Emergent issues
in Vocational Education
& Training

EMERGENT ISSUES IN VOCATIONAL EDUCATION & TRAINING

VOICES FROM CROSS-NATIONAL RESEARCH

Lázaro Moreno Herrera,
Marianne Teräs
& Petros Gougoulakis (eds.)

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PREFACE

This book is an outcome of the international networking of the research group VETYL (Vocational Education & Training/ Yrkeskunnande och Lärande), at the Department of Education, Stockholm University, Sweden. This reseach group was created in 2011 with twofold aims: first, contributing to the advance of knowledge in the intrincate area of vocational education and training (VET) and secondly, strengthening the research bases of the teacher education program for VET that is offered at the Department of Education, Stockholm University. The Swedish term "yrkeskunnande och lärande" in the name of the research group translate as "vocational knowing" and indicates one of the major research concerns of the group.

In May 2012 the group organised the first Stockholm International Conference in VET, an academic event that has ever since been organised yearly following the modality of invited papers. The conference has had two core aims: becoming a forum for sharing state of the art research in the VET field and a forum for networking and cooperation. We feel that the aims have been accomplished by far, the Stockholm International Conference in VET has now a well gained place within the major academic events organised in Europe as part of the European Network for Vocational Education and Training (VETNET). This book is a product of the networking originated in the conference, it contains selected texts that were first presented as papers in the sessions of the conference held in May 2017.

The texts presented in this book are representative of the research in the field of Vocational Education & Training that is been carried out in the different institutions engaged in the above-mentioned network. The contributions presented in this book deal with a wide range of areas of research within the VET field in different national contexts as well as cross-nationally.

The various chapters of the book illustrate the range of research questions and development tasks at the levels of vocational education and training systems (macro level), the organisation and design of vocational training programs and institutions (meso level) and the analysis and shaping of education and learning processes (micro level) which leads to the integration of different scientific disciplines and research traditions. The content of the book adds to earlier research within this field and strengthen the argument that research in the VET field can only be organised only in an interdisciplinary way (c.f. Rauner & Maclean, 2008). The book illustrates well the diversity of research in the field in a way that is not frequently available in the literature today. Texts by senior scholars goes here side by side with valuable contributions by emergent researchers in the field. Overall the contributors are scholars doing research within VET in contexts with contrasting cultural and socio-economic characteristics.

We hope that the book will fulfill the expectations of a diversity of readers including under–graduate students, in particular students in initial and in-service teacher training programs for VET, post-graduate students, and policy makers.

Finally, we would like to thank the reviewers for their useful suggestions that helped to improve the contributions presented in this book. Our gratitude goes also to all the authors

for enthusiastic support to our fruitful academic discussions, the strengthening of our institutional networking and the commitment to the advancement of knowledge in the field.

Lázaro Moreno Herrera,
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& Petros Gougoulakis
Stockholm, April 2018

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Section I:

VET Teacher Education

Defining Professional Skills from Teachers' Life Stories

Hamid Asghari*

Abstract: The life and professional experiences of vocational teachers in Sweden are at the centre of this study. Vocational teachers are greatly influential in shaping their students into professionals. The specific life experiences of vocational teachers can play an important role in preparing vocational students for their future professional lives. This study investigates the different themes that emerge from the teachers' professional life stories regarding the term professional skills. Through life story interviews with four vocational teachers I could see that professional skills do not only involve the tangible work done in the profession (for example, welding, turning or milling), but there are also other skills that vocational students should acquire to become successful professionals. In this article, I show what other skills the vocational teachers may emphasize and how these other skills can be understood in relation to vocational teachers' previous experiences.

Keywords: Vocational teachers' life stories; Industrial technology programme; Professional skills

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1. INTRODUCTION

This article is based on a narrative perspective, where I focus on which themes of professional skills become visible in four vocational teachers' life stories of teaching. The teachers work in industrial technology programme in three Swedish upper-secondary schools and in this study their life stories[1] are placed at the center. Teachers' life stories are of great importance for teaching and for students' learning (Goodson, 1991) and I consequently mean that in Swedish industrial technology programme, vocational teachers' life stories with a focus on professional skills are of great importance for vocational teaching and for vocational students' learning. This is because vocational teachers' work is described as taking place in the borderland between vocational school and professional life (see e.g. Green & Smith, 2002; Tuomi-Gröhn & Engeström, 2003; Vähäsantanen, Saarinen, & Eteläpelto, 2009). Vocational teachers from the industrial technology programme have experienced technology development and production changes in industry (see e.g. Asghari, 2014; Lindberg, 2003a). Furthermore, they have experience in changes in industrial education brought about by the changing demands for professionalism (Asghari, 2014). They are further tasked with educating their students for their future working lives, based on the requirements set by society, industry and the education system itself (ibid.). Vocational teachers' teaching is not only important for their students but also

1 Based on Goodson (1988), Mishler (1999) and Pérez Prieto (2000), vocational teachers' life stories here mean those experiences of childhood and youth, education, previous working life, and their life as vocational teachers in the Swedish industrial technology programme, as described by the vocational teachers themselves. This also takes into account their experiences of meeting with and teaching students.

for society and for industry related work. Their students are going to work in industry after completion of their vocational education. The students are also community citizens who are going to build the future society. Vocational teachers' life stories and the themes of professional skills which become visible in their life stories are therefore significant for understanding how they educate future citizens for future industries, what their students have to learn and why they have to do it.

In the next section I will describe various aspects of *professional skills in previous research* which lead to the study's *Aim and research question*. After the section *Theoretical and methodological framework,* I will in the section *Results* present the themes of professional skills which become visible in teachers' life stories. In the section *Discussion* I will discuss the themes of professional skills before I conclude the results of the study in the section *Conclusions*.

2. PROFESSIONAL SKILLS IN PREVIOUS RESEARCH

Professional competencies are constructed in the relationship between knowledge, skills and attitudes which are in interaction with each other (Baartman & De Bruijn, 2011; Schaap, Baartman, & De Bruijn, 2012). Attitudes are related to knowledge, and knowledge is related to the performance of professional tasks in specific work situations (Baartman & De Bruijn, 2011). Both knowledge and skills are constructed during practice and reflection and in interaction with the social world (Billett, 2001) and all knowledge, including the most basic knowledge of everyday life is constructed through social interactions (Berger & Luck-

mann, 1966). Knowledge is constructed by people, through their language and through their cooperation with each other (ibid.). *Knowing* is, however, a result of the combination of thinking and acting (Billett, 2001), and having looked at previous research on professional skills I found that the term *knowing* often is connected to professional skills. In previous research on vocational education, the focus has been on two different aspects of professional skills, although they have by no means been clearly defined and there have been some discrepancies between the different interpretations. These research areas may be categorized as: 1) topic-focused research describing professional skills as students' knowing of the topics which can be used by students in their future workplaces to solve different types of problems (see e.g. Baartman & De Bruijn, 2011; Boud, Hawke, & Falchikov, 2008; Cornford & Gunn, 1998; Filliettaz, de Saint-Georges, & Duc, 2010; Heikkinen, 1997). Sometimes students' knowing of the subjects are in line with curricular requirements and policy documents (see e.g. Hiim & Hippe, 2001; S. Johansson, 2009; Kimbell, Green, & Stables, 1996; Maldonado & Saddler, 2008; Panican, 2014; Rauner, 2008). Moreover, sometimes students' knowing of the topics are matched with the demands that business and industry organizations place on education (see e.g. Davidson & Svedin, 1999; Kallinikos, 2010; Magnusson, 1999; Olofsson, 1997; Sandkull & Johansson, 2000). 2) student-focused research describing skills as human competencies that are related to the world and to the specific ways of seeing, doing and being (Carlgren & Nyberg, 2015). Sometimes the focus is both on students' knowing of topics and on the students' behaviour in the school and workplace (see e.g. Hiim, 2013, 2015; Lindberg, 2003b, 2003c; Thång, 1997; Wärvik, 2004). In addition, some-

times research on vocational education from a student-focused perspective describes professional skills as acquired qualifications that can be applied in everyday life (see e.g. Berglund, 2009; Eikeland & Askerøi, 2006; Spetalen, 2010; Tsagalidis, 2008).

In this article, the focus is on the concept of professional skills. Below is an overview of what professional skills can be described as, according to previous research. The concept of professional skills appears under many different names in previous research, for example as *vocational skills* (Ryan, 1991), *knowing in practice* (Billett, 2001, 2003), *professionalism* in vocational training (Runia, 1997), and *knowing how* and *knowing that/knowing what* (Ryle, 1949), etc. According to Ryle, *knowing that, or knowing what* is about having factual knowledge of a thing (for example, knowing the rules of chess or knowing how to fish), but *knowing how* involves knowing how such factual knowledge can be used in reality and in concrete situations (being able to play chess or to fish). Between *knowing that* and *knowing how* a process takes place, and the value of the process is related to human intelligence and putting factual knowledge of fishing or factual knowledge of chess playing into practice (ibid.). Researchers like Göranzon (1993), Johannessen (1988), Janik, Grigorjan & Gasser (2011), and Kimbell, Green & Stables (1996) have also written about professional skills as an association of factual knowledge, experience-based knowledge and the way in which a person uses this knowledge to achieve something in practice.

Josefson (1991) writes about *sensual knowing* as a part of professional skills. In her research, professional skills are described as the way in which a skilled worker based on his/her previous professional experiences learns to understand a problem and identify possible solutions. Josefson's research is about a case of an experi-

enced nurse who has learned to understand the patient's condition by just seeing the patient. Professional skills are also found in the work of Andersson-Gustafsson (2002), who focuses on hairdressing. In her research, professional skills encompass science, art, responsibility, ethics, aesthetics, sensitivity and talent.

Professional skills have also been described by Hiim (2013, 2015). Hiim uses the term *professional competence*, using it to describe an interweaving of the worker's tangible knowledge of the profession and his/her social skills. In this context, Lindberg (2003b) uses the term *vocational knowing*. She describes this as an integration of a worker's visible and invisible skills into the profession, including how he/she may behave as a worker. In this study, focusing on the industrial technology programme, I consider Hiim's (2013, 2015) and Lindberg's (2003b) descriptions of the concept of professional skills, because professional skills on the industrial technology programme can also be seen as an integration of the visible and invisible knowledge belonging to the profession. Hiim's and Lindberg's perspectives on professional skills are varied and involve both the tangible skills used in production, for example in welding, turning and milling a product, and the additional skills a welder, turner or miller needs to provide customer service, to conduct teamwork, and to cooperate with other companies, etc.

