one third provided the support. However, this support was very high in states like Tamil Nadu and Gujrat (80% provided this support).
- Fund utilisation was almost as per the norm for 70% of the selected ITIs, and funds were utilised for up-gradation of physical infrastructure. A fifth of the funds were the utmost of the funds.
- The gross intake capacity of the upgraded ITIs has increased by about 60%.
- The enrolment ratio was almost 90% at the all-India level, although some states, e.g. Haryana, Madhya Pradesh and Karnataka, showed a much lower enrolment ratio and Delhi, Maharashtra and Odisha showed a 100% enrolment ratio. This is a definite improvement compared to the enrolment ratio of the past and the non-upgraded ITIs.
- The ITIs are totally dependent upon the government for funds. This was the case of the upgraded ITIs. However, these ITIs were able to generate funds on account of consultancy, training and short-term courses.
- While the industry partners claimed to have provided placement support, the placement ratio has almost remained the same as that of earlier years at 66% of the passed-out students with a marginal increase in the salary.
- KPI indicators in terms of infrastructure facilities of having a placement cell, computer and Internet facilities are now available in a much larger number of institutes as compared to earlier years.

The scheme of up-gradation of ITIs has been the need of the hour. The infrastructure has been upgraded and those adopted by industry have seen some qualitative change. However, the number upgraded are very small compared to the need. Their implementation is taking much longer than planned, largely because of bureaucratic delays in decision making. They remain under the government's control, and with their out-of-date faculty, fee patterns, etc., it leads to impediments in achieving the objective of providing employment outcomes. Also, there are issues related to the outdated machinery and the location of ITIs in the rural areas (half of the ITIs are located in the rural areas) with little industrial clusters around them. Their success also depends upon meaningfully reaching the vast majority of workers in the informal sector, as skilling them is the key to the programme of skill development in India (Sodhi, 2014). ITIs are also operating from the rented premises, the attitude, knowledge and skill of the vocational training heads, and the faculty remains unchanged. Women as a group have not received special attention in the skill development agenda of the government. Many private players, though, have accomplished positive results (Sodhi, 2010).

Industry response has been less than encouraging in up-gradation of ITIs. An otherwise too private ITI operator seems to be in a hurry to upgrade them. A case in point is also the lacklustre demand of the government's scheme of re-affiliation of the private ITIs, which are 5 years old, with the basic idea of looking at their syllabus, machinery equipment and other aspects of vocational training. Six thousand ITIs are eligible for re-affiliation. However, only 400 have so far applied, implying that the rest have not made any fresh investments in qualitatively upgrading themselves, with the result that they continue to provide out-of-date vocational training. The government has launched another scheme of up-gradation of ITIs but its response has also been very low despite the fact that gradation will enable them to charge a 20% extra fee.

National Vocational Education Qualification Framework (NVEQF)

The NVEQF, which was formally launched in 2012, is a very significant endeavour of the government and it attempts to mainstream skill education formally from class X onwards with multiple entry and exit points. Its key elements of the NVEQF are to provide: *national principles* for providing vocational education, leading to international equivalency, multiple entry and exit points between VE, general education and job markets, and progression within VE; transfer between VE and general education; and a partnership with industry/employers. Salient components of the NVEQF include: National Occupation Standards, Multiple Pathways, Recognition of Prior Learning, Industry Engagement, Competency-based Curriculum, Credit Framework, Credit Accumulation and Transfer, Capacity Building, Sharing of Resources, Accreditation of Skill Knowledge Providers, Assessment and Certification, and Quality Assurance. A pilot of the programme was conducted in one of the states and covered levels 1 to 4 of the NVEQF, i.e. introduction of vocational education from Class IX to XII in four industry sectors, i.e. Information Technology (IT)/Information Technology Enabled Services (ITeS), Automotive, Security, and Retail. Some of the significant learning's emergence out of the pilot includes introduction of vocational education at the secondary stage, integration of vocational education with general education, factoring in the cost of engaging the Sector Skill Councils/industry/employers for training, assessment and certification, offering vocational subjects as an addition at the secondary stage and as a compulsory elective at the higher secondary stage, flexible pool of human resources for delivery of courseware and training of students, restructuring training of teachers/resource persons, enhancing funds for curriculum development, convergence with infrastructure available in ITIs, polytechnics, etc., increase in funding for books, software, etc., deletion of the provision of setting up production-cum-training centres, convergence with the other schemes already under implementation at the secondary stage, etc. While the NVEQF has now been launched all over India, it is still at a very nascent stage.

4 National Skill Development Corporation

Private sector vocational training is largely the responsibility of which has a mandate to perform multiple functions. In its journey of enabling the private sector to provide training, it has given a special focus to the growth sectors, conducted skill gap studies to create a knowledge database, provided funding of vocational institutions, created an ecosystem, signed MOUs with industry and universities to provide educations to both the workers and the students, created an enabling environment through tie-ups with third parties for student funding, made skilling aspirational through a focused media campaign, set up sector skill councils, and incentivised industry through an important programme called STAR and other measures such as giving a thrust to the adoption of the Swiss model of vocational education and training in India, which encourages school students to pursue apprenticeship in any chosen vocational field so that they are industry-ready when they graduate. In the backbone of this vocational training is the cooperation between trade associations, educational institutions, government bodies, and companies. Several companies are willing to offer practical training to students. A study from the National Skill Development Corp. (NSDC) and Accenture found that private funding and public-private partnerships are helping India to overcome two of the largest challenges to vocational education training: an inadequate infrastructure and a shortage of job offers (Mint, 2013). The research shows that initiatives funded by the NSDC and private sector organisa-

tions have achieved high placement rates for trainees. About 50% of those who complete training receive job offers within three months. These schemes recorded higher placement rates than similar initiatives, and those who leave a job within a month of their hiring cited disappointment with the job profile or pay.

The NSDC's most important endeavour is the SSC setting up sector skill councils which will strive to complement the existing vocational education system for the industry sector in meeting the entire value chain requirements of appropriately trained manpower in quantity and quality across all levels on a sustained and evolving basis. Thus, the SSC of every industry sector must have the active support of all major players of that sector, in order to be successful in its role (Kumar, 2013).

Whereas the NSDC has done a valuable job of setting up 33 SSCs, their effectiveness has been hampered by limited ability to leverage synergies and common implementation structures preventing progress for all (Darmora, 2015). Moreover, its partners have not been able to achieve the stated targets.

A special mention may be made of the STAR programme, which integrates standards, training, assessment and reward. Chenoy (IJIR, 2014) is rightly of the view that this programme has the potential to address the key issues that are currently being faced by the skill development eco-system in India.

The NSDC has also been studying international models of VET and has entered into MOUs. The recent one has been the Swiss model of vocational education and training in India. This model is in operation in a few states of India and companies such as the ABB, ACC and others have been enthusiastically participating in it — the numbers trained are few. However, the main concern here is scalability and involvement of industry in this meaningful endeavour.

Industry Response

The response of industry is much less than expected and is by the larger and well-established companies. The PPP model has been ineffective, has seen implementation delays, and has largely been a failure because critical decision-making elements, such as staffing and course fees, have been retained by the government. This is also substantiated by the fact that there have been very few takers of the government scheme of training certification by the Director General of Training and Development, in which the industry has the flexibility of developing the course curriculum and other aspects. At the heart of the issue the Indian entrepreneur has been providing VET to trainees for whom most of the cost has been paid by the government.

Training of Trainers

There has not been much progress in improving the quantity and quality of trainers/teachers in the ITIs. While there were about 2000 trainers, the numbers required were 10 times more than that. The government has initiated schemes, including gearing up the Central Training Institute, for the challenge but the numbers trained are totally insufficient. Bureaucratic hurdles, delays in sanctions and insufficient funds have been responsible for the slow progress of training of trainers.

Assessment standards have been created through the Modular Employment Scheme-Skill Development Initiative (MES-SDI), Standard Training Assessment and Scheme (STAR), and third-party assessment by some of the programmes. However, as the British Council–ILO study (2014) points out, the funding for these programmes remains very low, there is little evidence that assessments are by reliable, valid and comparable agencies and different schemes and agencies, and the third-party assessment lacks quality assessors.

5 Concluding Remarks

The launch of PMKVY in July 2015 points to the continued policy emphasis on vocational education and skill development. It integrates key features of the earlier programmes and learning from the experiences of the last six years. It seeks to address key obstacles to skilling, including the low aspirational value, lack of integration with formal education, lack of focus on outcomes, low quality of training infrastructure and trainers, etc. Furthermore, the policy seeks to align supply and demand for

skills by bridging existing skill gaps, promoting industry engagement, operationalising the quality assurance framework, leveraging technology, and promoting greater opportunities for apprenticeship training. Its newly created Ministry of Skill Development and Entrepreneurship thrust is to co-ordinate all skill development efforts across the country. While the skill development programmes have, by and large, remained with the 21 ministries, the new ministry has been attempting to bring some of the skill development initiatives under one umbrella. In April 2015, two verticals from the Directorate General of Employment and Training (DGET) — DDG (Training) and DDG (Apprenticeship Training) of the Ministry of Labour and Employment — were transferred to the ministry.

It is hoped that the ministry looks seriously at the current issues of capacity augmentation, achievement of the laid-down qualitative and quantitative targets of skilling 500 million persons by 2022, greater involvement of industry, providing a huge push to the NVEQF endeavours, creating a way forward for the effectiveness of SSCs, improving and standardising skill assessment and certification processes, and integrating learning from the international experiences, especially the German dual system of VET.

While the agenda of skill development is gigantic and it is difficult to lay priorities, PMKVY must address three crucial issues on a war footing. Firstly, the skill development programme must devise means to train 240 million people who are either illiterate or have attained elementary education in the informal sector. Such persons are unable to take advantage of the scheme of recognition of prior learning. Secondly, the programme must give a special push to the gender perspective of skill development, as a large proportion of women are illiterate and are socially and economically disadvantaged. Thirdly, it must provide a quantum jump to the aspirational value of VET among youths.

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People Skill Empowerment towards Sustainable Employment: An Integrated and Community-Oriented TVET Framework for Rural Areas in Iran

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Abstract: Skilled human resources are one of the major binding constraints to sustain high economic growth in Iran. The country, therefore, needs to invest significantly in human capital to reap the benefits arising from economic advancements demanding critical TVET reformation, expansion and innovative strategies. For this, the Technical and Vocational Training Organisation of Iran has taken some innovative initiatives not only to restructure the country's TVET system but also to provide inclusive training opportunities which include youths and young women in remote rural regions. The paper, however, explores the major features of the Iranian Government's new initiative: skill-empowering rural and less developed areas with sustainable employment approaches. It aims to discuss theoretical bases, policies, and practical aspects of this newly launched TVET scheme focusing on the skill empowerment of youths and women for employment sustainability in rural and less developed areas in Iran. It also tries to examine the scheme's possible outcome and obstacles in practice, followed by some suggestions and lessons learned from the framework implementation. It presumably gives some insight which can be shared with TVET policymakers and practitioners from other societies.

Bibliographical notes:

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1 Introduction

Education and training are considered one of the most critical and strategic components in the development process, which has been given top priority by policymakers all around the world (Azizi, 2013). As a result, skills development is an essential element in improving the employability and potential productivity of unemployed individuals, and can be an important tool for reducing poverty and exclusion and enhancing competitiveness and socio-economic engagement. Education and skills also can enable poor and vulnerable groups, such as persons in rural communities, persons with disabilities, or disadvantaged youths, to escape the vicious circle of inadequate education, poor training, low productivity and poor-quality jobs with low wages. Consequently, skills improvement and empowerment have been seen as an important tool to improving rural productivity, employability and income-earning opportunities, enhancing food security and promoting environmentally sustainable rural development and livelihoods.

In addition, UNESCO has adopted a strategy for TVET which guides its activities in relevant programme areas from 2010 to 2015. This TVET strategy seeks to promote TVET and skills development for the world of work within a broader framework of lifelong learning. As such, it states that 'in a globalized world, education and training, as part of a process of lifelong learning, are central to reducing poverty and significantly increase the likelihood of finding decent work or of generating income through self-employment. In the current macro-economic and financial environment, investment in TVET is therefore an instrument to accelerate and sustain economic recovery' (UNESCO, 2009).

As a result, the role of technical and vocational education and training (TVET) is vital to economic growth and social welfare. This is because TVET supports economic competition, innovation and growth, on the one hand, and provides opportunities by which people are empowered and enabled to improve their skills and employment possibilities, on the other hand. In addition to these, TVET can be considered an effective means of enhancing communities' development bases and capabilities (Azizi and Nasiri, 2014). This is why it has been agreed upon widely that no one should be left behind in accessing an effective and efficient TVET. In fact, skills training combined with access to assets could bring disadvantaged people greater prosperity.

2 TVET Towards Employment Sustainability

Technical and vocational education and training (TVET) plays a key role as it identifies the factors of change, the skill and training needs, and the related stakeholders. Furthermore, it connects the small and medium enterprises (SMEs) with the vocational training and provides access to employment for vulnerable groups and young unemployed people. Therefore, there is a need for high-quality VET, which is regularly updated while incorporating the latest innovations and developments. TVET systems have to accept that the whole economy is affected, but some sectors experience significant change. Thus, there is a need for greater coherence in co-ordination among policy recommendations which target the modernisation of the TVET systems and improvement of programmes targeting skill development (Larsen et al., 2014; CEDEFOP, 2013). Nevertheless, while TVET has stimulated extraordinary economic growth in some countries, it has failed to live up to expectations in others (Catts et al., 2011).