Although the descriptions of professional skills in previous research have obviously contributed to the understanding of what these skills may be, previous research has neither paid in-depth attention to the industrial technology programme, nor indicated how the concept of professional skills can be understood from vocational teachers' life stories. There is no specific link between professional skills and the industrial tech-

nology programme, according to the teachers' life stories. The vocational teachers' life stories can be understood in relation to Hiim's (2013, 2015) and Lindberg's (2003b) descriptions of the concept of professional skills.

2.1 AIM AND RESEARCH QUESTION

To address the gap in the research relating to professional skills and the Swedish industrial technology programme, this article aims to contribute to knowledge in this area, guided by the following question:

> What themes related to their professional skills emerge from vocational teachers' life stories and prove important in their teaching?

In light of the knowledge overview, aim and research question a section describing the theoretical and methodological framework follows.

3. THEORETICAL AND METHODOLOGICAL FRAMEWORK

The vocational teachers whom I interviewed for this study[2] are Oskar, Anders, Omed and Johnny. Their life stories can be seen as both a *theoretical* and *methodological* framework.

2 Oskar, Anders, Omed and Johnny were also part of a larger study of vocational teachers' life experiences that I conducted in 2010-2014. In this article, I specifically focus on these four teachers' life stories because they highlighted different aspects of professional skills when they told me about their experiences of teaching.

The theoretical framework is used to understand the vocational teachers' life stories. I have used a social constructionist perspective (Berger & Luckmann, 2003) on life stories as a theoretical and methodological framework. Using that perspective, life stories in this study are viewed as social actions that are constructed together with and in relation to other people (cf. Mishler, 1999; Pérez Prieto, 2000; Goodson, 1991). From a social constructionist perspective on life stories, I would argue that Oskar, Anders, Omed and Johnny make sense of themselves and their world in their stories (see Mishler, 1999). In the interview situation they describe what they consider relevant for the interviewer and/or what they think that the interviewer wants to hear (ibid). While Oskar, Anders, Omed and Johnny talk about their teaching, they construct different kinds of identities, which Mishler, (1999, p. 19) refers to as "identity performances". Identity performances can in Oskar's, Ander's, Omed's and Johnny's life stories be seen as them wanting to show the interviewer who they are and how they would like to be perceived.

I am specifically interested in Oskar's, Anders', Omed's and Johnny's life experiences and have applied Goodson's (1980) theory as a basis for my analysis. Goodson views teachers' life stories as a way of understanding school and education. I thus mean that the vocational teachers' life stories can be seen as a way of understanding professional skills, and it is possible to access their experiences through life story interviews. Based on Freeman (2010), I believe that vocational teachers are in a creative process of "narrative reflection" (ibid., P. 4) when they talk about their experiences. During such a process, they try to understand and create a whole and a context from various events and experiences of their lived lives. Talking is thus a meaning-mak-

ing process, during which they try to understand themselves and their world through narration. This meaning-making process is described by Mishler (1999) as a process of identity formation, and in the case of vocational teachers, it may mean that they try to show in their narration which *knowing* they deem important or less important, and which *knowing* their students should acquire. Prominent themes of professional skills from vocational teachers' life stories must also be understood in relation to a wider context and the wider context in this article is vocational teachers' stories about their lives and their previous experiences (cf. Chen, 1997; Goodson, 1996; Mishler, 1986). When Oskar, Anders, Omed and Johnny discuss their life experiences with me they look back on their lived lives, and on the occasions when they met and taught their students (cf. Bruner, 1986). In their narratives they reflect on these experiences (cf. Freeman, 2010), and with me they construct their stories based on the interview situation (see Karlsson, 2006; Mishler, 1999; Pérez Prieto, 2000). While vocational teachers talk about their life experiences, they give shape and meaning to their experiences through language, but I am of course present when they talk about and reflect on these experiences, both as an interlocutor and as an audience. The content of their narratives, how and why the vocational teachers tell the stories they tell, is shaped by their experiences, but also by my participation and the questions I ask (cf. ibid.).

4. METHODOLOGICAL FRAMEWORK

The methodological framework in the article is based on narrative research, i.e. vocational teachers' life stories are the basis

of my research. Vocational teachers Oskar Anders, Omed and Johnny were part of a larger study on vocational teachers' told experiences of teaching, which I conducted between 2009 and 2014 (Asghari, 2014). In my study (ibid, 2014) I chose the industrial technology programme because industry has historically played in both vocational education and working life. Traditional industry has largely disappeared and has been replaced by modern high-tech industry. Swedish society has changed from an industrial society to a service society, in turn making industry less central than it was before (see e.g. Davidson & Svedin, 1999; Olofsson, 2003; Sundin & Wikman, 2004). Industrial education in Sweden has also changed. From 1971 to 1991, two years' vocational training was offered (see e.g. Larsson, 2001; A. Nilsson, 2005; 2013; L. Nilsson, 1981; Olofsson, 2003). From 1991 to 2011, three years of vocational upper-secondary schooling resulted in automatic eligibility to university studies (see e.g. Swedish National Agency for Education, 2011). Since 2011, three-year vocational upper-secondary schooling has been offered with elective courses giving eligibility to university studies (see e.g. Swedish National Agency for Education, 2012). There has also been a three-year upper-secondary apprenticeship with a sharper focus on workplace training since 2011 (ibid.).

In my choice of vocational teachers, I contacted a number of principals at vocational upper secondary schools in Sweden. Through the principals, those vocational teachers who wanted to participate in my research contacted me. In the choice of vocational teachers, I used Mishler' (1999) approach, where the selected life stories represented a wide variety of narrator experiences. Therefore, I took into account criteria such as teachers' age, gender, educational backgrounds, ethnicity, and class.

The reason why Oskar's Anders' Omed's and Johnny's life stories are discussed in this article, is because these teachers focused on professional skills when they talked about their experiences of teaching. Oskar, Anders, Omed and Johnny were interviewed twice, once in 2010 and once in 2012. The interview with Oskar lasted for a total of 2 hours and 21 minutes, the interview with Anders lasted for a total of 1 hour and 35 minutes, the interview with Omed lasted for a total of 3 hours and 7 minutes and the interview with Johnny lasted for a total of 3 hours and 3 minutes during the research process. All interviews were conducted at the vocational teachers' schools, was recorded in a voice recorder and transcribed immediately after the interviews. Before the interviews, I prepared an interview guide that was used in all the interviews. Goodson and Sikes (2001) and Goodson and Hargreaves (2003) write that interview questions for life story research should be open and researchers can ask question like *Can you please tell me about your life?* During the first interviews in 2010, I asked open questions about the vocational teachers' childhoods, education and professional lives. I asked them, for example to me about their childhoods and if they only answered briefly, (e.g. "I had a good childhood"), I followed up by asking them for more details. Based on Lieblich, Tuval-Mashiach and Zilber (1998), I created a holistic chronological story for each vocational teacher between the first and the second interviews. Here my focus was on the descriptions that vocational teachers often returned to, something which I interpreted as important (cf. ibid). In the second interviews in 2012, I asked questions about these descriptions they had often returned to, for example by asking: "In the first interview you told me about your vocational education and your vocational teacher. Can you tell me

please more about him? What was so specific with him? What did make him to a good teacher according to you?" After the second interview, I compiled materials from both interviews into a fuller holistic chronological life story for each of the vocational teachers. This time my focus also was on the descriptions that vocational teachers often returned to (cf. ibid.). After creating these holistic stories, I discovered that vocational teachers often returned to their students and talked about what, how and why they are taught as they are taught. Dominant themes of professional skills are those that vocational teachers often returned to when discussing their students.

4.1 ANALYSIS OF VOCATIONAL TEACHER' LIFE STORIES

In the analysis of vocational teacher' life stories I have relied on analytical tools from Lieblich (1993) and Lieblich, Tuval-Mashiach and Zilber (1998) who write that the researcher can read, interpret and analyse life stories from two independent dimensions, "those of (a) holistic versus categorical approaches and (b) content versus form" (12). In my thematic analysis I used both the holistic approach, i.e. that vocational teachers talk about life as a whole, as well as the categorical approach, i.e. *thematization* of their descriptions of work with students in teaching.

Based on Lieblich (1993), I holistically analysed the vocational teachers' life stories from their childhoods to their professional lives as teachers, focusing on vocational education, vocational teaching and vocational learning. I used a categorical approach, based on Lieblich et al. (1998), to analyse the vocational teachers' stories thematically. In the analysis based on Lieblich et al.

I selected those teaching descriptions from vocational teachers' stories which appeared to be unique and/or subtly different and which could highlight different aspects of professional skills (categorical approach). I use *unique* to designate descriptions only offered by a single vocational teacher. These descriptions differ from the "norm" or from "the obvious" or from the descriptions provided by other vocational teachers. Descriptions with *subtle differences* are used for similar descriptions received from several vocational teachers, but that differ in their details: the differences concerned what vocational teachers taught, and how and why they taught it.

4 .2 RECURRING THEMES IN VOCATIONAL TEACHERS' LIFE STORIES

Regarding the relationship between vocational teachers' stories about teaching and what *emerges* concerning professional skills from their life stories, I lean towards a view of knowledge in which vocational teachers' stories can be seen as a form of reconstruction of their lived lives and what they have experienced (cf. Mishler, 1999). In Mishler's research, craft artists reconstructed their experiences of their lived lives in narration, thereby creating meaning for the present while pointing out possible paths for the future. Likewise, I believe that what vocational teachers in this research tell me is primarily situated in the present moment, but is influenced by both past events and possible future prospects. Vocational teachers' experiences (with a focus on the concept of professional skills) prove to be important for how they identify themselves as industrial workers and as vocational teachers, and also how they have learned professions, what they have learned,

and what they bring to their teaching. In line with the aims of this article, the following results section presents the thematization of the vocational teachers' descriptions of teaching. In the presentation, I highlight parts of the vocational teachers' narration of their life experiences, such as childhood and youth, training time, previous professional lives as industrial workers and their experiences as vocational teachers in the industrial technology programme. The presentation can be seen as a basis for understanding the *recurring themes* when vocational teachers describe their teaching, and also illustrates what professional skills may entail for them (cf. Lieblich et al., 1998). According to the social constructivist perspective of knowledge I adopt here (Burr, 1995; 2003), knowledge constructed in the narration is seen as a product of historical, social and ideological processes in divergent space and time. Knowledge is constructed by people, through their interaction with each other and their surroundings (Burr, 1995, 2003), and accordingly there is no absolute truth as to the nature of knowledge, content, status and reality. Knowledge is produced and constructed in different ways and in different times and spaces; knowledge is contextual and therefore true knowledge cannot exist (cf. ibid.). Therefore, I do not regard any of these life stories as the absolute truth, but rather see them as ways in which vocational teachers make sense of professional skills, their own experiences and their teaching practice.

In view of the accounting of how the research material has been collected and how the collected research material can be comprehended, I present the themes of professional skills which become visible in vocational teachers' life stories in the next section.

5. RESULTS

In this section, I thematize vocational teachers' life stories about teaching and pay particular attention to the importance of professional skills. The themes are emerging from the vocational teachers' life stories illustrate different aspects of professional skills. The themes are: knowing how solving real technical problems, knowing of modern, and computerized machines as a basis for CNC-technical education, knowing that can be used for production in manual cutting machines, knowing of manual machines as a basis for CNC-technical education, knowing of mathematics as a basis for CNC-technical education, knowing which can be used for engineering studies, knowing of creating a sense of industry related capability, knowing that is related to childhood experiences and knowing of the unwritten rules. I further show that there are possible relationships between vocational teachers' life experiences and the themes of professional skills appearing in their life stories.

OSKAR

Oskar is 21 and was born and raised in an industrial city. He has grown up with the Internet and broadband and has always been interested in computers, electrical appliances and electronics. He received his vocational education in an industrial school which doubled as a company offering service and repairs and an upper-secondary school. Oskar has two years' teaching experi-

ence and teaches courses in CNC technology[3]. He is a qualified automation technician, specializing in the repair of CNC machines. One of the vocational teachers whom Oskar remembers from his own education always took broken machine parts with him to the classroom. Oskar says that the teacher did it because he wanted his students to see these problems in reality. This teacher also taught students how to solve problems, which, according to Oskar, helped him in his vocational learning. Oskar was a good student, and after he finished his vocational education, the upper-secondary school offered him employment as a vocational teacher. Oskar says that he tries to imitate his teacher when he teaches his students. He also brings broken machine parts to the classroom, because he wants his students to see the problems in reality and learn how to solve them. Oskar says that knowledge is not useful if students cannot use it in reality, or if it does not help students to solve production problems. According to Oskar, the manufacturing industry consists of advanced modern computers and students should learn what is used in reality, i.e. they should learn about new technology and the programming of modern, and computerized industrial machines. Oskar says that students do not need to learn about old technology such as turning and milling using manual machines. He says: "It is modern technology that they'll use; who cuts thread using a conventional [manual] lathe these days?"

3 CNC technology focuses on various types of computerized industrial machines, e.g. computerized turning, milling and drilling machines.

KNOWING HOW SOLVING REAL TECHNICAL PROBLEMS

Oskar's life story emphasizes professional skills as *knowing how solving real technical problems*. By "reality", Oskar means industrial production. In his teaching, he wants to focus on the problems that industrial workers can experience in companies and in productions. This aspect of professional skills is shown when Oskar talks about the visibility of real problems in the machine parts as well as learning to solve these problems. The relationship between Oskar's previous experience of being taught by his teacher (with links to real industrial production, and the benefits he received from this teaching) and how he teaches his own students (with links to real industrial production for the students' benefit), is visible in his life story.

Knowing of modern, and computerized machines as a basis for CNC-technical education

In Oskar's life story, professional skills, is seen as *knowing of modern, and computerized machines as a basis for CNC-technical education*. This aspect of professional skills is emphasized when Oskar talks about his education and the skills that benefit students. It is also clear that for Oskar the basis of CNC technology is modern technology and such productions that make use of in computerized cutting machines rather than old technology using manual machines. According to Oskar, knowledge about modern technology benefits his students and can be useful in their future careers. When Oskar talks about his childhood, he says that he was interested in computers and the latest technology. He says that his students have to be able to use modern technology and program advanced industrial machines (CNC

machines). Oskar's narrative highlights the relationship between his life experiences and the skills his students will acquire.

ANDERS

Anders is 34, has one year's teaching experience and teaches courses in CNC technology. In his childhood, Anders learned the basics of technology through loosening screws and seeing what was behind them. Anders chooses an industrial technology programme at upper-secondary school. In class, Anders and his classmates stood by the lathe or milling machine, read the production drawing, and picked up tools and working materials. They then manufactured workpieces by choosing the correct speed and feeding, with margins to a thousandth of a millimetre. Anders trained turning and milling on manual machines, and he did not learn how to write programs to allow the computer to produce workpieces, he says. After his upper-secondary education, Anders worked for twelve years a machinist and CNC operator at an industrial company, and later he began working as a vocational teacher in the industrial technology programme. Anders says: "I want my students first to learn to use manual machines, and then when they have learned the basics they can start using CNC machines, because then they can understand the technology behind the CNC machines better. Knowledge of manual turning and milling machines forms the basis for CNC technology".

KNOWING THAT CAN BE USED FOR PRODUCTION IN MANUAL CUTTING MACHINES

Anders' life story shows professional skills as entailing *knowing that can be used for production in manual cutting machines*. This aspect of professional skills comes to the fore when Anders tells how he used manual cutting machines in his vocational training, and describes what his students should learn in their vocational education. In his education, Anders produced workpieces with thousandth-of-a-millimetre precision and his students also will be able to produce similar pieces using manual cutting machines. Anders' story highlights the relationship between his experiences and what his students have to be able to do. When Anders was a vocational student, professional skills were mainly seen to entail using manual lathe and milling machines for production and he now wants his students to have the same skills.

KNOWING OF MANUAL MACHINES AS A BASIS FOR CNC-TECHNICAL EDUCATION

In Anders' life story, professional skills mean having *knowing of manual machines as a basis for CNC-technical education*. This aspect of professional skills is shown when Anders says that he learned the basis of technology through loosening the screws and seeing what was behind them. The aspect is also visible when Anders talks about his teaching and when he says that his students should learn the basics of workshop technology by using manual cutting machines to get an understanding of the technology behind CNC machines. The relationship between

Anders' life experiences and the knowledge his students will acquire becomes clear when Anders talks about his childhood, his education and his teaching. Anders learned the basics of workshop technology by assembling and disassembling, and by training on manual cutting machines. His students should also be able to master the basics of workshop technology through working in manual cutting machines.

OMED

Omed is 48 and was born and raised in a Middle Eastern country. Omed says that he had a flair for mathematics, both in primary and in secondary school. His parents and his teachers appreciated his mathematical aptitude. Since he was so good at mathematics, he naturally chose to enrol in a mechanical engineering programme at a university in his homeland. The engineering programme was theoretical in nature and was to a large extent based on mathematics. During his study years, his country was struck by war and Omed moved to Sweden. In Sweden, Omed worked as a taxi driver and for a number of years as a CNC operator. Later he trained at university as a vocational teacher, and after that he began teaching on the industrial technology programme. Omed has nine years' teaching experience and teaches courses in CNC technology. Omed says: "Math is the basis of all technology and also of CNC technology". If students want to understand CNC technology, they must do it through mathematics, he continues. Omed says: "When I teach I connect mathematics to CNC technology all the time, since in this way the students gain an understanding of the connection between math and technology." He says that his students

are curious about mathematics now. They have also learned to analyse CNC technology mathematically. Omed says that students cannot draw and read blueprints, write programs and use the CNC-machines without a knowledge of mathematics. He says that his students also have the benefit of mathematics if they later choose to study engineering at university. Omed tells his students about engineering programmes, because he says that he wants to make his students aware that they actually have the opportunity to study at university and develop their technical knowledge.

KNOWING OF MATHEMATICS AS A BASIS FOR CNC-TECHNICAL EDUCATION

From Omed's life story, professional skills emerge as *knowing of mathematics as a basis for CNC-technical education*. This aspect of professional skills is shown when he talks about production through technical mathematics, emphasizing that mathematics is the basis of all technology and also of CNC technology. It is also displayed when he says that students cannot use CNC machines if they do not understand mathematics, because they rely on mathematics to draw and read blueprints, write programs and use the CNC machines. He also says that he connects mathematics to CNC technology to help his students understand the relationship between mathematics and technology. Omed says that mathematics is the basis of all technology, and students should have a knowledge of mathematics in order to be able to understand CNC technology. Omed's words can be understood in relation to his life experiences and the importance of mathematics in his upbringing and his education. Both

Omed's parents and his teachers appreciated his mathematical skills, and the engineering programme Omed embarked on also was also based on mathematics.

KNOWING WHICH CAN BE USED FOR ENGINEERING STUDIES

Omed's life story shows that professional skills can be seen as *knowing which can be used for engineering studies*. This aspect of professional skills is shown when Omed talks about his experiences with mathematical knowledge in his former homeland and when he says that he wanted to study mechanical engineering at university because of his mathematical knowledge. When Omed talks about his teaching, he also says that his students might reap the benefits of their mathematical skills in their future engineering studies. The relationship between Omed's experiences and his teaching practice emerges from his life story. This can for example be seen when Omed talks about his mathematical knowledge and his engineering education, and when he discusses how mathematics may benefit his students when they embark on further education in engineering.