At the same time, there can be calls for a new approach to technical and vocational education and training in response to economic changes, continued technological change, increased demand for sustainable energy use, and social and demographic changes (Catts et al., 2011). Therefore, in light of rapid technological change and the emerging knowledge-based and greener economy, and following the increasing efforts to comply with societal demands in recent years, TVET systems in many countries have been reformed respectively (Andersson et al., 2015; Steedman, 2012; Deissinger et al., 2011; Fuller and Unwin, 2009; Nilsson, 2010). However, as Descy et al. (2009, p. 13) have pointed out, in order to retune TVET systems to contemporary changing circumstances, they need to highlight the following areas for further development:

- (a) achieving high levels of quality and innovation in technical and vocational education and training (TVET) systems to benefit all learners and to make European TVET globally competitive;
- (b) linking TVET with the labour market requirements of the knowledge economy for a highly skilled workforce, and especially, due to the strong impact of demographic change, the upgrading and competence development of older workers;
- (c) addressing the needs of low-skilled and disadvantaged groups for the purpose of achieving social cohesion and increasing labour market participation.

In this regard, a further driver of more integration is "sustainable employment", which concentrates on providing people with the necessary qualifications, labour market experience, and employability aptitudes to maintain employment as well as progress their career (Sofroniou et al., 2014). Indeed, there would be some degrees of differences between countries in terms of their perceptions of sustainable employment and also the programmes they use towards measurements of sustainability (OECD, 2009). The United Kingdom Government has recently indicated that it wants to move to using 18 months in continuous employment as the measure for sustained employment and for payments to providers. Sustainable employment in the United States means providing a permanent and stable job, adequate wages that cover food, clothing, and shelter, full health benefits, and also the opportunity for job advancement for a person or a family (Goldberg, 2005). Despite this, the idea of empowerment has been considered a key concept and an underlying expression widely used in development literature, but not often defined. Based on the World Bank's "Empowerment Sourcebook", this term refers to the expansion of freedom of choice and action, of assets and capabilities to partici-

pate in, negotiate with, influence, control, and hold accountable institutions that affect their lives (World Bank, 2002).

3 TVET Backgrounds in Iran

Formal TVE in Iran started with the establishment of DAR ALFENOON (The House of Techniques) in 1818 (nearly 200 years ago), aimed at preparing skilful staff in different fields and focusing on both theoretical and practical courses. In 1868 the first Technical and Vocational School in the field of industry was established. In 1880 the first Agricultural Vocational School and in 1881 the School of Fine Industries were established. Since that, the country's VET system has been changed and reformed many times. At the moment, technical and vocational education and training in Iran is divided into three levels, as follows:

1. Non-formal Technical and Vocational Training under the supervision of the Ministry of Labour and Social Welfare. This non-formal training primarily trains individuals with minimal formal education for vocational works. These training programmes vary in duration and are usually short (few months).
2. Formal Technical and Vocational Education under the supervision of the Ministry of Education. This education can be substituted for formal secondary education. The TVE programmes proposed by TVE schools offer programmes of 3–5 years, leading to a variety of majors needed in industry and commerce.
3. Formal Higher Technical and Vocational Education under the Ministry of Science, Research and Technology. These programmes offer two years of study after the completion of degree programmes in TVE schools. They can lead to upper university degrees if applicants are accepted in the transfer examinations held annually (TVTO, 2014).

Despite the long history of offering vocational education and training, the rate and number of enrolled students and trainees in both formal and non-formal forms of VET are not acceptable by any means. Currently, 315,761 students at about 700 locations with a staff of 28,000 are receiving formal TVE training. Another 716,000 trainees participate in informal TVE courses offered by the Ministry of Labour and Social Welfare, which include 115 technical training centres staffed with 670 technical trainers (Azizi, 2013). Indeed, these training facilities are heavily located in urban areas and there are no permanent training campuses in rural regions. As a result, private provision of training is growing in response to the limits of public provision. Private providers make up 60% of the training institutions. In this regard, the number of approved private training institutions has grown sharply in recent years.

4 The Initiative of Skill Empowering Rural (ISER) in Iran

In Iran, as a developing country, over 22 million people are living in rural areas, of whom 14.4 million are among the active population. In this situation, women, in particular, are among the most disadvantaged of all people in terms of education and work, many of whom have missed out on basic literacy and numeracy skills and the unemployment rate among the working age population is too high (TVTO, 2014). By contrast, the country's public and private providers of TVET have been extensively established and located in the major cities and other urban regions. Therefore, due to the importance of rural development and improving life conditions and providing equal opportunity for rural people in accessing education and training facilities, Rohani's Administration, in line with its political manifest regarding extending social justice and giving priority to disadvantaged people, has introduced the Initiative of Skill Empowering Rural (ISER) as a new community-oriented TVET framework. One of the most important features of ISER which distinguishes this initiative from other frameworks at the national and international level is the widespread range of social involvements of different societal groups in this framework. This purposeful engagement of key stakeholders, including local religious, social and political leaders, craftsmen, experts and qualified professionals in rural areas, has resulted in a high level of social and cultural responsibility and accountability, which are

necessary for assuring the framework's proposed outcomes. As Figure 1 and Figure 2 have shown, at the heart of this initiative, the role and position of the "Local Board of Trustees" are representing the main responsibilities of the local community in designing, leading and monitoring the project and in supporting the role of local governors.

This second important feature of the initiative is the effective utilisation of a highly advanced multi-functional and portable video-data projector kit by which enriched and attractive multimedia courses can be presented even in far and remote areas. The following are among the main dimensions of this new initiative for skill-empowering rural areas:

1. Community-oriented mechanism for offering a more efficient model of skill needs assessment in rural areas;
2. Revised course standards with an emphasis on the new field of employment;
3. Redesigned and reproduced educational contents, emphasising the use of virtual learning opportunities;
4. Revised process of career counselling and guidance by involving local key informant people;
5. Employing local craftsmen, professionals and experts as TVET trainers.

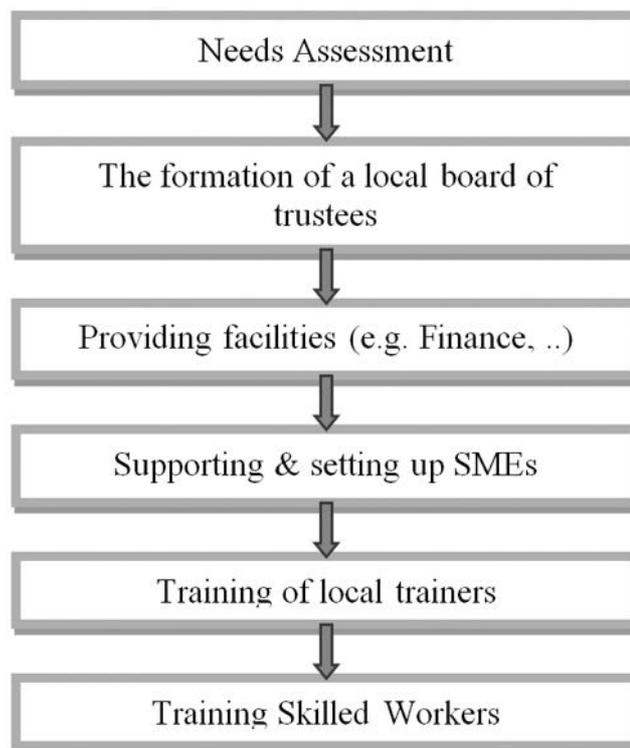


Figure 1: The Process and Steps of ISER



Figure 2: Local Advisory Board

As previously mentioned, a great number of the country's unemployed youths live in agrarian and rural areas and have limited skills and capabilities. Therefore, as with other developing societies, sustainable employment opportunities in Iran in those fields for youths are a growing concern. Consequently, providing effective training bases by which youths and young women in deprived and remote areas can acquire knowledge and skills is critical in forming responses to rural poverty and food security. It is expected, thus, that this project will lead to new ways of promoting rural employment, reinforce policy dialogue on the role of education for rural development, and ultimately contribute to sustainable rural development and poverty reduction. As a result, as with other important fields, investments in education and training are critical to sustainable employment, ultimately improving rural development. Indeed, these investments must be linked to the potential to raise individuals' productivity and income. Accordingly, the essence of ISER lays emphasis on building social capital and resilience in rural communities in which the following aspects have been given particular attention:

- a. Support training and capacity building of rural communities with particular reference to local training capacities;
- b. Enhance the human capacities of rural people via improving individuals in information, education, extension services and learning resources, knowledge and training;
- c. Empower women and small-scale farmers, as well as indigenous people, and facilitate the active participation of vulnerable groups in all aspects of the community's development process;
- d. Foster and strengthen capacities of rural communities for self-organisation for building social capital;
- e. Support and promote efforts to harmonise modern technologies with traditional and indigenous knowledge for sustainable rural development.

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Session 15

Reflections on the Orders of Time, the Ordering of Competencies and the Reflective Practitioners – Preparations for a Post-Growth Economy?

Conceptualizing Time in the Orders of Initial Vocational Education

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Abstract: In my forthcoming dissertation on Initial vocational education I use time as a perspective to approach the social orders of the pedagogy. In study education is framed as an institution regulating both the pedagogy and the time. In this conference paper, my aim is to conceptualize time in pedagogy theoretically. To frame time as a particular order in education, I apply the idea of time as a relation to social practices. This idea is grounded on the thoughts of Barbara Adam and Basil Bernstein. Both theories relate the social with the concepts of context and control. Both support my observations on time as an object of control in pedagogy. Theories presented here were used for classifying and analyzing empirical data on time in observed pedagogy. This analysis indicates that institutions use time both as an order and a controlling device, defining also the social relations of the pedagogy.

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1 Introduction

“In school things often happen, not because we want them to, but because it is time for things to happen” (Jackson, 1986, p. 12).

The perspective I present in this article shows time as an order in and for the pedagogy in Finnish upper secondary Initial vocational education. My aim is first to conceptualize time in education theoretically and second, to look at the social orders of the vocational pedagogy. To frame time as a particular order for thinking, I apply the idea of time as a relation to the social. Theoretically this idea is grounded on the thoughts of Barbara Adam (2008, 2006, 2003, 1995) and Basil Bernstein (1990, 1980, 1971). Concepts developed here were used in my dissertation for classifying and analyzing time in pedagogic practices.

This study is best located in the field of critical sociological education research where the pedagogy, control and order are understood as representing the dual nature of the schooling. In addition to civilizing, the school organizes societies by sorting students out to different positions in society. For vocational education this sorting is already a fact since the elementary stratification is produced in the line of initial education.

Sociologically I am interested in the current idea of the labor. I investigate this in the context of Initial vocational education by joining two theoretical questions. The first is the question of educating labor, and the second is its relation with time. In study I related the pedagogy and practices to the rules and regulations framing the time at vocational education.

For the study I observed time and related practices within one school and one learning program of the restaurant chefs, in Eastern-Finland. In the program there were several parallel classes for me to observe during the years 2009-2011. I also analyzed relevant official documents such as the law, the curriculum and the Labour legislation of vocational education. In addition, I took a year long position as a vocational teacher on the same field of study. I chose ethnography as an approach, to understand how institutions, like Initial vocational education, are organized with and from the rules

and ideologies they present to people working within. As a researcher, my aim was to explicate the rules and practices informing the pedagogy.

The method, thinking, organizing and uses of data were adopted from the institutional ethnographers (Smith, 2006; 1987; McCoy, 2008). Institutional ethnography has established an idea of work as a great deal wider concept than what is used when discussed of paid work. This concept includes all the knowledge, resources and relations that the work in institution presumes but is often left unaccounted. For teacher these accounts define the mode and space of pedagogy. Pedagogy is regulated by the structural and material frames of the institution. In my study I relate these accounts with time and practices in Initial vocational education.

2 Time as practice

In classifying time as a concept, I use a theory of time by Barbara Adam (2008, 2006, 2003). One of Adams' constitutive ideas is that there are multiple alternatives for approaching time. There is for example the natural deceasing of the organic matter. There is the cyclical time of the earth that brings us day and night and the seasons. There are also times internal for the task, time for the generations, time for opening and closing of institutions and times of the technologies. All these have different relation with time. (Adam, 2008, p. 3) At school these different times are framed by the invented time of the clock and the calendar. The key in the succession of this invention is its ability to synchronize actions and create order for the social.

In order to question and challenge our socialization into a specific approach to time, Adam presents time as an in time relation. Relation can be analyzed from a variety of standpoints that Adam calls the timescapes perspective. This perspective takes into account both the conceptual context framing the time and the social uses of time. These uses are for example: timing, tempo, duration or sequence. What we are able to see, however, depends on the temporal modality, the frame of observation. The frame is not given but chosen. The imposed frame determines what we can and do see. (Adam, 2008, p.2)

For my purposes the key in Adams' thinking is that in education the time frame determines also the possible knowledge about time. In my dissertation I question the principles that underpin and maintain time in vocational education. For this I focused on the practices of one basic level vocational program that educates future chefs. Time in my study is analyzed as the frame for vocational education. Time is used to regulate the daily and yearly practices of the pedagogy. It is a frame controlling the pace and tempo for the processes of learning and teaching.

Focus on time as a social practice (and as an educational process) takes the analysis to conceptual matters, social relations and issues of socio-economic equity (Adam, 2003, p. 105). For a future chef the time reckoning, the getting to know temporal processes and rhythmic patterns, is knowledge for practical use. However, it is also knowledge for the structuring, ordering, synchronizing and regulating the social. Knowledge about the possible times brings about the sense of ownership. It gives control for the maintenance and enhancement of power (Adam, 2006, p. 121).

3 Educating the labor

In the question of education I lean on the thinking of Basil Bernstein (1990, 1980, 1971) who suggested that our relation to knowledge is defining our understanding of the world and our possibilities in it. This knowledge is presented in educational codes, the modes of the pedagogy.

Bernsteinian perspective to society is an analytic distinction between power and control, between what is to be reproduced and the form of its acquisition. Bernstein (1971, p. 64) suggested that education necessarily teaches orders of relevance and relations as these apply to persons and objects. Pedagogically, he thought, the school is most concerned in making explicit the fundamental principles of the social relations. He (1971, p. 65) argued that the unquestioned power relations outside the school are represented in the contexts of the education. The social order is brought into the education in its ways of organizing, distributing and evaluating of knowledge.

For Bernstein (1990, p. 33-34) the order in the reproduction of for example cooking skills, is not derived from logic internal to cooking or from the practices of the chefs, but is social (Bernstein

1990, p. 185). The key elements in analyzing the social order are: the system of control, the boundaries it sets up, the justification of ideology sanctifying the boundaries, and the power often hidden by the rest (Douglas 1975, p. 176). The form of the pedagogic practice is regulated by social and refers to specific practices regulating the relations between transmitters and acquirers. The form is mediated in what Bernstein called restrictive (positional) or elaborated (personal) codes and framing.

The concept of codes rests on the idea that the structure of the society and the nature of its relations are a product of social control. It refers to the transmission of the deep structure of a culture (Bernstein 1971, p. 64). The actual control is not in the form, but in its set of human relations. The structures of knowledge (and time) are generated in the social order. Analysing the order means analysing both the form and the relations of the (time) control. (Douglas 1975, p. 174-176.)

In dissertation I applied his early concept of critical pedagogic contexts as a tool for analyzing the observed pedagogy. My aim was to analyze the order and particular targets of the time in the vocational pedagogy. Like Bernstein (1971) suggested, it proved useful to divide the pedagogy theoretically into subcategories. First of these categories was the regulation that sets the frame for the pedagogy. Second context was the mode and the target of the control. Third context was the device, and fourth the mode of relations in the pedagogy. Device is any means or method used to conceptualize the content of the education.

To investigate these I used the current Law on vocational education, the Labour legislation and relevant Program curriculum as data. Some of this data was also available in the Guide for students. The way these regulations and frames were put into practice I studied as a participating observer and as a practicing teacher. The prevailing mode could be deduced from the knowledge I gained as a teacher, but also from the collected data.

4 Notes on time and pedagogy in observed Program of restaurant chefs in Initial vocational education

The two theories of practice by Bernstein and Adam are both dealing with the idea of relations in some specific frame. The nature of social relations is defined in the particular educational frame or modality chosen for this context. This frame determines the nature of regulation. It gives the modes for control and for the relations. Both explain the nature of order and its grounds in relation to the practice. Both theories support also my observations on time as the target of the control in education.

In relation to time, observed vocational education seems to focus on time as a known practice, which means controlling the tempo and synchronizing the individual processes with the ones of the restaurant or the institution. It is also representing this order as the tradition of the chef's occupation. A professional chef (and the teacher) is presented as knowing the time and hierarchy of the field. The best practices are presented as given, not as something one can figure out. Therefore education becomes a disciplining practice controlling presence and attendance. In practice this indicates that Initial vocational education is designed for learning to accept the rules (and ruling relations) instead of learning how to create and develop them.

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High Performance Work Practices, Hierarchical Ordering of Competencies and Educational Mismatch: The Effects on Competency Creation and Destruction

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Abstract: Over the past few years, Nobel Laureate J. J. Heckman has repeatedly tackled the economics of learning (e.g., Heckman, 2000; Heckman, Lochner and Taber, 1998; Heckman, Lochner and Todd, 2003). In reviewing the international theoretical and empirical literature, he came to the conclusion that ‘much learning takes place outside of schools: post-school learning is an important source of skill formation that accounts for as much as one third to one half of all skill formation in a modern economy (this estimate was made in Heckman, Lochner and Taber, 1998)’ (Heckman, 2000, p. 5). Although it is not clear which type of competencies can more easily be learnt outside schools (technical or key/transversal competencies) nor the specific organizational characteristics an environment should have to forge individual capabilities, the incisiveness of this authoritative assertion is nevertheless rather relevant. On a theoretical level, a few authors have previously argued that work activities constitute a significant, albeit indirect, source of (informal) learning: we refer to Arrow’s learning-by-doing (1962) Rosenberg’s learning-by-using (1982), Lundvall’s learning-by-interacting (1988) and, lastly, Cohen-Levinthal’s learning-by-searching (1990). More recently, two explanations have been advanced on the issue. The first relates to the concept that the workplace develops collective attitudes or habits that influence employees, regardless and independently of their personality traits. Workplace attitudes may be the result of management style or of workers sharing common and specific experiences, which set the standards to which new recruits progressively adhere via informal learning (Schneider *et al.*, 1995). Bartel *et al.* (2004) show the existence and persistence of a genuine workplace effect on individual worker perceptions of their role and of the organization, adding to previous studies on the notion that worker attitudes are also strongly correlated to firm performance. The genuine workplace effect has been assumed as such, without investigating its origin.

The second explanation on the origin of informal learning relates to organizational design as an authoritative *source* of stable and socially recognized work practices that employees are *daily* required to perform (Koike, 1994). This is in line with the empiricist and behaviourist approach, according to which the behaviours and capabilities of people (and organizations) are determined by external stimuli (i.e., the requirements of organizational design) as perceived by the senses. This approach is traditionally attributed to the work of March and Simon (1958: 139) and Cyert and March (1963: 118-127), according to whom the behaviours of individuals and enterprises are based on the environment and on experience, experience that is described - in the concept of organizational routines according to Nelson and Winter (1982: 14) - as repetition of the activity, i.e., the work practice.

One of the objectives of this paper is precisely to investigate the role played by workplace organizational design in *inducing* on one side organizational behaviours and on the other, improvements in the competencies expressed by workers. Leoni (2012) particularly focuses on so-called «key» competencies, driven by the idea that one of the firm's most valuable assets is not only, or largely, technical knowledge (since this is codified knowledge that can easily be replicated or transferred), but cognitive knowledge, which is required in diagnosing defects, in problem handling and solving, in interacting with colleagues, subordinates and hierarchical levels, and with customers and suppliers. These competencies would constitute the hidden substratum of technical competencies and appear to be able to influence the acquisition of the visible part of the iceberg (that is, techno-specialist competencies).

A second aim is to test Montedoro's (2004, p. 49) theoretical suggestions according to which key competencies are a crucial ingredient of a behavioural theory of (organizational) learning as they enable learning and activating technical competencies through self-reflectiveness of thought, interactions with others and recursiveness of learning. As such, they constitute a higher-order logic 'class' with respect to technical competencies. In other words, key competencies go beyond the acquisition of operational activities or of a profession: they are the competence of competencies.

A third aim of the paper is to investigate whether an individual's level of competencies can be affected – *ceteris paribus* – by educational mismatch, which involves a twofold situation: overeducation and undereducation. While several studies analyze the effects of overeducation on wages (e.g., Cainarca and Sgobbi, 2012), others focus on career mobility (e.g., Buchel and Mertens, 2004), and others yet on worker satisfaction in relation to the role occupied (e.g., Allen and van der Velden, 2001). De Grip *et al.*'s (2008) is the only study that verifies the effects of job-worker educational mismatch on a set of cognitive skills. In this paper, we go beyond the cognitive skill notion to consider a broader concept, namely, competencies, and investigate whether: a) excess education, which implies prolonged non-utilization of accumulated knowledge, may become obsolete over time, thus reducing competencies; b) lack of knowledge can be bypassed through repeated efforts of dealing with daily problems and situations that challenge the competency frontier.

Econometric results show that key competencies increase when adopting modern work practices and they affect the acquisition of technical competencies; moreover overeducation has a dissipative effect whereas undereducation has a strong positive effect on both types of expressed competencies. The policy implications of wasting valuable human resource competencies are discussed.

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Educating the Reflective Practitioner and Vocational Bildung

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Abstract: In his work *Educating the reflective practitioner*, Schön (1987) discusses some of the challenges in teaching design-like occupations. His work there mostly engages with what might be termed the craft-like aspects of these occupations, ie. the combination of skills, knowledge and perception required to “get it” as he terms it. He makes clear that what he is not explicitly engaging with is the study of how a reflective practitioner also comes to develop: “wisdom in response to ethical dilemmas.” This important area of vocational education as it relates to, and ties in with, education for reflective practice is the focus of this paper. It will be discussed in relation to a case study of the vocational education biography of master craftsman Wolfgang B. taking some examples from his narrative to clarify the close relationship between Schön’s concept of reflective practice and one that will be developed here of vocational Bildung.

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1 Introduction

In his work *Educating the reflective practitioner*, Schön (1987) discusses some of the challenges in teaching design-like occupations (architecture, psychoanalysis and teaching). His work there mostly engages with what might be termed the craft-like aspects of these occupations, ie. the combination of skills, knowledge and perception required to “get it” as he terms it. He also makes clear that what he is not explicitly engaging with is the study of how a reflective practitioner also comes to develop: “wisdom in response to ethical dilemmas” (1987, p.xiii). This important area of vocational education as it relates to, and ties in with, education for reflective practice is what I will be discussing in the following paper. In effect extending Schön’s question: how is the education of a reflective practitioner constituted, to encompass: how is the education of a *bilded*¹ practitioner constituted?

2 Vocational Bildung

Rather than narrowing the question to the education of an ethical or wise practitioner I have chosen to use the broader concept of Bildung (cf. Lange et al., 2001; Rittelmeyer, 2012) to encompass wisdom and virtue together with aesthetic sensibility, the formation of character traits (overlapping with what is elsewhere called key-qualifications) and an expansive sense of one’s vocational practice and knowledge which corresponds roughly to Humboldt’s idea of general Bildung but in a vocational context rather than one of the Greek and Roman classics.

This is a matter of adequate research design. Schön in his discussion of education for reflective practice builds on observational case studies that describe how, for example, teachers of architecture interact with their students. Bildung, on the other hand, has a tradition of being described and researched in terms of biographical narratives where it often makes sense to argue that much of what leads to Bildung is not available to observation as it occurs, but rather emerges with time and hind-

¹ *Bilded* is someone in possession of Bildung.

sight (Rittelmeyer, 2012). Thus an aspect of the argument is that by framing such issues as “wisdom in response to ethical dilemmas” as part of a larger issue of becoming vocationally biled, it is easier to understand why instead of observational studies it makes sense to do biographical ones. This also connects the approach to the Bildungsgangdidaktik research in Germany (Meyer, 2009; Terhart, 2009; Trautmann, 2004). Furthermore the analysis of such biographies is made more comprehensive since, I would argue, Bildung as a conceptual construct is closely related to what one perceives as meaningful in one’s life and thus the biographical conversation is less conceptually driven than it would be if one went straight for issues of vocational ethics where the narrators understanding of ethics is more likely to determine the stories chosen and the interpretations given.

3 An explorative biographical case study

To deal with the question of how the education of a biled practitioner might be constituted I have conducted an extensive series (20) of conversations documenting the vocational education biography of a master bookbinder, gilder and engraver, Mr. Wolfgang B. (cf. Tyson, 2015a). These detail his apprenticeship in Stuttgart in the 1950s and his further education at the Ecole Estienne in Paris in the 1960s. By setting the criteria as him having an unusually high level of education and also a long engagement in teaching his occupation there are good reasons to assume that such a biographical narrative will carry strong reflective elements of Bildung. The aim of these conversations has been to get at extensive educational narratives, ie. narratives in which he describes the actions of his teachers, experiences related to a work-task and similar issues. Owing to the biographical character of Bildung such descriptions are often descriptions of Bildung-processes and thus lend themselves to an analysis of how a biled practitioner was educated and through this to a discussion of the patterns (Flyvbjerg, 2006; Larsson, 2009) that emerge through it.

4 Reflective practice and vocational Bildung

There are several different lines of analysis and reflection that can be pursued from the study. Two have resulted in previous papers (Tyson, 2014; 2015b) discussing aesthetic Bildung and VET and education for vocational excellence (the combination of virtue and wisdom). A third one will be emphasized here and that is the relationship between education for reflective practice and vocational Bildung.

Schön’s main focus is discussing education in design-like occupations and, in particular, the craft-like parts of such education. As mentioned initially, with craft-like I mean the combination of skills, knowledge and perception required to “get it” as he terms it. To describe what knowledgeable people in such vocational fields do, Schön distinguishes between reflection in action and reflection on action (Schön, 1983; 1987). Through this he tries to articulate how reflective practice is central to expertise in design-like occupations. The focus on reflective practice opens his argument to incorporate a Bildung perspective on several fronts.