JOHNNY

Johnny is 52 and as a child he was often with his father who was good at renovating engines. In this way, Johnny learned mechanics. Johnny says: "And it was quite natural for me in my own world that I have to work with my body, with my hands". But such knowledge was not appreciated by his teachers at primary and secondary school, who deemed Swedish, English and math-

ematics important. Johnny says that during his school years he had always had a feeling that he was not good enough and was an unmotivated student. When his parents divorced, Johnny struggled financially; he looked for work, but found nothing. He wanted to get a job and earn money. He wanted to avoid being poor and he wanted to show that he was good enough – and he eventually got there. He started working as a welder at gradually became accomplished. He was no longer applying for jobs; companies contacted him and needed his knowledge. And most importantly, he earned money and had come out of poverty. Johnny says that there were unwritten rules which all welders kept to at the company where he worked. These rules included seeing welding as teamwork and expecting the whole team to help each other to produce quality work in good time. The welders came to work on time, respected each other, each other's knowledge and company regulations. Johnny continues: "We welders took care of each other, we fought together against injustice, but we also did our jobs because we knew that we needed a workplace which would make a profit so that we would not be unemployed. We each had our own territory in the workshop and we were careful not to cross into other's territories and get in each other's way. That too belongs to the unwritten rules". Johnny worked as a welder for twenty years before he became vocational teacher teaching welding in the industrial technology programme at an upper-secondary school. Johnny has twelve years' teaching experience. He says that his students have backgrounds similar to his own: in primary school they have all felt unmotivated and that they are not good enough. Johnny continues: "The difference is that now they can create things with their hands and they see that they really can, they

are really good enough". Johnny says that all of his students are working class and were born into the profession. He says: "They are accustomed to using tools, they have the profession in their bones, and they do welding tasks well". Johnny says that he is continuously in contact with industrial companies, and companies know that students completing a vocational education are still inexperienced welders, and have to work a number of years to become experienced. In this case, it is important for companies that students know the unwritten rules to get a job, and eventually become experienced welders. Johnny continues: "For me, the meaning of industrial technology education is to educate my students so that they know these unwritten rules, that is even more important than being able to weld".

KNOWING OF CREATING A SENSE OF INDUSTRY RELATED CAPABILITY

Professional skills emerge from Johnny's life story as *knowing of creating a sense of industry related capability*. This aspect of professional skills is shown when Johnny talks about his schooling and how he always felt that he was not good enough in primary school, but that the feeling of capability returned when he learned welding. He eventually became a skilled welder; companies contacted him and needed his expertise; he earned money and he came out of poverty. This aspect of professional skills is also displayed when Johnny talks about his teaching, about the fact that his students come from the same environment as he does, and by saying that they too in primary school got the

feeling that they were not good enough[4]. The feeling of incompetence can disappear through becoming a professional and acquiring knowledge about producing things by hand. Johnny talks about his feeling of capability through his welding job, when he earned money and was in demand by companies. He also talks about his students who through producing things by hand can see that they are really good enough. Johnny's words illustrate the relationship between his previous experiences of professional skills and what professional skills, according to him, can be for his students, namely a focus on knowledge and feeling capable.

KNOWING THAT IS RELATED TO CHILDHOOD EXPERIENCES

Professional skills also involve *knowing that is related to childhood experiences* in Johnny's life story. This aspect of professional skills is shown when Johnny talks about his childhood and about his students who were born into the profession. The aspect is highlighted when Johnny says that the mechanics he learned in his childhood showed him that it was natural to work with his hands, and it also evident when he says that many of his students have learned to use tools at home; they have vocational experiences in their bones and are good at welding. The

4 Johnny has obviously not been with his students in their primary schools, but he says anyway that his students had constantly been told that they were not good enough. In relation to Freeman (2007, 2010), Johnny's words may be understood as his way of putting his life experiences in a new perspective through storytelling, as making sense of his life experiences and drawing parallels between his experiences and what he believes his students also had experienced.

relationship between Johnny's experiences of professional skills and what he says about his students' professional skills is also prominent, as both focus on knowledge related to childhood experiences that can be used in industrial production.

KNOWING OF THE UNWRITTEN RULES

In Johnny's life story, professional skills also emerge as *knowing of the unwritten rules*. This aspect of professional skills is shown when Johnny talks about his education and his working life as a welder, and about what he wants that his students to be able to do. The unwritten rules that Johnny talks about involve knowledge and competences about how an industrial worker should behave in the workplace. The unwritten rules Johnny mentions include respect for the company rules, for work time, for colleagues and for their knowledge, but also maintaining good relationships between industrial workers by not invading each other's space, not getting in each other's way, and fighting together against injustice.[5] There are also unwritten rules about teamwork, about cooperating with other team members, and ensuring that production is done in good time and with good quality. The story also shows the relationship between Johnny's experiences of these unwritten rules in his workplace, and the important unwritten rules his students should be able to consider.

In the following, I will discuss the themes of professional skills that emerge from the vocational teachers' life stories and relate these to the aim and research question.

5 Fighting together against injustice can be seen from a historical perspective and can be compared with what A. O. Johansson (1990) writes: in the early 1900s, workers wanted to retain autonomy in work and defended industrial workers against employers' dominance.

6. DISCUSSION

Professional skills have been studied from different perspectives, of which the life stories of vocational teachers is one. The vocational teachers' stories emphasize the skills necessary to cope with industrial work. Based on what these teachers talk about, it appears that the professional skills of vocational teachers in the industrial technology programme do not only comprise knowledge of industrial technology. Vocational teachers seem to see professional skills as constructed activities within the profession through which novices develop into experts in the industry, as well as the industrial technology education provided to students who are novices. Professional skills can thus be described as constructed knowing of a profession that reaches schools as occupational skills (cf. Berner, 1989; Bäckman, Jacobsen, Lorentzen, Österbacka, & Dahl, 2014; Magnusson, 1999; L. Nilsson, 2000), but also as knowing which reaches workplaces through the training of students to industrial workers. Vocational teachers' work is important in shaping their students to professionals and preparing the students for their future career. In this study I presented the different themes that emerged from four vocational teachers' life stories regarding the concept of professional skills. Through the life story interviews, I could show that professional skills in the industry technology program are not just about for example welding, turning or milling. There are also other skills that vocational students should acquire to succeed as professionals, and those professional skills can be understood in relation to vocational teachers' previous life experiences. Based on the vocational teachers' life stories, professional skills specifically emerge as knowing how to problem solve real technical issues, know-

ing of production in both manual and computerized cutting machines, and knowing of the unwritten rules of working life. Professional skills could be seen as knowing of creating a sense of industry related capability, and it could also include childhood related experiences that are drawn on in industrial production. Professional skills can be described as knowing constructed in an interaction between vocational teachers, students and the workplace (cf. Hiim, 2013; 2015; Lindberg, 2003b, 2003c), and also as knowing constructed on the basis of the rules and laws governing vocational education through the policy documents of schools and industry organizations. Professional skills can further be described as knowing that supports industrial workers' further education and competence development within the workplace (see e.g. Lindberg, 2003c), but also as knowing that promotes university studies, for example selecting engineering programmes. These themes of professional skills can be related to vocational teachers' life experiences.

The themes which emerge from vocational teachers' life stories can be understood in relation to Hiim's (2013; 2015) and Lindberg's (2003b) descriptions of professional skills. The themes *knowing how solving real technical problems*, *knowing of modern, and computerized machines as a basis for CNC-technical education*, *knowing that can be used for production in manual cutting machines*, *knowing of manual machines as a basis for CNC-technical education* and *knowing of mathematics as a basis for CNC-technical education* tend more towards what Hiim (2013; 2015) and Lindberg (2003b) call the tangible skills which are used in production and are visible. These aspects of professional skills are illustrated when vocational teachers speak about skills that benefit their students, can help students in

production, and can help them to solve real mechanical problems. These themes also lead me to Schaap et al. (2012) who argue that students are beginners who use specific and different learning methods in vocational schools and in workplaces. The improvement of students' learning processes needs to be adaptive and differentiated in nature[6] (ibid.). This study shows that the definition of which knowing is important and why that particular knowing is important for the students in their learning processes, have a certain relation to the vocational teachers' life experiences. Different aspects of the required knowing also become evident when vocational teachers talk about what their students should learn in their vocational education: production using manual cutting machines or programming and using the CNC machines. These aspects are highlighted further when the vocational teachers talk about the basics of workshop technology, the basics of CNC technology, and about working in manual cutting machines to understand the technology behind CNC machines. Similarly, the theme *knowing which can be used for engineering studies* tend more towards Hiim's (2013; 2015) and Lindberg's (2003b) descriptions of tangible skills which are used in production and are visible, but this theme is related to knowing that an engineer needs for a higher level of production.

The themes *knowing of creating a sense of industry related capability* and *knowing that is related to childhood experiences* tend, however, to be more in line with what Lindberg (2003b)

6 Schaap, Baartman, & De Bruijn (2012, p. 111) write: "Adaptive means that learning environments need to take students' current level of thinking and working into account during the different phases of their educational career. Differentiated learning refers to learning processes that differ between vocational schools or in workplaces, between different workplaces or between different vocations".

writes about the integration of a worker's visible and invisible skills into the profession. These aspects of professional skills are shown when vocational teachers talk about being born into the profession, perceiving tools and working with their hands as natural, and feeling capable to produce things with their hands and using these skills as professional adults. These themes also show that vocational education is complex. As vocational teachers they teach their students vocational knowledge. The focus is on knowledge which can be seen as a mixture of theory and practice (see e.g. Vähäsantanen, Saarinen, & Eteläpelto, 2009) and as a mixture of what they themselves learned from their previous vocational education and from previous workplaces (see e.g. Asghari, 2014; Green & Smith, 2002). Vocational education can consequently be influenced by vocational teachers's professional skills, as their industry related knowing guides the students in their learning process. Since vocational teachers are different individuals with different lives and professional experiences, their professional skills and competences also vary from individual to individual. This means that professional skills for the future industry can be related to who the vocational teachers in the industrial technology programme are and what professional experiences they have.

In contrast to previous themes, the theme *knowing of the unwritten rules* tends more towards what Hiim (2013; 2015) and Lindberg (2003b) write about the social skills and skills beyond those an industry worker needs to manufacture a product. This aspect of professional skills is shown when the vocational teacher talks about how an industrial worker should behave in the workplace and includes showing respect for company rules, for colleagues and for their knowledge, ensuring that

production is done in good time and with good quality, having good relationships with colleagues and collaborating well with them. Among the factors that are of importance for vocational education are vocational teachers' perceptions of the demands that society and professional life places on education (see e.g. Tuomi-Gröhn & Engeström, 2003; Vähäsantanen, Saarinen, & Eteläpelto, 2009). These unwritten rules are being developed by society and by professional life. This means that the theme *knowing of the unwritten rules* also can be seen in relation to the vocational teachers' perceptions of the demands that society and professional life place on vocational education.

Some subtleties of professional skills appear in vocational teachers' life stories that may also be related to their experiences. A vocational teacher who learned the craft by using manual machines in his own education, professional skills can include *knowing of manual machines as a basis for CNC-technical education*. For a young vocational teacher who in his childhood and youth dismantled computers, upgraded them and rebuilt them, professional skills can be *knowing of modern, and computerized machines as a basis for CNC-technical education*. And for a vocational teacher who has an engineering background, professional skills can be *knowing of mathematics as a basis for CNC-technical education*. This means that vocational teachers' life experiences can be crucial for defining professional skills, and this is something which should be problematized, discussed and taken advantage of in vocational teacher education programmes at universities, particularly when it comes to discussing the skills vocational students are expected to have in their professions.

7. CONCLUSIONS

Since this study only focuses on four vocational teachers' life stories, I cannot generally express my opinion on the professional skills which emerge from vocational teachers' life stories and prove important in their teaching. However, my study illustrates one way of approaching the knowledge of what professional skills can be. Also, my study can contribute to increased knowledge of the four selected life stories, where the findings represent a part of a larger context in terms of professional skills. A conclusion in this study is that professional skills seem to be constructed continuously as a process and throughout the lives of these teachers. Experiences from childhood, youth, education, adult life, professional life, etc. all contribute to this construction. Vocational teachers' professional experiences spiral out from childhood to vocational education, to university education, to industrial work further to their lives as vocational teachers. In this spiral, experiences change in the interaction between teachers and their surroundings, and in line with the changes in working life and technological developments. This means that professional skills which vocational students have to acquire are constructed in this spiral by their vocational teachers, based on these teachers' professional experiences. In the same way, what vocational students have to be able to produce, for the same vocational teacher, can change over time. This process depends on where in the spiral the vocational teacher stands with his/her professional experience. Another conclusion in this study is that further research on professional skills in relation to professional life stories is needed.

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Maintaining VETness in a Scholarly Environment: Voices from Exploration of Australian VET Teachers Including Researching as Part of Their Professional Practice

Lewis Hughes

Abstract: Notwithstanding debate regarding what is meant by *being scholarly*, there is an emerging Australian VET system interest in nurturing this (albeit fuzzy) attribute as evidenced in the recent formation of the VET Practitioners Research Network (VPRN). The VPRN focus being to motivate and support VET practitioners (teachers and the like) in including research, and drawing upon the research of others, as part of their professional practice. However, with this comes the paradox that *being scholarly* could lead to loss of VET unique identity in the tertiary education space which is shared with university learning.

Co-incident with VPRN establishment, the author has been (and continues) researching the circumstances of VET teachers moving toward greater engagement 'in' and 'with' research. In this exploration it has emerged that whereas there may be – for the moment – teacher reluctance to embrace the '*scholarly*' label they do routinely engage in informal research; and the notion of engaging in overt purposeful, vocationally focused, VET research – both in terms of the 'what of VET' and the 'how of

VET' – is potentially welcomed by them. Accordingly, preserving VET identity in a boundary blurring environment between VET and university may lie in VET teacher scholarly research being, vocationally, purposefully focused as adds to the welcoming-of-all nature of VET.

Keywords: VET, teacher, research, scholarly, identity

1. INTRODUCTION

Noting that what follows is but a glimpse of VET in Australia – VET in Australia is markedly different to much of Europe where the delivery is, to a large extent, in the final years of secondary education. Whereas, in Australian, VET is mostly delivered in the tertiary education space with learners drawn from the working age range of 15 – 64 years undertaking studies in dedicated registered training organisations (RTOs) – see Exhibit 1.

EXHIBIT 1. VET IN AUSTRALIA

- VET exists in parallel with universities in the tertiary education arena
- VET is an initial career pathway, a change of career pathway, and 'second-chance' gateway to learning
- 4.5 million VET participants out of a working age (15-64 years) population of approximately 16.8 million people (26.8% of working age Australians)
- 7.5% of VET students were apprentices and trainees undertaking off-the-job training
- 92.5% VET students were undertaking studies not connected to apprenticeship or traineeship

(Source: NCVER (2016), *Total VET Students and Courses 2015*, NCVER, Adelaide)

- Public Registered Training Organisations (RTOs) – 42 (at 1st March 2017)
- Private RTOs – 4594 (at 1st March 2017)
  (Source: Emailed advice from Department of Education and Training 19th March 2017)

Further, in addition to preparation for first employment, VET in Australia is for many second chance learning and/or supporting career change even for otherwise professionally qualified people. With this in mind, it could be said the *VETness* (inherent quality) of VET resides largely in its vocationally orientated, welcoming-of-all, and dipping-in and dipping-out throughout working life, disposition. Arguably, consequent upon the shorter and more intensive nature of pulses of learning coupled with the intent (but not necessarily routinely practiced) of recognising prior learning, VET is highly supportive of the formal component of lifelong learning in a way that traditional university education isn't at the undergraduate level.

VET graduate voice: *The best thing that ever happened to me is that I hurt my back* – Paraphrasing of adult male remarking upon life-satisfaction that he now finds in working as a VET qualified social worker. This being consequent upon a back injury forcing a change of employment from truck driver to now drug and alcohol counselling and other social work. For this 45+ years of age man, VET was an immediately accessible pathway (different to university where entry requirements would have inhibited enrolment) to new career and discovering

meaning in life. And the motivation and support of an *educationalist* orientated VET teacher as he achieved qualification was highly influential. This case was an inclusion in informing Hughes (2008) and, subsequently, was in mind in the Hughes and Hughes (2011, 2012, 2013) exploration of the manner in which VET, when well taught, adds to social capital.

Whilst many (if not most) learners come to VET in Australia well prepared for further learning at the level of their appropriate entry, it is in the nature of VET – different to university where students with learning weakness have been traditionally culled from the entry cohort – that such students are welcomed. Accordingly, it follows that pedagogical capability in an Australian VET teacher (and possibly in other geographies where VET is perceived as low-status compared to university) is an important attribute; and if not developed sufficiently in teacher training must be developed in the course of employment. Teacher engagement 'in' and 'with' VET delivery research as a continuing professional development inclusion in teaching practice beckons.

VET teacher voice: *'...I am also* [in addition to being a technology teacher – teaching apprentices] *a PhD student. Just completed my Masters over at XYZ* [pseudonym] *University and basically did creative productive classrooms – putting social justice issues into the mathematics classroom to try and improve student learning. And I finished my Masters on that and passed that quite well. And now going to do PhD – looking at mathematics anxiety in vocational education and training. .... And from there I would like to come back to the teachers here. And*

sort of come back with my research and say 'Well here's the study that I have done. – this is what I have found. And hope to get some of my colleagues to share experiences. It is the catalyst to hopefully make more research and make more awareness in the general area.' (Teacher, Provider B, 1st meeting, 085)

Note: This intent to share the outcome of research with VET colleagues so as to enrich VET outcomes for students is suggested as a pointer toward maintaining *VETness* – the uniqueness of VET offering compared to university learning – in a scholarly environment. The voices in current research (Hughes 2017a, 2017b) speak of VET research being *purposefully focussed upon enriched vocational outcomes* for learners – this relates to the 'what' of the learning and the 'how' of the learning.

With the foregoing graduate and teacher voices in mind, this paper posits that Australian VET learners are best served by teachers with educational capabilities and scholarly attributes which complement their vocational knowledge and skills – i.e. the teacher being a facilitator of rich learning addressing both the 'E' and 'T' in VET. And noting that Australian VET students come to their learning with varying initial learning capacity, confidence, and commitment there is much to be gained by the teacher being more than just a trainer of skills.

VET Manager voice: In response to the question – Why would a VET teacher engage in research and draw upon the research of others? – '*To learn more about the current advances in their discipline – hopefully that will filter back to the classroom. ... A better learning experience for the students. .... So the*

students will have a more up-to-date knowledge and be more effective in their chosen roles – in their employment, in their jobs. …So [for example] *that the Advanced Diploma of Justice VET students go out there they know the best – the best legislation; they are aware of all the current most up to date emerging legislations and laws so they can better serve their client. Better, more effective, practitioners in their chosen field.*' (Manager, Provider A, 2nd meeting, 051)

In drawing upon an Advanced Diploma example, the above 'manager voice' points to the range of VET offering from Certificate I and II entry level to advanced, highly regarded, qualification. In this respect, in the course of my VET researching there have been examples of people progressing from low level engagement – '*never thought I could*' (paraphrasing) – to high level achievement including progress to high academic applause. Also, this manager's voice reinforces the prospect that VET teacher engagement 'in' and 'with' research has much potential as a contributor to maintaining vocational currency – a VET system requirement but not (yet) adequately system supported.

Having raised the matter of teacher vocational currency, it should be borne in mind that the Australian VET system also requires teachers to be engaged in continuing professional development (CPD) – in this respect the product of a teacher's research has value as evidence of self-managed CPD and, beyond this, engagement with the research and/or product by others has expanded CPD value.

VET teacher voice: As an alerting to the possibility that an argument may need to be advanced that researching and draw-

ing upon research can be a significant CPD activity – '*Saying about valuing research, a college that I worked at actually wouldn't pass my research as professional development. They didn't value it all and now it's actually published in international journals. So I think it's just the culture – not saying it's TAFEs* [Public RTO] – *it's just different institutions.* (Teacher, Provider B, 1st meeting, 1B1015)

2. RESEARCH INFORMING THIS PAPER – FROM WHERE THE VOICES ARE DERIVED

Hughes (2000): Prompted by curiosity regarding the extent to which VET teachers actually draw upon VET research, a combined questionnaire and interview approach yielded reason to suggest that there was latent interest but teachers were not routinely invited/encouraged to so engage – drawing upon VET research was not in mind. As this appears to be the case to the current day, with much loss to VET vigour, the author's involvement in establishment of the VPRN flows from this earlier researching experience. Voices from this ethnographic study inform this paper.

Hughes (2007): Prompted by experience that people do not routinely value the fullness of what they – and others – know and can do and that organisations (broadly defined) likewise tend to be blind to this, ethnographic research into the relationship between lifelong learning and organisational achievement yielded a model coupling valuing of learning (the 'L') with nurturing a culture of valuing learning (the 'C') and valuing the diversity of impacting motivations (the 'M') – the LCM

Achievement Model (see Figure 1). With the 'Sweet Spot' (VEN diagram intersection of the L, C and M) articulated as '*Maintaining VETness in a scholarly environment*' attention to the valuing of scholarly learning in a VET way, the nurturing of VET culture as uniquely contributing in the tertiary education space and regard for purposeful VET motivations are suggested as core elements of *VETness*. Accordingly, LCM Achievement Model resonating voices from the other, here introduced, studies inform this paper.