First, Bildung as a biographical process is highly reflective and it would be an interesting field of study in its own right to look at people engaged in work that is characterized by reflective practice in Schön’s sense and see if there was an uncommon prevalence of biographical reflection as well.

Second, reflection on action is mirrored repeatedly in the case narrative. There are several stories of how the teachers that Wolfgang B. remembers enacted various educational measures. They did this in such a way as to bring out the interplay between teaching the craft-like parts of a skill and providing affordances of Bildung, showing how these can be mutually supportive. For example, he describes one of the teachers who had the nickname Lange-Otto (Tall-Otto) who worked at the Württembergische Bibelanstalt and taught a course in edge gilding (edge gilding is the technique with which one applies gold-leaf to the edges of book-leaves). We came to speak extensively about this course as an example of how they were taught the techniques and skill involved in edge gilding. Lange-Otto took them to the forest to show them the trees, Hainbuche (Hornbeam in English), used for the presses and pressing-boards and why this particular wood had to be used rather than any other. He furthermore taught them how to make their own edge gilding tools and spoke to them about gilding from a scientific and cultural perspective, for instance going into an extended discussion about

the reasons for gilded weathercocks on churches. In effect, Lange-Otto turned what could have been viewed as teaching a craft-skill into a composite process of skill-training and Bildung-affordances that were developed through that training. Such a curriculum is a result of reflection on action, but not limited to Schön's sense of an expert reflecting on how to solve a particular problem or develop a new technique, etc. but rather in a combined skill-teaching and Bildung-oriented educational sense.

Third, Mr. B. also describes a process strongly similar to reflection in action but one not oriented towards solving an issue in the process of making or towards dealing with a problem of skill training. Instead it focuses on an episode in which my skill-training as a bookbinder's apprentice with him became the basis for his deliberation and action aiming at the development of certain vocational virtues.

W: Do you remember that we always made almanacs for the bazaar in November? [a reference to geometrical embroideries made in 6th grade on colored paper that was glued onto thick cardboard and turned into calendars] Do you remember that there were a couple of girls that came late after we had made them and asked to have theirs done and you forgot to use a [thin sheet of glossy paper between the calendar and the cardboards] and everything was in a hurry and I stood there and thought to myself: "should I say something?" But instead of reminding you about the paper I said: "Ruhi, quick in and out of the press." And you looked up at me and you were a bit irritated and you put the first in the press and I said: "out." And you took it out and part of the cardboard was stuck to the calendar and you started to swear over yourself, you'd forgotten the paper because you were annoyed at the girls who disturbed you in another job you were doing. And there was no need for verbal corrective, it was an experience of: "aha," you relived, remembered everything we'd talked about regarding pressing [...] and all of that you literally owned and then it's not: "ah sorry, it didn't get any better than this." [...] That was the kind of reality or experience that you had, that: "ah, that's just not allowed to happen," and you saw the girls and their expectation, the whole complexity. I didn't have to argue with you, you had no chance to just say: "sorry it didn't get better than this," but instead you encountered an immediacy of neglect that gave you armor [for the future] through it.

[...]

I paid attention to the next one you made and if you had repeated the same mistake with the second as well and not made an immediate correction then I would have had to tell you: "Ruhi, not one more time." [Spoken with a voice as in Ruhi, never again or else] And that wasn't necessary and what is that? Is it morals? Or is it care and considerateness? Or, what is it? It's a complexity one develops that exists beyond the technique.

This is an example of the kind of reflection or deliberation often termed phronesis or practical wisdom (Tyson 2015b) where it is not separated from the reflection in action accompanying teaching a vocational skill as a craft-like process (ie. didactics).

In brief I have tried hereby to argue that Schön's research on reflective practice can be expanded in educational matters to include a Bildung-perspective that enriches its scope and brings depth to what we can understand and look for among expert practitioners.

Perhaps the most important result emerging thus far from the present inquiry is that the divide between systematic research and personal practice knowledge can be bridged. The potential is there when we understand that narratives of practical knowledge (such as the above) are a way of documenting it especially when there is no other significant way in which to do this or when other approaches are time and resource heavy. The former might be when it leaves little or no physical trace, say leadership-actions or conflict resolution processes or where quantitative approaches do not actually document practical knowledge per se. The latter might consist of things such as filming or observing a practice in order to get at Bildung-related knowledge when such actions occur unpredictably, suddenly and are often difficult to perceive as such other than retrospectively. My argument then, is that narratives of vocational Bildung "actions" contain significant reflective aspects and these narratives can be gathered systematically in order to explore and analyze various fields of Bildung-related educational practice. Thus between formulating knowledge as rules and concepts and viewing it as embodied, tacit and personal there is a whole world of stories which, taken one by one, do not constitute more than examples of practical knowledge in connection with something. But taken to-

gether, from different practitioners and different contexts, they can begin to enrich practitioners repertoire locked as they are in their own local and personal situations as well as form the basis for systematic scholarly analysis.

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Vocational Education and Training for a Post-Growth Economy

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Abstract: Post-growth economy refers to globally well-known concepts of degrowth or ‘socially sustainable degrowth’. The assumptions and conclusions of these concepts are basically very similar. They are rooted in the idea that societies building on economic growth are sooner or later reaching a deadlock. The paper wants to present some thoughts on the nature of these challenges and their influences on vocational education. First, a theoretical basis for the post-growth economy referring to the work of Niko Paech, André Gorz and others will be outlined. The main argument here is that a post-growth economy requires a fundamental change instead of small incremental innovations. Afterwards, ideas on how to prepare vocational education for the challenges of a post growth economy will be discussed focusing on the level of educational structures as well as on the level of pedagogical interventions.

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1 Introduction

The main challenge of this century will be the question how to deal with limited resources. Post-growth economy (in German language *Postwachstumsökonomie*) refers to globally well-known concepts of degrowth or ‘socially sustainable degrowth’. The assumptions and conclusions of these concepts are basically very similar. They are rooted in the idea that societies building on economic growth are sooner or later reaching a deadlock. This development path has various causes and consequences:

- an increase of the ecological load of industrial production (pollution), scarcity of resources,
- increasing Carbon-based energy consumption (with a related increased Carbon dioxide emission),
- a declining social legitimacy through a tendency towards a ‘growth of inequality’ etc.

Discussions on sustainability going on for decades did not have much of an effect – at least when looking at the climate goals or at the attempts to include ideas of sustainability in the curriculum of general and vocational education. Overall the only feasible way to reach the Kyoto climate goal seems to be a change in production modes towards a higher level of sustainability (resource efficiency) and a change in life styles, especially of those 2 billion people belonging to a global consumer middle class following the Western consumption and life style. A key element of such a new type of economy is most probably the coexistence of globalized, regionalized and subsistence spheres of the economy. Presumably most individuals will become involved in all mentioned economic spheres. As there can hardly be any doubts that all spheres of such a diversified economy will have to follow the principles of sustainability, this challenges vocational education in the future.

The paper wants to present some thoughts on the nature of these challenges and their influences on vocational education. Essentially the paper is theoretical since a model of society is discussed that has not come into reality yet but can be considered as a guiding vision in preparing society for the 21st century. First, a theoretical basis for the post-growth economy referring to the work of Niko Paech, André Gorz and others will be outlined. The main argument here is that a post-growth economy requires a fundamental change instead of small incremental innovations. Afterwards, ideas on how to prepare vocational education for these challenges will be discussed focusing on the level of educational structures as well as on the level of pedagogical interventions.

2 Theoretical grounding of a post-growth economy

During the last decades many approaches have been criticizing the current economic system from various perspectives, but in summary there are two main streams; one can be labelled as *criticism of capitalism* and the other strand is bringing forward critique in a (political) ecological perspective. While the former prominently raises doubts about economic growth as the essence of creating employment and widespread wealth, the latter emphasises the detrimental impacts of the prevailing production system and consumption style to the environment and thus on the ecological sphere.

If the straight relationship between economic growth (or economic recovery), an increased employment and wealth for broad parts of the population is suspected, then the legitimacy of growth as a basis for wealth is questionable. This is especially true for mature (national) economies with small growth rates suspending the job and wealth creating mechanism. At this point innovation is coming into play: An increased innovation rate is assumed to generate growth and thus keep the “wealth generating machine” running. Here the capitalism critique meets the ecological strand of critique: If an alternative calculus is developed which builds on the principles of ecological sustainability it turns out that the resource and energy intensity of current production is at best relatively decoupled (in a few highly advanced economies there occurred advances during the last four decades), but there is no absolute decoupling in sight (Jackson, 2009, p. 63ff). This means any improvement in energy-efficiency in production was counteracted by the enlargement of production (which to a considerable degree is owed to the globalised consumption/lifestyle). The commonality of both approaches is the idea that in the mid- to long-term the prevailing systems of production and consumption cannot persist, the first strand thinks this is because of its neglect of social sustainability, the second strand states that it is because of its neglect of ecological sustainability. Their common conclusion is that a new more sustainable economical and social/political regime is needed. Both approaches consider an economy without growth as a feasible way to go. With the concepts of post-growth economies (Paech, 2012) and the steady state economy (Daly, 2008) two similar ways to cope with the economic and ecological challenges have been developed. Without going into details it can be stated that both concepts are utopian, but following the German philosopher Ernst Bloch they can be labeled as

„realizable utopia“. Nevertheless it can be expected that there will be a long (hopefully not too long) transition phase towards a socially and ecologically sustainable economy.

Principles of sustainable companies were formulated since several decades, and they have different scopes and definitions of “sustainability” (Paech, 2012, p. 53 ff.). Very often the definition of the Brundtland Commission from 1987 is used, according to which the use of resources should follow interregional and intergenerational fairness. The newer approaches towards sustainability state – in contrast to these conciliatory approaches – that a more radical shift in reflecting economy is necessary (e.g. Paech, 2012, Freyling et al., 2015). They criticize e.g. the logic to answer challenges related to sustainability with innovations, because the effects of innovations always are unpredictable to some extent. One example for this is the ‘rebound effect’. The rebound effect can be defined as the “increased consumption of energy services following an improvement in the technical efficiency of delivering those services. This increased consumption offsets the energy savings that may otherwise be achieved” (Sorrell and Dimitropoulos, 2008).

The cultural perspective in Paech’s (2012) considerations recommits to Ivan Illich’s (1973) idea of conviviality: the development of tools which support reflection about production modes, the self-determined satisfaction of basic needs and the re-conquest of practical knowledge by average citizens. These ideas are developed further by Paech into a (thinkable) model of producing and consuming – thus: a model of living – in a post-growth economy, in which not all employment will be in the formal economy. This is already the case at the present but in most of these cases forced by the shortage of jobs provided by the formal economy. In the model of a post-growth economy a considerable share of employment might be in alternative spheres of economy such as subsistence and sharing economies. This is not necessarily an exclusion of persons from the formal economy, but rather might take the shape of a ‘mixed working sphere’ in which less than the societally defined average working time is spent in the formal economy and a societally agreed share of working time will be spent in alternative economic systems of subsistence and sufficiency.

Andre Gorz emphasizes the liberating quality of this step. He claims that a lot of skills, talents and creativity are not used in the current economic system. This “surplus of human resources” can only become productive in alternative economies and is considered as a solution towards the decline of paid labor in the current system. (Gorz, 2009, p. 29).

At this point, at the latest, post-growth economy turns into an issue for vocational education as a means for supporting the transition phase.

3 An outlook: Vocational education in the light of a post-growth economy

Sustainability has become an issue for educational organization in several ways (e. g. University of Hamburg, Bassen et al., 2013).

We find similarities towards our own thoughts especially in the dimension of self-reflection of common ways of living. Nevertheless, with the vision of a post-growth economy in the light of a post-growth economy. The hypotheses will develop from curricular consequences to support the transition process towards the general design of vocations for a post-growth economy.

1. The share of general education contents within vocational education needs to be enlarged.

Vocational education must provide knowledge and generate an understanding of a post-growth economy as a basis for sustainability. This means that vocational education must first of all evoke an understanding of other than the existing modes of economic action and second, must prepare for activities outside of the formal economy/employment structures. This means planning and managing knowledge as well as being able to marketing and interconnecting of production and service. This is not per se identical with what is postulated nowadays as „entrepreneurial competencies for skilled workers“ (cf. Commission of the European Communities, 2008). Overall the share of general education within vocational education needs to be enlarged.

2. General education must be broadened towards skills and competences needed within alternative economies aiming at the idea of a skillful life.

The idea of skillful life should be fostered which demands reflection of sense, responsibility and a holistic perspective on human existence. For every vocation a bivalent education must be developed: an education that enables people to work in conventional economic contexts as well as in alternative structures at the same time. That means that the competence orientation that is currently the guiding principle in European vocational education and training must be broadened towards skills and competences needed for such alternative economies. On practical level, economy and society must become central teaching subjects, again also in their alternative reading.

3. Vocational education must broaden its understanding towards transcending traditional pathways of problem solving

A mature understanding of materials and systems (machines, houses, gardens) should become the goal of education. This is not only meant as a way to small scale subsistence (e.g. urban gardening), but it also includes new economical thinking: e.g. a post-growth curriculum for entrepreneurs can be created instead of teaching them in the classical way. There are already a couple of good examples for successful but sustainable companies (Institut für ökologische Wirtschaftsforschung 2015).

Vocational education must widen its understanding of occupational competency to act (in German “beruflicher Handlungsfähigkeit”). It is not only being capable to solve given problems in a (state-of-the-art way) but rather transcend the traditional pathways of problem solving. This means e.g. for a car mechatronic to consider alternative mobility options.