Hughes (2008): Prompted by a social and community service sector future needs to recruit qualified staff, a scoping study of the potential to recruit men 45+ years, in changing of career circumstances was undertaken and reported upon at the 2008 Community Services and Health Industry Skills Council Annual Conference. Voices from this ethnographic study inform this paper.

Hughes and Hughes (2011, 2012, 2013): Prompted by the Northern Melbourne Institute of TAFE (VET provider) Centre of Excellence for Deaf and Hard of Hearing Students winning two Victorian Training Awards – one for the Centre and the other for the Certificate IV in Training and Assessment being delivered entirely in AUSLAN (sign language) – Libby and I undertook a series of studies exploring the relationship between VET when well taught and adding to social capital via the accrual of VET learner social capital attributes such as pride in self, enthusiasm in drawing upon what they know and can do, adding to social cohesion in the workplace (and beyond) and being lifelong learners. Voices from these ethnographic studies inform this paper.

Hughes (2017a & 2017b – forthcoming): Beginning May 2016, I have been ethnographically exploring the question '*What motivates, and/or inhibits VET teachers in drawing upon research and, themselves, engaging in research – i.e. being reflective practitioners?*' Voices from outcomes to date inform this paper.

3. GOING SCHOLARLY AND PRESERVING VET IDENTITY – 'VETNESS'

Acknowledging that '*scholarly*' is a contested descriptor, in this paper '*scholarly*' is taken to convey a sense that a VET teacher values being an educator, is reflective with respect to their teaching practice, and includes researching and drawing upon the research of others as part of their teaching practice. Such a teacher is likely to see themselves as a teacher of a vocational set of competencies more so than vocationally identified and happening to be a teacher – e.g. 'I am a teacher of plumbing more so than a plumber who happens to be a teacher'.

Continuing with the plumbing example – To be a plumbing teacher is more than just knowing how to join the pipes and other plumbing work. To be a plumbing teacher – as a career change from being a plumber – is to draw upon facilitating of learning capability and in a way which, beyond just the technical aspects of a job, nurtures such learner attributes as pride in-self and pride in their work.

> **A VET teacher voice:** *In addition to teaching plumbing, I teach them to be a man* (paraphrasing of a teacher informing Hughes and Hughes (2012))

A VET manager voice: *I can tell who the educators* [beyond just a skills trainer] *are by the way in which the students interact with different teachers and who the students come back to visit after graduation. And, I see the students changing* [under the influence of the educators] *from how they were at the beginning to how they become – they walk tall.* (Paraphrasing of a VET head of building trades department informing Hughes and Hughes (2013))

In the foregoing, my using a plumbing circumstance is deliberate as it was the 1996 occurrence of flying two VET plumbing teachers into an Indigenous Australian island community to facilitate a 'working with plastic pipes and fittings 'course that – on reflection – was the seed to me consciously thinking about the learning outcomes that an educationally orientated trade teacher brought to the 'transfer of skills' when coupled with community infrastructure upgrading. Such work being directed at strengthening community sustainability as the underlying goal. In this instance, the plumbing teachers were very much in educationalist teaching mode, but they may not have thought of themselves in this way.

A VET practitioner voice: Beyond the issue of whether a VET teacher identifies as a teacher or a trades (broadly defined) person, there is also the matter of whether a teacher sees themselves as an educator – '*I think we were discussing things earlier and you made a comment that a lot of teachers – vocational teachers – see themselves as vocational practitioners more than they see themselves in VET as teachers. And that's part of the issue – not educators.*' (Learning quality practitioner, Provider B, 2nd meeting, 083)

In the Indigenous community case, the mutual respect between teacher and student was evident as the learning group – some with very low numeracy and literacy skills – engaged in laboratory structured learning where those with higher numeracy and literacy skills, unobtrusively, assisted the others. A casual observer would not have noticed that the teachers were nurturing this occurrence; and this would not have occurred if the teachers acted in instructor mode. With the benefit of hindsight, these plumbing teachers were a product of two years of teacher training in which theory was coupled with teaching experience. The teaching experience was mentor supported; and the placement (akin to apprenticeship) produced trade teachers who thought of themselves – and acted accordingly – as educators contributing to their trade as a step beyond working in the trade – Regrettably, in my view, VET teacher training is now reduced to a Certificate IV in Training and Assessment with nominally 333 – 350 training hours and has, in the past (earlier iterations) been delivered in as little as 10 days. As a consequence, there are VET teachers with only superficial capability in an educating sense.

Another aspect of this plumbing example, very germane to this paper, I was not to know – at the time – that this VET provider plumbing teaching department was, now, to become an exemplar component of VET moving into applied research and engaged in world leading collecting and safe use of otherwise waste water in large housing estate developments. The provider now has a formally established Centre for Applied Research and Innovation as a vehicle for developing industry and the like partnerships in conducting industry based research. Accordingly, in this provider, there is enhanced prospect of teachers (including sessional) embracing involvement in research as part of their

teaching practice – i.e. *going scholarly* in so far as engaging 'in' and 'with' industry based research is *scholarly*.

Whilst the foregoing establishment of an applied research centre is a harbinger of other VET providers following, the realisation by VET authorities that teaching quality is at risk has caused an increasing establishment of centres for teaching excellence (variously titled and structured) within VET providers. Such occurrences will (if not already) bring about a circumstance where VET teachers are increasingly reflective regarding their teaching practice and likely to embrace researching and drawing upon the research of others as part of their teaching practice. If so, VET teachers will look more and more like university lecturers and the questions – possibly provocative – arise:

> *In Australia, why do we have VET and Universities?*
> (Noting that, in respect of universities, I resist using the term 'higher education' as it is demeaning of VET)
> and
> *In Australia, what is the difference between VET learning and University learning?*

Whilst the *VET teachers and research* exploration is a work-in-progress, a university voice and a composite VET voice are offered as grounding for further exploration of the point of difference – each having value, but complementarily different.

A UNIVERSITY VOICE

In his 14th November 2010 Boyer Lecture – '*The Republic of Learning: The Global Moment*' – Professor Glyn Davis, Vice

Chancellor of the University of Melbourne, said that a university is orientated toward its graduates interrogating and understanding the world; and this yields human capital relating to future prosperity and cultural capital relating to meaning in our lives. In asserting this view, Davis cautions that to remain [seemingly acknowledging a blurring of boundary between university and VET] more than just skills factories, universities must hold firm to the principles of wide-ranging curiosity, questioning, and rigour in the search for truth and knowledge.

A composite VET_voice – for consideration – arising from current exploration of VET teachers engaging 'in' and 'with research:

A VET provider (including a dual sector provider when in 'VET' mode) is responsive to a student's certified competency needs – including 2nd chance learners – as relate to securing employment in the near term and (I suggest) having resilience in the changing world of work. This said, the *adult learning* component of VET has high value as an entry level pathway for many and finding vocational fulfilment through learning for these and others.

The distinction: A VET provider is mostly vocationally focused whereas a university is educationally for-life focused – each, being differently nuanced in terms of learning experience, but of equal/entwining value to society. Noting that there is learner movement between the two in pursuit of 'needs' and 'wants' from time-to-time.

In essence, VET –

- welcomes all – learning supportive and life changing for many;
- has multiple points of entry and exit allowing 'dipping in' and 'dipping out' as suits an individual's vocational needs from time to time; and
- contributes much in the spectrum of lifelong learning and values prior learning.

The above – for consideration – voiced: If the VET product difference is a pathway to preserving *VETness* – *VETness* being that quality which intrinsically characterises VET learning and value – it follows that VET must give attention to graduates actually being competent – not presently, universally, the case as there is variability in commitment to delivery quality. In this regard, having in mind that teacher professional pride and sense of identity underpins delivery quality, the VET *scholarly* pursuit is 'voiced' as an imperative. It is in this context that significant stakeholders in VET, along with others similarly committed, have recently acted to establish the VET Practitioners Research Network (VPRN) as a vehicle to motivate and support VET practitioners in the move toward *going scholarly*. And the matter of preserving VET identity in a *scholarly* environment has, consequently, arisen within VPRN conversations.

4. THE VET PRACTITIONER RESEARCH NETWORK (VPRN) AND REBUTTAL OF VET LOW STATUS

Motivated by *changing world of work* and somewhat related *changing world of learning* influences upon social and economic

productivity outcomes, an online portal – VPRN www.vprn.edu.au – for VET practitioners (teachers and others such as program coordinators) has been recently established. As I have had a role in the establishment of the VPRN, this experience and voices of stakeholders are contextual background to this paper. The VPRN role is to support practitioners in drawing upon research data and, themselves, engaging in research as part of their professional practice. And, associated with this initiative, the matter of preserving unique VET identity whilst increasing *scholarly* profile has arisen as meriting attention – VET not wanting to look and act as a university.

On the matter of VET identity – and associated valuing – it has long been the case that Australian VET is thought, by many, to be second class as a non-compulsory pathway to tertiary education – the overriding aspiration of parents and students being university education. Accordingly, with wanting to increase the valuing of VET whilst preserving VET unique identity in mind, actions directed at enriching visible *scholarly* activity by VET teachers must be done in such a way as to preserve, and strengthen, VET identity and community valuing of VET as different to, but of value, when compared to university. However, it is more than just irritating that university learning is categorised as higher education which is a terminology disrespectful of VET. Why should it be thought that a plumber (or the like) is less educated, in a respectful sense, than a university graduate? – Yes, differently educated, but no lesser an educated person.

In acknowledging that the reader may wonder why the sensitivity regarding VET being disrespected as compared to university, the history of VET in Australia is one of substantial contribu-

tion to society, but struggling for appropriate valuing. VET has been contributing under the cloud of an ill-informed view of VET as a further education pathway for those students seemingly lacking the learning capacity to engage in university-like learning. The thinking being that 'If the young person is not so good academically (or so perceived) they might be OK with their hands'. Therefore, apprenticeship or something similar – not university – is the pathway for them'. I reject this, as an attribute of VET (unlike university) is its *welcoming-of-the-all* arising from Mechanics' Institute origins of 19th Century Scotland and England – academic attributes may be latent.

Inherent in welcoming seemingly potentially low academic achievers, VET has always, within its spectrum of learners, nurtured high *learning-capable* people and has put many on the pathway to doctoral qualifications – me included. This is in contrast to the excluding nature of universities where the gateway to admission, at the undergraduate level, is mostly secondary school academic achievement quantified by the Australian Tertiary Admission Rank (ATAR). The ATAR being arrived at by positioning a student, in peer comparison rank, according to academic outcomes in their final year of secondary education.

In Victoria (and, similarly, elsewhere in Australia), the focus upon ATAR is said to be leading to some (if not many) secondary schools seeking to enhance their standing in the education marketplace by persuading what they consider as weak (academic achieving) students to *not* participate in the Victorian Certificate of Education (VCE) – VCE programs being the learning stream leading to university. So VET identity is confused and under-valued. Thus giving rise to the cautionary thought that in moving VET teachers toward being valued as

scholarly we don't inadvertently reduce the possibility of VET being identified as having unique high value, but different to university. Accordingly, it is in mind that the VPRN initiative, and the associated thrust for VET practitioners *going scholarly*, has the prospect of lifting the 'being-valued' profile of VET, but requires deliberate effort to do these things in a way(s) which enhances VET profile rather than shift it to looking just like a university experience, but with a different name. Thus the arising question –

> So what is the difference between VET and University?

This question, to a large degree, is prompted by the blurring of the boundary between VET and university as VET providers move into the higher education, non-university provider, space and universities establish VET like colleges as bridges to university qualification where relatively low ATAR scores inhibit direct entry to university.

In response to the differing between VET and university question, and informed by voices in the current research, I offer the following for consideration –

EXHIBIT 2

THE DIFFERENTIATION – VET WITH A SCHOLARLY TWIST AS DIFFERENT TO UNIVERSITY

Consequent upon the establishment of the VPRN and its anticipated *scholarly* enhancing contribution to VET research culture within providers, there is a realisation that avoiding VET

appearing to be university-like is desirable as it is in the community's interests that the unique contribution of VET is preserved and celebrated.

Accordingly, and with high regard for both VET and university education – I offer a view that in today's world, universities nurture learning in the sense that they are essentially researching entities – adding to the stock of knowledge – where the student body has a sustaining place and is a pool of potential recruits (albeit a small percentage going on to post-graduate researching) to the mission. I acknowledge that this invites argument, but the 'publications 'demand upon academics would appear to be an example supporting this view.

In comparison to university, I submit that VET is focused upon the student as the raison d'etre and that any research which is undertaken has as its motivation better meeting the employment aspirations of students and the workforce needs of industry (broadly defined). To expand – I suggest that VET is focussed upon vocational capabilities of people and is *with-specific-purpose* orientated – i.e. vocational as compared to the broad church of generating knowledge as in the university case. Also, as a consequence of learners dipping in and out of VET it is, arguably, more lifelong learning orientated than university in adding to community & economic productivity – i.e. VET supports vocationally orientated pulses of learning in a way which university doesn't.

In essence, whilst both university and VET are serving the community in respect of economic productivity and social cohesion, universities are knowledge driven and VET is student driven. Whilst this is a simplistic differentiation, it may serve as a discussion point leading to better defining of respective places in

the tertiary education arena and appropriate equivalence – but different – of valuing.

In contemplating the differences and compatibilities as distinguish VET and university education, I am reminded of my own experience where a VET graduate was regarded as more job ready than a university graduate. Whereas, a university graduate brought more theoretical insight as they worked toward being job capable. Interestingly, and as a generalisation, over time both graduates find common capability ground. Accordingly, a learner's choice between VET or university may well be a matter of level of required immediacy with respect to self, career and contribution to social economic strength & entwined social cohesion. Of course, a significant difference resides in that that VET welcomes all in a way that universities, mostly, don't; and the entry of second-chance learners to tertiary education is a significant difference. This is not putting one against the other – it is just that there is a difference and both are worthy of valuing and respect.

With the foregoing in mind, my current exploration of 'VET teachers and research', and its resonance with the VPRN raison d'etre, gives cause to suggest that evidence-based sharing and acting by VET teachers has much connection to *being scholarly*. And, even though VET teacher respondents are seemingly reluctant to identify themselves as *scholarly* – equating this with university academia – in the current research (Hughes 2017a & 2017b – forthcoming) research interlocutors remark that VET teachers do routinely engage in informal research as part of their practice. It is this which caused a VET manager (convening a research informing conversation) to set the title of a second group sharing of views as –

Why do VET teachers not participate in research as an activity... or do they?

A manager voice (the one who set the question): In response to the question – "*I think that they probably do it, but they have never aligned it to the terminology that is now out in research. So, I think that they are often reflective practitioners but they don't think of themselves that way. I think that they do go home of a night and go 'Why didn't that work?' 'And what can I do differently?' I think that they do that by nature and I think that they do actually investigate through their network or through conversation to improve their delivery or what idea would work with this particular cohort. And they don't see that as a research activity, but in actual fact it is changing the way that they do things in the future. So it is not based upon a literature review but in some ways they are doing that by going to people who are considered experienced who may have done that sort of investigation."* (Manager, Provider B, 2nd meeting, 400)

A teacher/education developer voice: Relating to, but preceding, the above offering to the group conversation – *If you look at the typical demographic of VET – VET teachers – and especially traditional trades researching papers is* [inaudible] *academic. And therefore, you know,* [inaudible] *inform like that because let's face it probably a lot of the guys that we have got have left school when they were fifteen – they don't want to write. They don't want to engage in that because they see that as being* [inaudible] *and downplay themselves and go "I am just a plumber" or "Just a mechanic"* (Teacher/Education Developer, Provider B, 2nd meeting, 123)

Hitherto, VET in Australia hasn't given overt attention to teachers being *scholarly* in nature; and, indeed, accepting that as little as ten days training was acceptable preparation to be a VET teacher. However, there is now an emerging VET system interest in nurturing the attribute of being *scholarly* –albeit begging the question 'What is meant by this?' and, in response, suggesting that evidence-based conversing and acting has much connection to being *scholarly*. Accordingly, what had previously seemed unlikely, there is now support for the proposition that there is gain in VET teachers researching as part of their professional practice – leading to establishment of the VPRN and me exploring VET teachers researching and drawing upon the research of others as part of their professional practice.

Although there is uncertainty of meaning, VET teachers are seemingly reluctant to be thought of as *scholarly* – equating this with university academia. Interestingly, and maybe fortuitous, exploring and attending to this VET teacher initial perception may lead to the key for securing VET identity in a tertiary education environment where *going scholarly* potentially adds to blurring of the boundary between VET and university. The issue being that VET delivers, in the tertiary arena, high value learning which is different to university; and preserving this difference is important so as to maintain the VET, enriching, contributions to society. There is a weakening VET identity hazard if VET teachers, as researchers, look like university academics. If such similarity was to occur, then the respective identities may merge and much richness in post-compulsory education options is depleted. Accordingly, this paper addresses maintaining *VETness* by emphasis upon VET (and hence teacher engagement with research) as vocationally purposeful as compared to the university research focus of adding to the body of knowledge.

The above said, the capability of a VET teacher to motivate and support learners in acquiring knowledge and skills – appropriate to the changing world of work – is clearly at the core of what a VET teacher does. In this sense, pedagogical capability is an imperative and a scholarly disposition toward VET research has much to commend it. Accordingly, this paper is grounded in the proposition that learning productivity accrues via educationally – entwined with *being scholarly* – capable VET teachers; and the premise that it's acceptable for a VET teacher to be only weakly so capable is more than just false – it is costly and delusionary dangerous as awarded certification may not align with actual competency. Note: Mostly, the VET teacher is also the assessor.

With the caution regarding teachers being pedagogically capable in mind, there is emerging use of the term '*scholarly*' with respect to Australian VET teacher practice and including researching and drawing upon the research of others as part of this practice. In essence, this foreshadows the Australian VET environment being valued as '*scholarly*' and affirming its status in the tertiary education space.

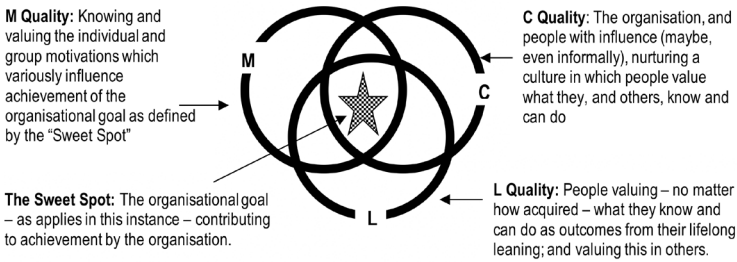
> **A voice from within a VET provider peak body:** Regarding why joining the VET Practitioner Research Network (VPRN). – '*I joined to engage with, promote and share research activity within the VET sector. My expectations are vibrant conversations and sharing between practitioners. And my thoughts on being scholarly are that the Boyer model works for VET teachers, but employs a language that is unfamiliar. We need to 'name and claim' the scholarly activity that happens and informs teaching* [in VET].' (Influential VET voice)

Note: It would be remiss, for an overview of VET in Australia, to omit reference to the trend toward casualisation of the VET workforce. Whilst numbers are not available to the author at this time, it is felt that there are a large (and growing) number of casual/sessional teachers – maybe already in the majority. Under such circumstance, the prospect of VET teachers – as the norm – engaging 'in' and 'with' research is challenging. However, the role of staff teachers as Senior Educators (itself a curious position title in a VET system in which the place of 'E' in VET is evaporating) takes on, maybe, un-intended significance. In this regard, it is interesting that one of the research environments informing Hughes (2017a, 2017b) has taken a deliberate step of offering VET provider badged clothing to the sessional teachers – the intention being to strengthen identification with the provider. With this in mind, there is the prospect of Senior Educators having special, obligation to nature scholarly disposition within the VET teaching workforce; and the VPRN may have a significant role in supporting such an outcome.