4. New vocations have to be created around needs instead of means and technologies.

Post-growth economy will create a shift from valuing white collar work and knowledge work to craftsmanship. The transcension described above will lead to newly defined vocations based on traditional vocation but with a strong shift towards sustainable behavior and convivial technologies. The current vocational system is structured along established means and technologies to fulfill individual or societal needs. Post-growth vocations have to be organized along the needs. That means the vocation from our previous example, the car mechatronic, has to be educated to become an expert in mobility, transcending the vocational curriculum away from the means (car, bicycle, plane) towards the underlying need (mobility).

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Session 16

Assessing and Validating Competences by Exemplary Approaches from Australia, Germany, Bulgaria, Austria as well as from the Nordic Region

The Challenge of Assessing Social Competencies in VET. A Review of all Actual Research Practices in German-Speaking Countries

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Abstract: This document gives an outline of prevailing forms of assessing social competencies in VET. Starting point is the ASCOT initiative in Germany with its objective to develop tasks fitting to a scheduled VET-Large-Scale-Assessment (VET-LSA). Up to now it has been an unsolvable challenge to construct suitable items with focus on social competencies, in contrast to other domains of vocational action competence. Concerning social competences it seems to be impossible to create task formats implying multiple-choice-answers and Item-Response-Models. Quantitative modelling of competence levels in LSA does not meet the context sensitivity and variability of social competencies, especially if reference to professional work is targeted. At the end the author argues in favour of situational and performance orientated assessments. That secures ecological validity of tests dealing with social competencies in VET.

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1 Introduction

The year 2015 marks the end of the ASCOT initiative (<http://ascot-vet.net/>). Its main purpose was to develop and validate tasks fitting to a scheduled Large-Scale-Assessment (VET-LSA) of vocational skills in Europe. Funding was provided by the German Federal Ministry of Research (BMBF) from 2011 to 2014 to six research networks. Occupations in focus are: motor vehicle mechatronics technician, electronics technician for automation technology, industrial clerk, logistical clerk, health-carer for the elderly and medical assistant (for details, BMBF, 2012, 2014).

Item formats should be similar to those used in PISA-Assessments, so multiple-choice-formats with clearly correct answers and the application of Item-Response-Models (IRT). In contrast to PISA-Assessments is the usage of computer simulations of workplace surroundings. Moreover, not merely domain specific literacies (as in PISA) should be tested, but rather general vocational action competence (Baethge and Arends, 2009). It was the aspiration of the vocational educational scientists involved in ASCOT that models of quantitative levels of vocational competencies would be constructed (Nickolaus and Seeber, 2014, p. 176 ff.).

To create tasks with special reference to social competencies turned out to be an extraordinary challenge. Indeed, only the two model projects in the health area have developed and applied tasks containing social competencies. The other four projects decided to exclude social competencies. Up to now only the project CoSMed (Competence Measurement based on Simulations and adaptive Testing in Medical Settings) has published scientific papers (Dietzen et al., 2012; Monnier et al., 2014). The tasks of the two projects in the health sector conceived trained observer ratings. To put it in another way: With reference to social competencies in ASCOT it was impossible to construct standardized tasks according to statistical methods similar to those in PISA.

2 Why is it difficult to assess social competencies properly with reference to work environments?

Against the background of ASCOT a review of German publications dealing with the assessment of social competencies in vocational education and in psychology allows to answer the following three principal questions:

- What makes it so difficult to construct performance orientated tasks with unique solutions in the domain of social competencies?
- Why is it much more difficult to do so with reference to social competencies compared to other aspects of general vocational action competence? (The other three aspects are domain specific competence, methodological competence and personal competence.)
- Why will it be presumably impossible in the domain of social competencies in VET to construct overall valid theoretical models containing quantitative levels?

There are two main answers to these questions. The first one is: On a theoretical level it is impossible to distinguish the construct “social competencies” from other relevant constructs in psychology and educational sciences. The second reason is that social competencies are much more context sensitive than domain specific or methodical competencies.

VET-scientists emphasized that work related social competencies should be conceptualized and assessed in an interdisciplinary approach. Euler and Bauer-Klebl (2008) listed four relevant scientific disciplines: vocational education, psychology, sociology and communication theories. The authors prefer an interactive viewpoint and define social competencies as a special quality of human cooperation (Euler and Bauer-Klebl, 2008, p. 18).

In his synopsis the psychologist Uwe Kanning (2014) pointed out that there is no coherent scientific theory or definition of social competencies. This category, he argued, is strongly interrelated to other key concepts in psychology referring to the quality of interactions of one person with significant others. Such concepts are social intelligence, emotional intelligence, regulation of emotions and intercultural competence. In order to measure these categories psychologists constructed diverse tests and questionnaires. These instruments emphasize different aspects of social competencies, but also show many overlaps (Monnier, 2015, p. 63 ff.)

Problems of distinct theoretical definition led to issues of operationalisation in assessments and measurements. Nevertheless, during the last two decades, in German-speaking countries VET-researchers developed an informal consensus on what are main aspects of work related social competencies. These are mainly communication skills, especially competencies to manage conflicts and to take criticism. In addition abilities to moderate working groups or team meetings are much discussed in this context. These two main areas of social competencies can be found in vocational scientific literature dealing with learning situations in VET (for example, Pilz and Theis, 2014) and in empirical research as well.

3 Three different settings to assess social competencies in VET

But social competencies are highly context sensitive. Performing a particular pattern of behaviour (for instance to express some critical remarks towards a colleague or a customer) can be appropriate in one situation and can be wrong in other contexts. Thus it is difficult to create tasks fitting to different work environments and different professions. But based upon the described informal consensus among German-speaking VET-scientists three forms of social competencies assessment can be found in scientific publications:

- Standardized self-assessments of social competencies, usually without special reference to work environments,
- Describing critical incidents of interactions at work with the request to the examined persons to deliver solutions,
- Interactive role-plays requiring rapid and effective decisions in order to solve problems.

3.1 Global self-assessments of social competencies

This form is very similar to standardized personality tests in Psychology. The examined person marks numbers in scales referring to the person's behaviour in general. Normally this form of tests does not relate to professional work or to social situations at work. The most prominent example is the "Inventory of Social Competencies" (ISK) constructed by Uwe Kanning. It was originally published in 2009. A new version, including self- and external assessment, was published recently (Kanning 2015).

Kanning's approach was the lexical point of view. He developed a list of items. It is an integration of various catalogues of social competencies that he collected from scientific literature and psychological tests. Factor analysis led to 17 first order factors and 4 second order factors (English translation of factors, Kanning and Horenburg, 2014, p. 145). The intersection of these factors with personality traits is enormous, especially with the Big-Five-Concept of human personality. In VET-research a longitudinal study among Swiss apprentices gives empirical evidence of this tremendous overlap (Lang, 2008).

This way to assess social competencies prevails within educational sciences (Arnold and Lindner-Müller, 2012, p. 15). It allows the collection of data from big samples. That enables the application of complex statistical routines and models. So it would fit in Large-Scale-Assessments from a statistical point of view. But it lacks the link to work environments.

The following two forms of assessment promise data that are much nearer to situations of daily life and work. Instead of self-assessments the tasks request social competencies directly. Persons should find solutions to concrete problems.

3.2 Descriptions of critical incidents (written text or video)

This form tells a story of critical events or sketches a conflict between different persons in work environments. The person under examination has to deliver an appropriate solution. Usually different persons invent different solutions. Therefore trained persons or experienced experts were charged with ratings in order to classify the value of different solutions. Thus a quantitative comparison between persons is possible.

The ASCOT Initiative, mainly the project CoSMed, favoured this form. Suitable task formats contain emerging conflicts shown on video between patients and medical assistants. Most patients on video start with loud and angry remarks. It is the task of the examined person to give an appropriate answer that delivers de-escalation. Other variants imply the demand to comment on different answers delivered by the actors that play the medical assistant on video (Monnier et al., 2014).

Up to now this form of assessment of social competencies has been rarely used in VET-research in German-speaking countries. But in the areas of work psychology and personnel selection tasks with similar formats are common. They are called situational judgement tasks (SJT) and work with a list of possible solutions (Whetzel and McDaniel, 2009). So no ex-post-rating of answers is necessary. Unfortunately SJT-Assessments often show no link to specific work environments. They appeal to a kind of common sense shared more or less by all professions.

3.3 Interactive role-plays requiring rapid and effective decisions

Role-plays have a long tradition in modern psychology. They work as tools of research, diagnosis and therapy, mainly in the area of group dynamics and psychotherapy (Sader, 1986). Against this background Vollmers (2009) created a role-play to study social competencies among a large group of disabled apprentices in the domain of commerce. The purpose was to compare self-assessments with ratings of trained observers (Vollmers and Kindervater, 2010). In this role-play a conflict was simulated. The customer demands a special offer which is no longer available. The shop-assistant, played by the apprentice, tries to persuade him to buy more expensive goods.

Role-plays are very dynamic instruments and they do not meet quality criteria of standardized testing (high numerical reliability and validity, measured in forms of correlation). Such studies in VET attracted criticism of VET-scientists involved in ASCOT (for example, Nickolaus and Seeber 2013, p. 187). But supporters of role-plays in VET-Research can refer to the ecological validity of

this research instrument. Among the forms of assessment of social competencies only role-plays conceive interactions with significant others. The examined person has to make decisions that determine the behaviour of all persons involved in the situation. Decision making happens intuitively and the person has to assess intentions and possible behaviour patterns of others.

4 Conclusion

Classical authors in psychology as Kurt Lewin and Egon Brunswick emphasized ecological validity as necessity of psychological research (Wolf, 1986). Otherwise empirical results are not close to daily life of human beings and tend to be irrelevant. VET-Researchers studying social competencies should follow such recommendations. And what is more: Crisis, conflicts and critics are decisive when work and performance of social competencies are in the focus. Indeed it is not the usual daily routine of professional tasks that requests social competencies of trained staff. Therefore assessments that contain critical incidents, in presented tasks or in role-plays, seem to be most promising in future VET-research on social competencies.

It is possible and desirable to combine self-assessments with the study of visible behaviour in critical situations. In the following concept self-assessments are not global but directly linked to concrete situations and conflicts that persons have experienced just before. Vollmers and Kuhlmeier (2014) presented an improved design of the role-play described above (Vollmers, 2009). The new version is supplemented by a qualitative interview. In it the examined persons recall decisive instants of the role-play. The persons give reconstructive explanations why their behaviour was a contribution to solve a problem or to de-escalate a conflict. In addition the persons assess their way of problem solving by defined criteria. This approach is similar to the method “stimulated recall” used in qualitative reconstructive research (Messmer, 2015). The proposed combination of self-assessment and external rating of behaviour is a try to reduce the gap between cognition orientation and performance orientation, the two contrasting forms of competence research in VET (Erpenbeck, 2009).

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Trade Examinations – Questions of Ownership and Validity

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Abstract: The paper presents the trade or journeyman's examinations as the final quality control in VET, the certification to the world of work and, in the 21st century even a pathway to further education and training and life-long learning. Questions are raised whether there is a tension between the different objectives. Furthermore, the paper discuss validity of test tasks and assessments practices and different stakeholders' roles in trade examinations. The study is based on data from a national project on quality assessment. In the final phase of the project, our study focused on analyses of test tasks, assessment schemes and candidates' documentary evidence supported by stimulated recall interviews with examination board members. The study draws on examples from three different trades: plumbing, industrial mechanics and sales.

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1 Introduction

The paper aims to analyze what kind of knowledge, skills and competences that are tested and assessed through trade and journeyman's examinations in Norway, in different trades and by different examination boards. Different stakeholders focus on transition from initial vocational education and training (IVET) to the world of work and to higher education and life-long learning. The latter raising questions on whether or not trade examinations should include more general professional competencies/key competencies in line with concepts such as the reflective practitioner (Schön, 1983), tacit knowledge and situated learning (Lave & Wenger, 1991), expansive apprenticeship (Fuller & Unwin, 2011) and hybrid qualifications (Deissinger et al, 2013). Another perspective that might challenge traditional trade examinations is VET as a gateway to life-long-learning or higher education (Gendron, 2009). Hybrid qualifications are part of this discussion (Deissinger et al, 2013; Davey & Fuller, 2013).

The last education reform in Norway 2006 (The Knowledge Promotion) has a strong emphasis on assessment for learning and on final assessment according to learning outcomes as standards. In our study, we ask whether trade examinations express the competence of a skilled worker and facilitates the candidates' transitions to the world of work or whether they express ability to life-long learning. There seem to be tensions between learning outcome standards and performance-based learning and assessment (Brockmann, Clark & Winch, 2008; Rafoss & Witsø, 2014).

Assessment methods are part of the study and discussed in relation to newer developments in assessment methods, to authentic assessment and validity (Gulikers et al, 2004, 2007; Segers et al, 2001, van der Vleuten & Schuwirth, 2005). In a Nordic context, comparisons with the Finnish skills demonstrations as discussed by Stenström, Laine & Kurvonen (2006) are interesting.

2 Trade Examinations in Norway

Each year around 23.000 persons show up for a trade examination in Norway, of which 15.500 are apprentices and 7.500 external candidates (adults). Apprentices take their examinations mainly after 4 years of vocational education and training (2 years of school-based training and 2 years apprenticeship/work-based training). Adults show up for examination after at least five and a half year of approved practice within a trade, and having passed a practical-theoretical examination. The latter is part of recognition of prior learning (RPL) and are experience-based trade certifications. Both groups undertake the same trade examination with and similar test tasks. All trade examinations are performance based and last from one up to fifteen days depending on the trade. In total, 90 % pass the trade examinations.

The Education Act, § 3-57, states that examinations should test the candidates' learning outcomes according to a trade specific curriculum. This links to the European processes on defining and implementing learning outcomes and VET-standards (EQF, ECVET, EQAVET). Furthermore, there are four requirements for all trade examinations. The test tasks must include (1) planning of work with explanations, (2) performing professional work, (3) self-evaluation and (4) documentation of performed work.

On the other side, there is a long tradition for the working life to play a central role in certification of journeymen through the guilds, and of skilled workers according to industry standards and quality requirements (Borgersen, 2008). Until 1994, trade examination boards used to be part of the tripartite system and thus secure the interests from both the educational system, the employers and employees. Today there are two representatives, skilled in the trade and either employers or employees. They are non-familiar with curriculum-language; their references for assessment are identities, values, norms and trade specific quality standards (Deichman-Sørensen et al, 2011). Friche (2010) described similar trade-specific assessment cultures. Even today, employers demand more relevant /authentic content and assessment in VET.

National quality recommendations for trade examinations (The Norwegian Directorate for Education and Training, 2014) includes both quality assurance according to learning outcomes in a trade specific curriculum and quality as employability/transfer to working life.

3 Research Method

The research to be discussed here was part of a longitudinal qualitative study that followed 115 students from the second year in school spring 2013 to their trade or journeyman's examination autumn/winter 2014/2015 (Høst (ed), 2015). The sample taken from three different trades: sales, plumbers and industrial mechanics. For the study of trade or journeyman's examinations, we did document analyses of 20 tests including test tasks, assessment schemes and candidates' documentary evidence of performed work. Thereafter semi-structured interviews and stimulated recall with 15 trade examination board members (Nore & Lahn, 2015).

We also draw on results from a former study on examination board practices in five trades (Deichman-Sørensen et al, 2011).

4 Trade Examinations, Authentic Assessment and Validity

For the analyzes of trade examinations, we have used the multidimensional model for authentic assessment developed by Gulikers et al (2004) covering (1) test-tasks, (2) physical context, (3) social context, (4) results (documented outcome), (5) assessment criteria. In our study, we added (6) authentic assessors (skilled workers and not economists or engineers) and (7) institutional context (a possibility to shield the candidate from vulnerable situations)

According to the Education act, trade examinations should primarily be conducted in the company where the candidates have undertaken apprenticeship or worked for a long time as unskilled workers (adults). In our study, we found both examinations taking part in the company, at a test station, in a foreign company or even at a vocational school. The test tasks were all relevant for skilled workers, but not always authentic. Especially in sales, the test tasks were case based and the results not used for real. For industrial mechanics, most of the examinations were authentic with results being part of ordinary production or maintenance. At the same time, part of the test could be case based taking part at a test station or in a foreign company. For plumbers, all examinations took place at specific test stations. Their tests tasks were authentic, but the results not to be used by anyone.

Both the physical and the social contexts varied. In a test station candidates worked in an unknown environment and without colleagues. Very often, they were not allowed to speak to others during the test. Where the tests took place in ordinary production candidates worked together and discussed with colleagues performing their work – as in authentic settings.

Candidates' documentation of performed work varied from mainly written reports up to 100 pages or more (sales, office and administration) to completion of pre-defined checklists, deliver of physical objects and/or photos documenting work processes. More focus on documentation of the different phases of trade examinations (planning, performing, self-assessment and documentation) bring to the front a requirement for more hybrid qualifications.

In the established trades like plumbers and industrial mechanics, assessment criteria linked to quality of performed work/industrial quality standards. Sales are a relatively new trade in Norwegian VET and as such, they have no assessment traditions. Here we found both formal quality standards and learning outcomes as a backdrop for assessment criteria. In sales, the assessors was not always skilled workers. In plumbing, assessors were always skilled plumbers or masters in plumbing. For industrial mechanics, it could be either skilled workers or engineers. All the examination boards emphasized documentation and reflection.

Authenticity of trade examinations raises questions of validity. Does the test measure the competences as authentic? Moreover, who are the right persons to define such competences through the construct of test tasks and assessment criteria in trade or journeyman's examinations? As indicated, beliefs about expected outcomes differ between educational authorities emphasizing curricular norms and trade examination board members from the world of work that are more concerned with sufficient skill requirements for job performance. In this case, two or more members in a board seem to agree highly on what is quality work in a trade and how to assess candidates in a reflective mode.

5 Discussion

Trade examinations still seem to live their own lives apart from the rest of Norwegian VET like Engelsen pointed out (1998). Regional educational authorities appoint the members of examination boards based on recommendations from the social partners, but the boards act more or less as an independent body. Efforts are taken to train the boards to use trade specific curricula and predefined learning outcomes as support devices for the assessment and rating of examination achievements. At the same time, a more holistic approach including key competences/hybrid qualifications seem to prevail among board members. Individuals and social partners demand both transition to employment as skilled workers and new gateways from VET to higher education. We ask which impact such a combination will have on future test design including content, assessment criteria and methods. To what extent will written assignments, language skills and numeracy be included in the trade examinations? What will be the impact on the apprentices' and adults' test performance and passing rate? Furthermore, we add whether test designs including more hybrid qualifications will favor "ordinary" apprentices trained two years in school and two years in companies. Adults applying for experience-based trade certifications (RPL) and without school based VET might not be as prepared for more hybrid qualifications as part of the examinations.

Another question will be about the right assessors of hybrid qualifications. Can we see contours of more tripartite cooperation in trade examination boards, bringing back the teachers? Alternatively,

a requirement for a more extensive training of assessors? We also ask what will happen to the vocational identity and pride in such a new construct that challenges the stakeholders' roles.

In a world of mobility and European learning outcome standards, we expect a national trade certificate/VET diploma to be a valid certification of skills and competences. On the one hand, the Education Act states a local customization of the trade and journeyman's examination; on the other hand, there is a process of standardization according to EQF and ECVET. Both international and national research discuss if performance-based learning and assessment can have standards (Brockmann, Clark and Winch, 2008; Rafoss and Witsø, 2014).

Assessing professional competence whether it is as doctors, economists or skilled workers in a trade, links closely to discussions on validity. Authenticity and integration of competencies (both trade specific and general) are key issues as discussed by van der Vleuten & Schuwirth (2005). In this paper, we have described authentic assessment in trade and journeyman's examinations and discussed requirements for a new test design with more integration of general and trade specific competences. Furthermore, we would like to address the changing roles of stakeholders in trade examinations.

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Achieving and Contributing more in Life: Crossing the Disinterested to VET Qualified Boundary, Nurtured by Learning Leaderful Environments

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Abstract: This paper offers an approach to supporting an adult – with life experience – in crossing the *disinterested / VET qualified* boundary. Whilst this is Australian focused, the invitation is extended to reflect upon more global extrapolation opportunities to add to economic strengthening and social cohesion. The research derived insights – prompting further inquiry - point to there being much individual and community gain by supporting *not-yet-VET-qualified* individuals to overtly value what they know and can do – such valuing, leading them to give consideration to engaging with VET. Of course, not all will act upon the opportunity. The sequence of this boundary crossing being ‘awakening’, ‘motivating’, ‘supporting’, ‘achieving’ and ‘confirming’. And, as reviewed in this paper, the LCM Achievement Model (Hughes 2007a) – when applied as an activity system tool/artefact – has boundary crossing initiating and sustaining utility. In essence, whilst acknowledging that there are VET systemic inhibitors to be addressed, such as uninhibited access to recognition of prior learning and tuition cost to the student, the inherent goals and principles of VET in Australia invite being pro-active in motivating boundary crossing where a disinterested posture would otherwise exist. With this in mind, it should be noted that ‘disinterested’ may be either ignorance or active rejection grounded.

Bibliographical notes:

From a background of mathematics and science teaching and then diverse enterprise management and consultancy, Dr. Lewis Hughes is the Director of Enviro-sys – a consultancy focused upon broadly defined sustainability through making the best use of knowledge. Consequently, his research interest is largely directed at issues associated with lifelong learning and the yield to the individual, community and organisation. Lewis is also an Honorary Fellow of Deakin University, Australia.

1 Introduction - Why cross the disinterested to VET qualified boundary?

Some adults are unaware that vocational education and training (VET) is a pathway, for them, to expanded achievement in life. Others are aware but reluctant – e.g. due to past negative experience with formal learning. Accordingly, this paper offers an approach to proactively support these people in crossing the boundary – to their individual and to community benefit.

Following from the logic that vocational competency is a core element in workplace productivity and the outcomes of the Hughes and Hughes (2011, 2012, 2013) exploration of VET – when well taught – contributing to social capital, this paper is grounded in the proposition that – *Strength of engagement with vocational education and training (VET) is a significant brick in the foundation of economic and community productivity.*

Further, this proposition has much resonance with the view of Svendsen and Svendsen (2004, p.2) that not acknowledging the influence of social capital is the missing link in the productivity debate.

For us – Libby¹ and Lewis Hughes – the productivity resonance arises from our experience and research findings that adult engagement with Australian VET can be life-changing. In particular, this occurs when an adult student comes to VET with reticence regarding academic capacity and/or low level motivation and/or felt exclusion from engaging with formal learning at tertiary level. For some, Australian VET is a second chance at achieving employment related qualification and building social capital attributes such as pride-in self, commitment to making the most of what they know and can do, having appropriate trust in-self and trust in others, contributing to workplace and community cohesion, and being a lifelong learner.

Beyond just local gain, there is global advantage in acting to engage *the disinterested* in VET as is appropriate to individual and community needs and opportunities. In this respect, and configured as is appropriate to national norms, the entwining of education and training – as is the VET potential² - is a pathway to expanding an otherwise disadvantaged individual's sense of self and life horizons; and, thus, strengthening the community locally and globally. Accordingly, this paper offers strategic planning elements supporting VET boundary crossing.

Research approach

The informing research outcomes have been acquired through ethnographic inquiry and data viewed through the prism of activity theory. Whilst much of the insights are a consequence of inference from scoping inquiry, the amalgam of these outcomes gives authority to the productivity proposition set out in the introduction.

The research, and like inquiry, drawn upon includes VET recognition of prior learning for volunteers (Hughes, 2007b), workplace training support of VET programmes (Hughes, 2003), relationship of lifelong learning to organisational achievement (Hughes, 2007a), men 45+ years requiring a new career (Hughes, 2008), and VET & Social Capital (Hughes and Hughes, 2011, 2012, 2013).

2 Background to Action – The notion of a learning leaderful environment

The explorations informing this paper weren't seeking boundary crossing insights; however, there is a thread of relevant insights. The relevance points to the supporting role of formal and informal leaders, valuing the outcomes of lifelong learning, in *learning leaderful* environments – see Figure 1.

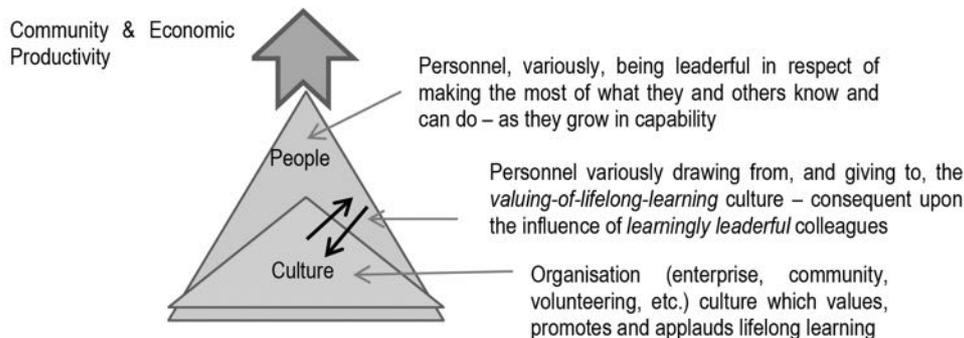


Figure 1: Learning Leaderful Environment

Importantly, there is the potential for *learning leaderful* environments to abide in the workplace, the family, the community, VET providers, etc. Accordingly, this paper posits that there is much gain in acting to cause such environments to be sustained in our local and global society; and the pathway to VET has much to offer.

¹ Libby Hughes passed away in February 2015. However, this paper is a continuance of her legacy in respect of individual and community gain accruing from lifelong learning; and the role of VET in this.

² The erosion (where it occurs) of the "E" in VET is cause for concern.

In introducing the notion of *learning leaderful* environments, I extrapolate from Raelin (2003) advocating distributed leadership giving rise to leaderful organisations. Accordingly, my meaning of a *learning leaderful* environment is one in which formal and informal leadership contribute to a culture of valuing the outcomes of lifelong learning; and, where appropriate, otherwise VET disinterested people are motivated to act upon VET opportunities.

Further, an inherently *learning leaderful* environment is good practice in business, community and close relationships. This was the case in my 2002-2005 exploration of the relationship between valuing lifelong learning and retaining Country Fire Authority of Victoria (CFA) volunteers.

For the CFA, and at a time of volunteer resignations seemingly associated with the requirement that they participate in more formal training³, distributed leadership valuing learning adding to self-esteem was found to be the foundation upon which volunteer retention rests; and this led to the development of the LCM Achievement Model (Hughes, 2007a) as a device for pursuing organisational achievement – see Figure 2. Subsequent exploration of the broad efficacy of the model, has led to advocating an *engagement with learning* process of *awakening, motivating, supporting, achieving and confirming* – confirming, being overt applauding of achievement.

In this instance of boundary crossing, the application of the LCM Achievement Model begins with defining the sweet spot as “*The disinterested moving to engage with VET and intending to achieve qualification*”. It is then a matter of –

- acting to heighten the valuing of learning outcomes as are brought to the boundary and then enhanced in crossing the boundary – the ‘L’;
- acting to nurture a culture which supports the boundary crossing – the ‘C’; and
- acting to appropriately value, and enhance the motivations which variously apply – the ‘M’.

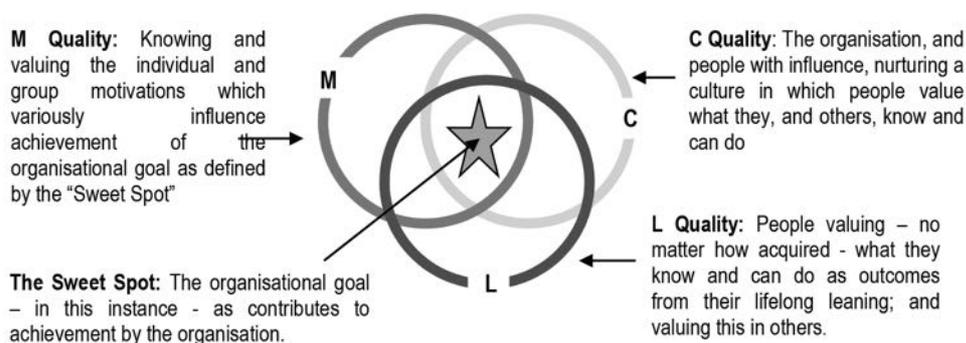


Figure 2: LCM Achievement Model (Hughes, 2007a) – A generic representation

In justification of the generic relevance of the LCM Achievement Model, in addition to the large focus upon the CFA, the emergence of the model was partially informed by investigation into water operations, contract cleaning and waste management.

On reflection, the LCM Achievement Model was foreshadowed in earlier life experiences such as skills transfer within a water, wastewater and electric power upgrading project. This project was directed at sustainability of a remote Indigenous community.

In the course of the community infrastructure project there were a number of instances where members of the work team were *awakened* and acted to reach beyond hitherto personnel horizons. This was under the influence of a site engineer with what I now identify as *learning leaderful* qualities – nurturing a mutually respecting learning partnership. The valuing-of-learning partnership was

³ Following the deaths of a volunteer fire fighting crew, training was more formalised. This was seen as threatening by some (e.g. exposure of language, literacy and numeracy weakness) and/or under-valuing of their experience by others.

characterised by *motivating, supporting, achieving and confirming* and had (with the benefit of hindsight) the LCM Achievement Model elements at its core.

As for the remote community, the stories of people who have come to VET with much success under the influence/support of others are indicators of much to be gained by the individual and the community. Whilst these influencing/supporting people may not have regarded themselves as being *learningly leaderful*, they had acted in this way.

Being *learningly leaderful*, invites innovation. For example, research into the recognition of prior learning (RPL) as a way to express valuing their volunteers (Hughes, 2007b) prompts consideration of cultures being *learning leaderful* in a wide range of workplaces, and the like.

Whilst the presence of *learning leaderful* influences in the workplace and community have much potential to bring people to VET, this quality within VET is highly influential in going on to qualification as exemplified below.

- Thomas (pseudonym), a truck driver who injured his back (to the point that he now can't sit still for more than 30 minutes) had to find alternative work. Social work was suggested to Thomas, but he was initially reticent about this as a new career and was reluctant to undertake study. However, Thomas came under the influence of a VET teacher who nurtured both learning passion and was influential in him so embracing his new career that he now views hurting his back as fortuitous – he is now doing what he should have always been doing. (informing, Hughes 2008)
- Mary (pseudonym) was enrolled in VET as a consequence of the contract cleaner employer taking advantage of a government wage subsidy for employees classified as trainees. Consequent upon a fear of school, Mary was a reluctant enrollee in a VET Certificate II in Asset Management (cleaning operations). However, notwithstanding the questionable employer motives, the *learning leaderful* (in nature) VET experience did cause Mary to acquire enthusiasm for learning, her husband and children were proud of her achievement, and she went on to further VET study. (informing, Hughes, 2003)

The VET teachers in the foregoing examples are what Libby and I have come to identify as *educationalists* in our exploration of VET and Social Capital (Hughes & Hughes 2011, 2012, 2013). Also, there is coupling between the VET teacher being *educationalist* and the VET environment being *learning leaderful* - as evidenced in exploring the wide efficacy of the LCM Achievement Model which has mostly been directed at VET issues.

3 Action – Initiating and/or supporting the boundary crossing

Agents – of some form – are required to move a potential VET student from *disinterested* to *engaged* and on to *qualification*. In the absence of initial internal agency/motivation within the potential student, external influence is required; and creating and sustaining *learning leaderful* environments across the community is helpful in this regard.

In addition to the requirement for influential authority to take the lead in putting in place an environment which is *learning leaderful* in nature, there is a requirement for three categories of agencies (actors) with *learning leaderful* agency –

- those who influence approaching the boundary;
- those who assist in crossing the boundary; and
- those who support going on to achieve the qualification.

Of course, the central actor is the person potentially and then engaging with VET. Drawing upon the Hughes and Hughes (2011, 2012, 2013), I suggest that the first and second of the three points of agency are coupled, and there can be coupling between the second and third. Accordingly, Figure 3 illustrates positioning the LCM Achievement Model as a tool/artefact in an activity system with the potential student as the subject. This said, Figure 2 is a framework for strategy development and tactical activity to bring about crossing the boundary – going on to qualification is a next step requiring redefining of activity system elements.

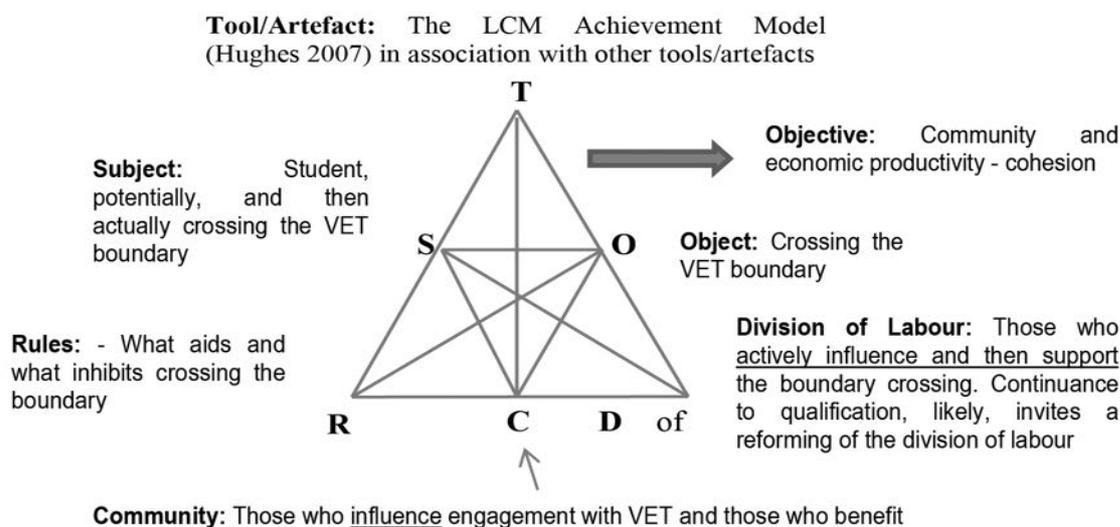


Figure 3: Activity system as supports 'disinterested to VET engaged' boundary crossing potential student as the subject

The Figure 3 representation of an activity system does not exist in isolation to interacting activity systems. For example, an activity system where educationalist teachers are the subject – as would be the case in going on to qualification – is but one of many potential interacting activity systems. Accordingly, in acting to support the boundary crossing, the interests and activity of these others must be valued and integrated into arising strategies.

With respect to interacting activity systems, the outcome of research yielding the LCM Achievement Model foreshadowed an approach of engaging stakeholders in conversation so as to agree a common object and with a view to identifying which of the 'Rules', 'Community' or 'Division of Labour' is most pivotal to achieving the intended objective. In this approach, the bridging conversation is more important than the actual decision (Refer Hughes, 2015 – forthcoming).

In Figure 3, the 'what' is encapsulated in identifying the subject and setting the object, the 'environment' (in this case *learning leaderful*) is shaped by rules, community and division of labour, and the LCM Achievement Model (probably in association) is the 'tool'. In essence, an activity system approach informs strategy and the LCM Achievement Model guides action.

4 Conclusion – Productivity benefit to the individual and to society

In sharing this undercurrent of outcome from a range of enquiry, I look beyond those who are readily identified as being at risk such as culturally marginalised, long-term unemployed and those feeling excluded from society. The not-so-obvious include those who through injury or other change in personal circumstances must find new direction in life, those who feel under-valued as a consequence of gender and/or socio-economic circumstance, and those who sense that they could achieve more but are uncertain regarding getting started. Also, there are those who are not aware of their potential, but upon being *awakened* will reach beyond current horizons. No matter what the incoming status, the quest is for a strengthened and productive society.

With the quest in mind, the foregoing is offered to assist in installing *learning leaderful* environments; and is a foreshadowing of continuing enquiry – noting that the act of enquiry has the potential to prompt action.

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Validation Arrangements: A Comparison between the Exceptional Admission to the Apprenticeship-Leave Examination in Austria and the Validation of Professional Knowledge, Skills and Competences in Bulgaria

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Abstract: This paper provides insights into validation arrangements in vocational education and training in two specific contexts: the exceptional admission to the apprenticeship-leave examination in Austria, specifically the “Du kannst was” initiative as implemented in Burgenland; and the validation of vocational qualification and/or vocational competences (part of qualification) in Bulgaria, in particular the “New opportunity for my future” initiative. The comparative analysis builds on the concept of “double information asymmetry”, which is observed in the interaction between the candidate applying for validation and the institution responsible for it. The primary conclusion of this paper is that validation arrangements can be made more effective (for both the candidate and the validation institution) through the application of a two-step approach including: 1) the identification of “double information asymmetry” in the interaction between candidate and validation institution and: 2) the development of strategies and supporting instruments that can mitigate the “double information asymmetry”.

Bibliographical notes:

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1 Introduction

This paper consists of four chapters. The first provides background information on relevant European and national developments related to non-formal and informal learning and outlines the primary research question to be addressed. The second is a theoretical chapter that focuses on the characteristics of the validation institutions involved in the initiatives described, and the concept of “double information asymmetry”. The third chapter is descriptive and illustrates the main features of the validation arrangements applied in the Austrian and the Bulgarian contexts. The fourth and final chapter offers a comparative analysis and draws related conclusions.

In recent years the importance of the concepts of non-formal and informal learning has been growing across Europe. This can be partially attributed to EU developments such as the elaboration of National Qualification Frameworks and national strategies for lifelong learning, the implementation of the European Credit System in Vocational Education and Training, and the enhancement of the learning outcomes approach. In addition, the Council Recommendation on the validation of non-formal and informal learning of 20 December 2012 stipulates that by 2018 Member States should have established procedures for the validation of non-formal and informal learning (European Council, 2012). Furthermore, validation of non-formal and informal learning is supposed to increase employability and reduce skills mismatch in the regional, national and/or European labour market, which can also be identified as a reason for an increase in its significance.

In Austria, assessments of an individual’s qualification level are based largely on the possession (or lack thereof) of legally regulated certificates, i.e. people may have high level of vocational com-

petences, but if they cannot provide a formal certificate that proves their competence they are likely to experience disadvantages in relation to professional and educational mobility. A similar trend can be observed in Bulgaria. Many Bulgarians have jobs that do not correspond to the qualifications they gained in secondary or higher education due to structural changes in the national economy and labour market over the past twenty years.

The central question addressed in this paper is: How can validation arrangements be made more effective from the perspective of the individual, the validation institution, and the society in general? In order to provide an answer to this question, two different initiatives will be examined: the “Du kannst was” (“You have skills”) initiative, implemented between 2012 and 2014 in the Austrian province of Burgenland¹; and the “New opportunity for my future” initiative, implemented in Bulgaria between 2013 and 2015. The first focuses on the exceptional admission to the apprenticeship-leave examination in Austria, while the second is concerned with the validation of vocational qualification and/or vocational competences (part of qualification) in Bulgaria. Based on the concept of “double information asymmetry”² the primary research question is broken down into the following sub-questions:

- How can validation institutions be more effectively informed about competences acquired by the candidate? Are there any supporting instruments that the candidate can use?
- How can the candidate be more effectively informed about the validation procedures, i.e., methods and criteria applied by the validation institution? Are there any supporting instruments that the validation institution can use?

2 Theoretical background

2.1 The validation institution

This paper focuses on the interaction between the candidate applying for validation and the institution responsible for. Therefore, it is important to understand the main features of the validation institutions involved in the “Du kannst was” (Burgenland) and the “New opportunity for my future” (Bulgaria) initiatives. In the Austrian example, there is *only one validation institution* and it is represented by a social partner organisation: the Apprenticeship Office at the Economic Chambers. The Apprenticeship Office is responsible for a) assessment of a candidate’s capability based on evidence of previous learning³; b) consulting on further education requirements (if additional courses need to be completed by the candidate); c) assessment of the outcomes of further education; and d) issue and award of a certificate. In the Bulgarian initiative the validation institution has similar tasks. However, it can be represented by *several types of educational providers*: vocational secondary schools, vocational colleges, art secondary schools, and vocational training centres for adults.

Differences with regard to the type of validation institution may be related to differences in both the overall VET systems in the respective countries and the type of VET the initiatives are targeted at. The Austrian initiative applies to “dual VET”, characterised by high degree of involvement of social partners in relation to, for instance, the design of training regulations⁴, training provision, organisation of apprenticeship-leave examination⁵, and representation on examination boards for the apprenticeship-leave examination. The Bulgarian initiative applies to school-based VET that is characterised by a comparatively lower degree of involvement of social partners. The educational institution

¹ “Du kannst was” is implemented in various Austrian provinces - the initiative was first piloted in 2007.

² To be clarified in chapter 2.

³ The assessment takes the form of an expert discussion between the candidate and representatives of the Apprenticeship Office.

⁴ The Federal Advisory Board on Apprenticeship (a body including social partner representatives) advises the Ministry of Economy on apprenticeship issues, i.e. it can introduce proposals for the reform of training regulations.

⁵ Apprenticeship-leave examinations are organised by the Apprenticeship Office and take place at the Economic Chambers.

has a central role, i.e. it concurrently fulfils the role of a training provider, an assessment and awarding body, and a validation institution.

2.2 The concept of “double information asymmetry”

The comparative analysis of the “Du kannst was” (Burgenland) and the “New opportunity for my future” initiatives builds on the theoretical concept of “double information asymmetry”.

The concept of “information asymmetry” is based on the information resources that the candidate and the validation institution have at their disposal in the process of validation. The information asymmetry is “double” as it includes two different perspectives: the perspective of the candidate - *first information asymmetry*, and the perspective of the validation institution - *second information asymmetry* (Annen and Schreiber, 2011, pp. 140-142).

First information asymmetry refers to the fact that a candidate’s competences (acquired non-formally or informally) are not directly observable by the validation institution (Annen and Schreiber, 2011, p.140). The institution can observe the outcome, but not the candidate’s actions leading to this outcome. Second information asymmetry refers to the validation procedure, the methods and criteria applied by the validation institution (Annen and Schreiber, 2011, p.141). These methods and criteria are not necessarily “visible” to the candidate and therefore s/he cannot assess the quality of the procedure.

First information asymmetry can be mitigated if the candidate provides the institution with supporting documents such as certificates, employment references, portfolios, etc. (Signaling 1). The institution can in turn use procedures to assess the relevance and reliability of these documents (Screening 1) (Annen and Schreiber, 2011, p.141).⁶ Screening 1 also refers to internal quality assurance mechanisms including the development of methodology and supporting instruments for the assessment of evidence of previous learning.

Second asymmetry can be mitigated if the institution provides information about the methods and criteria used in the validation procedure (Signaling 2). The information should be accessible and understandable for the candidate. Signaling 2 information may also include the reputation of the institution, membership to a recognised network, or unique organisational features in the context of a competition with other institutions. Through the provision of such information a candidate has the opportunity to explore the market of potential validation institutions (Screening 2) and choose between them (Annen and Schreiber, 2011, p. 142). Signaling 1 & 2 as well as Screening 1 & 2 can be considered strategies for mitigating “double information asymmetry” in validation procedures. This is illustrated by Figure 1 below.

⁶ Annen and Schreiber refer only to Signaling and Screening. For analytical reasons here the author differentiates between Signaling 1 & 2 and Screening 1 & 2.

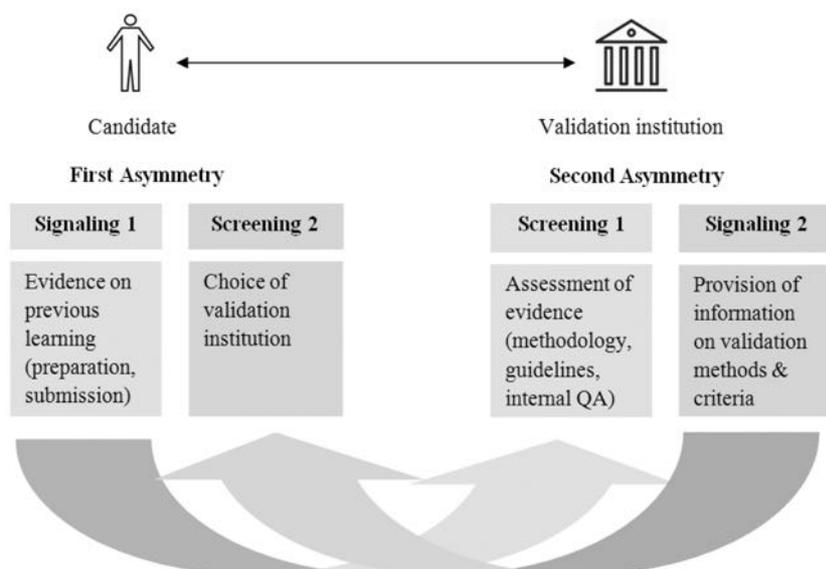


Figure 1: Strategies for mitigating “double information asymmetry”

3 Observations

This chapter explains how “double information asymmetry” is mitigated in the “Du kannst was” (Burgenland) and the “New opportunities for my future” (Bulgaria) initiatives. Important issues identified include the content and quality of supporting documentation provided by the candidate, as well as the method and actors involved in assessing the relevance and reliability of these documents.

3.1 Focus of “Du kannst was” - the competence portfolio

The “Du kannst was” initiative pays special attention to the process of identification, selection, and formulation of relevant evidence of previous learning. For example, certified CH-Q trainers from the Adult Education Centres of Burgenland (VHS Burgenland) support candidates in the development of a so-called competence portfolio through three workshops.⁷ The first workshop focuses on biographical work (exploring career path, education, occupation, unemployment and special living and learning situations) as well as the collection of evidence. The second workshop involves “potential analysis” where participants are made aware of and make “visible” the competences acquired in the course of their life. In the third workshop an individual profile focusing on key competences and on the elaboration of supporting evidence is developed.⁸ Following the completion of the competence portfolio, candidates present it (alongside other documents) to the validation institution: the Apprenticeship Office. Procedures for assessing the relevance and reliability of candidate’s documentation include:

- *First performance check* - in the form of an expert discussion. Representatives of the Apprenticeship Office review the competences described in the portfolio (potentially also making an assessment of practice-related certificates, work samples). They compare them with the competences of the job profile (“Berufsbild”) and the examination regulations related to the targeted vocational qualification. On the basis of this evaluation, a “positive list” containing proven competences, and an “open list” of competences that are still to be acquired, is produced. Subsequently, the validation institution advises

⁷ The workshops apply the CH-Q model for competence management developed within the Swiss Qualification Programme for Career Development.

⁸ Information based on interview provided by a representative of the VHS Burgenland involved in the implementation of the initiative.

candidates on the “open list” of outstanding competences and develops an individual training plan for their acquisition. Candidates then complete additional courses in order to acquire the competences identified as missing during the first performance check.

- *Second performance check* – a candidate’s result from the additional courses (taken to develop the competences on the “open list”) is assessed by an examination board of the apprenticeship-leave examination. Upon successful completion of the second performance check, the candidate is issued with an apprenticeship leave certificate by the validation institution.

3.2 Focus of the “New opportunity for my future” - methodological guidelines and training of assessors

In comparison to the “Du kannst was” (Burgenland), the “New opportunity for my future” (Bulgaria) initiative focuses less on the preparation and submission of evidence of previous learning, and more on internal quality assurance mechanisms related to assessment of evidence of previous learning. The tutors who support candidates throughout the validation process (including assisting in the selection and elaboration of evidence) represent the validation institution, i.e. traditionally they are teachers in the vocational discipline of the targeted qualification and are appointed by the director of the vocational school. In their role as tutors, these teachers are also known “*genuine consultants*”.⁹ One important characteristic is that tutors/consultants are also “assessors”- members of a so-called Assessment Commission, which assesses the relevance and reliability of a candidate’s documentation.¹⁰ Each candidate has an individual tutor/consultant. Within the “New opportunities for my future” initiative, tutors/consultants have been provided special training to enhance their ability to deal with candidate competences throughout different stages of the validation procedure, i.e. identification, documentation, assessment, and certification. The main outcomes of this training include (among others):¹¹

- Ability to work with State Educational Requirements in relation to the assessment of a candidate’s potential for validation;¹²
- Ability to support a candidate in the selection of a relevant occupation in which his/her knowledge, skills, and competences can be validated;
- Ability to verify the legitimacy of documentation and assess the acquired knowledge, skills, and competences.
- Ability to elaborate a candidate’s individual validation plan

In addition to the training, a “Manual for vocational schools for validating non-formal and informal learning” was also developed. The manual provides methodological guidelines and instruments (comparative tables) for the review of competences declared by a candidate in relation to those defined for specific vocational qualifications (or part of one) in the State Educational Requirements.

⁹ This is a direct translation from Bulgarian. It is differentiated between “initial consultants” who provide candidates with information about the validation procedure and “genuine consultants” that support candidates throughout the validation procedure.

¹⁰ The Assessment Commission is appointed by the director of the educational institution providing validation services. Aside from the individual consultant, the Assessment Commission also includes two additional vocational teachers.

¹¹ Based on a presentation of the Bulgarian National Agency for VET (NAVET), EQF Group Advisory Meeting, Brussels, 4 February 2015. Not published.

¹² In Bulgaria, validation is defined as the establishment of compliance of vocational competences (acquired through non-formal or informal learning) with State Educational Requirements - SERs (SG No.96/21.11.2014). SERs specify the learning outcomes and assessment of learning outcomes related to a certain vocational qualification. They also specify the procedures for the organisation of state exams in theory and practice of the profession.

4 Comparative analysis and conclusions

In the Austrian example, *significant efforts* are made in the identification, selection, and evidencing of relevant competences in order to present them before the validation institution (the Apprenticeship Office). Therefore, this initiative has a *stronger Signaling 1 information component*. In addition, the approach is characterised by the use of a particular supporting instrument - the *competence portfolio* - which represents a detailed picture of a candidate's knowledge, skills, and competences as they relate to the targeted vocational qualification. The fact that significant attention is paid to the Signaling 1 information component may be related to the clear division of responsibilities between: 1) the trainers who support the candidates in the development of a competence portfolio, and: 2) the "assessors", representatives of the validation institution, who are involved in the first and the second performance check. The trainers act as *intermediaries* in the interaction between candidate and validation institution, i.e. they are not employees of the Apprenticeship Office.

In comparison, the Bulgarian example possesses a *stronger Screening 1 information component*, i.e. efforts are predominantly concentrated on internal quality assurance mechanisms: development of methodology and supporting instruments for the assessment and comparison of the competences declared by a candidate with those defined in the State Educational Requirements for a specific vocational qualification (or part of it). In addition, assessors have been trained in order to enable them to apply this methodology. The stronger Screening 1 information component is attributable to the fact that the responsibilities of tutors/consultants and those of "assessors" overlap. The tutors/consultants do not act as intermediaries as they represent the validation institution and also fulfil the role of "assessors" – members of the Assessment Commission that evaluates the evidence provided by the candidates.

In the Bulgarian example, the validation institution integrates the responsibilities of an educational provider, assessment establishment, and awarding body into a single entity with authority over validation procedures. The division of responsibilities takes place inside the validation institution rather than outside as it does in the Austrian initiative. These differing approaches consequently lead to differences in the main strategies used to mitigate "double information asymmetry" in the Austrian and the Bulgarian examples (Figure 2).

Example	Validation institution	Reducing "double information asymmetry"
"Du kannst was" (Bgl.)	One institution the Apprenticeship Office Division of responsibilities tutors / trainers - assessors	Signaling 1 <i>Preparation and submission of evidence</i> _ training of candidates _ use of competence portfolio
"New opportunity for my future" (BG)	Several institutions vocational secondary schools Overlapping responsibilities tutors / consultants - assessors	Screening 1 <i>Assessment of evidence, internal QA</i> _ development of methodological guidelines _ training of assessors

Figure 2: Main strategies for mitigating "double information asymmetry" in the Austrian and the Bulgarian examples

On the basis of the analysis of both initiatives it can be concluded that in order to overcome "double information asymmetry" a combination of approaches may be considered:

- Enhancing the ability of candidates to identify, elaborate, and present relevant evidence of previous learning, for example, through the provision of training/workshops by experienced trainers who can transmit knowledge on the use of different supporting instruments such as the competence portfolio;

- Enhancing the ability of “assessors” to compare learning outcomes acquired through non-formal or informal learning with learning outcomes defined for certain vocational qualifications. This can be achieved through the development of methodological guidelines and the provision of training for assessors related to the application of these guidelines.

By adopting these approaches, institutions can be more effectively informed about the competences acquired by the candidates, and the candidates can be supplied a better understanding of the validation procedures that they wish to undertake.

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