5. WHERE TO NOW? – DRAWING UPON THE LCM ACHIEVEMENT MODEL (HUGHES 2007)

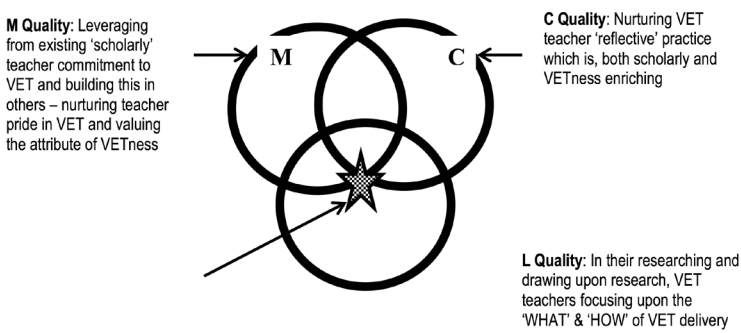
Firstly, a word about the LCM Achievement Model (Hughes 2007) – Figure 1. The model is an outcome of PhD candidacy research primarily in the Country Fire Authority of Victoria (CFA) and focused upon retaining a volunteer fire fighting force of approximately 50,000. Research was also undertaken in the water industry, waste management and contract cleaning. In all instances, the arena of exploration was the relationship between lifelong learning and organisational achievement.

Figure 1:
LCM Achievement Model (Hughes 2007) – A generic representation



Whilst my exploration of what motivates and/or inhibits VET teachers in drawing upon research and, themselves, engaging in research is a continuing work-in-progress, the insights accrued to-date suggest an approach to asserting and maintaining VET identity – VETness – in a scholarly environment is illustrated in Figure 2.

Figure 2:
LCM Achievement Model (Hughes 2007) utility in asserting and maintaining VET identity – VETness – in a scholarly environment



In essence, the LCM Achievement Model (Hughes 2007) posits that –

- **The 'L':** Individuals valuing the outcomes of their lifelong learning, and that of others, along with the organisation valuing what the organisation's people (including influencing people external to the organisation) know and can do, is a significant contributor to organisational achievement. Noting that 'organisation' is broadly defined – e.g. a community can be likened to an organisation as, too, can be the VET system (whole or in parts). Further noting that people and organisations are prone to under-value the depth and breadth of the outcomes from their lifelong learning no matter how achieved.

In respect of asserting and maintaining VETness (Figure 2): Actions are required which lead to VET teachers – pedagogically and vocationally – PURPOSEFULLY researching and drawing upon the research of others which exercise their reflective capacity; brings tacit knowledge into the explicit realm (Maira & Scott Morgan 1997, pp. 221-225); generates new knowledge; and, through sharing, increases the prospect of new knowledge being valued and acted upon by self and by others – strengthening VET delivery.

Note: It is in the teacher purposeful researching informing strong vocational outcomes (the 'What') and enriched teaching (the 'How') which grounds maintaining VETness in a scholarly environment.

- The 'C': An organisation (or the like) having a culture which nurtures valuing of lifelong learning (in which VETness focused researching has, potentially, a significant place as part of a VET teacher's professional practice) stands to gain much from an expanded knowledge resource. Importantly, such nurturing has the potential to cause people to more fully recognise what they know and can do and what others know and can do in a manner which is coupled to actually drawing upon this reservoir of knowledge and entwined capacity. Importantly, valuing/nurturing of lifelong learning culture is a foundation upon which to build cohesion between people and unity within an organisation. In the case of the CFA, the sense of 'family' was a significant retention and commitment factor which I have found in other organisations – including within VET. Consider the difference in potential outcome accruing from VET teachers feeling that they are a lone practitioner (e.g. consequent upon demise of staff room regular interaction) versus valuing their membership of a VET scholarly community of practice where there is on-call contributing and sharing.

In respect of asserting and maintaining VETness (Figure 2): Actions are required which nurture a culture in which VET teachers are more (than would otherwise be the case) motivated to research and draw upon the research of others in their contributing to strengthened VET delivery. A VET provider with such a lifelong learning nurturing culture expands both organisational and individual capability – to the benefit of the student and enhancing a teacher's professional satisfaction. For example,

consider what might be the outcome – personally and organisationally – from inviting sessional teachers to partner with staff teachers in researching some aspect of VET delivery.

See Stephenson 1998 for an approach to learning organisation capability and quality – although university focused it does have relevance to VET.

- **The 'M':** Self-evidently, there are a myriad of potential motivations which impact upon organisational achievement. However, such opportunities are vulnerable to not being acted upon and therefore evaporating.

In respect of asserting and maintaining VETness (Figure 2): In my experience, the beginning late 1980s Australian VET training reforms (Harris, Guthrie, Hobart & Lundberg 1995) – which have become a constant occurrence within Australian VET – have generated de-stabilising uncertainty within the VET workforce which is damaging delivery. Indeed, in managing this probable continuing occurrence, there could be strong argument for 'resilience' support for VET teachers and the like – maybe, engaging 'in' and 'with' research has a part in this as it potentially moves VET teachers from enduring change to agents of change.

With resilience in mind, actions leading to strengthened sense of VET teacher identity as *scholarly* in a VET way have much to offer. I offer the view that there is connection between a VET teacher's pride-in-self and the community perceived status of VET. Enhanced status of VET is entwined with enhanced status of VET teachers and their motivations to engage in self-empowering research and drawing upon the research of others.

- **The Sweet Spot:** The utility of the LCM Achievement Model resides largely in a process where an organisation objective (the Sweet Spot) – such as retention of CFA volunteers or VET teachers researching as part of teaching practice – is set and the 'L', 'C' and 'M' attended to in a manner which supports achievement of the objective.

In respect of asserting and maintaining VETness (Figure 2): Setting the Sweet Spot as '*Maintaining VET identity (VETness) in a scholarly environment*' becomes the focus of identifying the characteristic(s) of VETness and acting to support teachers in valuing the totality of their lifelong learning as expanded by researching and drawing upon the research of others. To this is added, ensuring an organisation (provider and systemic) culture which nurtures valuing of outcomes from lifelong learning – researching and drawing upon the research of others being a significant part of this. And, of pivotal importance, are actions in which the VET system (the influencing elements) is seen to be responsive to the milieu of motivations which underpin teacher pride in contributing to VETness richness.

Noting that in the course of the research informing conversations with VET practitioners (teachers and others closely connected to delivery), the notion of VETness has come to include vocationally focused learning, welcoming of all as learners, recognising and valuing the prior learning (from whatever source and means) which people bring to their current VET learning, supporting 'dipping in' and 'dipping out' as meets (from time to time) needs of learners, and accessibility to learning for the many. Also the act of sharing views on what it means to be scholarly in a VET environment adds much to discovery and defense of VETness.

The above said, the act of striving to define VETness, within a provider, has the potential to yield understanding which goes beyond the general – to VET system advantage – to discovering pathways which advantageously differentiated the provider in the VET marketplace.

In conclusion, for the moment, I reiterate that the research informing this paper is a work-in-progress. Accordingly, what is here offered is a sharing of perceptions to-date with the objective of adding to the conversation regarding the scholarly aspects of VET.

In particular, conversations regarding the scholarly aspects of VET have much connection to matters arising from the changing world of work and the entwined changing world of learning. And this entwining conversation being much influenced by

> What is (or could be) our VETness! – not put as a question but an asserting of esteemed place in the tertiary education arena

And this asserting, leading us to the role of a VET teacher (and other practitioners) in a scholarly environment where the practice of researching informs, motivates and empowers a teacher as a proud contributor to social and economic productivity.

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Individual-Oriented Curricula: A Challenge for Teachers at Vocational Schools in Germany

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Abstract: The planning of lessons that meet the requirements of individual life situations and learners' qualifications calls for the development of individual-oriented school curricula. Consequently, an intensive analysis and interpretation of curricular frameworks from an individual-oriented perspective is needed. As a result, vocational school teachers are facing complex didactic challenges regarding curriculum- and teaching development. However, on the one hand studies highlight that the interpretation of curricular standards is almost irrelevant when it comes to the planning of lessons (e.g., Seifried 2009). On the other hand, insights gathered from a project on the design of a competence-oriented curriculum for the apprenticeship of merchants for office management demonstrate that the planning of school curricular does not necessarily lead to educational changes (Tramm & Naeve-Stoß 2015). Therefore, based on the problem outlined above the paper discusses opportunities for an enhanced orientation towards an individual-oriented curriculum- and teaching development. For this purpose, the paper draws on the concept of development tasks (Havighurst 1963)

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as an opportunity for interrelating standardized and individual educational programs (see Kutscha 2011). Particular attention is paid to the resulting requirements for curriculum development and lesson planning as well as for human resource- and organizational development. In addition, implications for existing research desiderata will be discussed.

Keywords: Individual-oriented curriculum- and teaching development, VET-teacher education.

1. INTRODUCTION

There is currently a trend towards learner orientation, not only in vocational education. Everywhere you look there is demand for learner-oriented educational offers, which on the one hand are focused on the individual requirements and circumstances of the learner, and are on the other hand initiated within the context of subjectively significant learning and educational processes (cf. e.g., Bylinski 2016, 2015; Rützel 2016; Zoyke 2016; Kremer et al. 2015; Buchmann/Bylinski 2013; Bylinski/Rützel 2011).

These demands are based on learning and development theory considerations, as well as the target of educational policy to enable all people to participate in societal life and the shaping of society. In this context, participation in gainful activity plays a crucial role, since employment constitutes an important part of a person's self-realisation.

In order to achieve this target, it is both necessary to grant all people access to education and also to design educational offers based on the individual requirements of learners, i.e. put in place a learner-oriented approach to education. The overall

goal of vocational education is therefore to provide all people with a suitable entry to the world of work. A central challenge in designing vocational education processes is the development of educational structures and offers, which provide all people with equal opportunities and the necessary support, tailored to the individual.

The core issue, and there seems to be a broad consensus regarding this, is that the learning individuals become the point of origin and focus of didactic and pedagogical action (e.g., Tramm et al. 2014). However, in consideration of actual educational practice it is clear that learner-oriented curriculum and lesson planning present a complex challenge to teachers, including those at vocational colleges. For example, a stronger focus on individuals requires a substantiated diagnosis of the initial learning situation of the respective individuals and knowledge of their respective learning and development requirements, to form the basis on which individualised educational offers are designed. The design of such more learner-oriented educational offers also requires more complex development work from teachers and therefore a change to their current methods and routines concerning curriculum and lesson planning. After all, the central didactic categories of goals, methods, content and media must be interpreted from the perspective of the learners.

Even though intensive development work on learner-oriented lesson planning is currently taking place at vocational colleges, these planning processes are often limited to the design of lesson sequences in the context of developing more internally differentiated and individualised lesson units which meet individual support requirements. The planning activities are less focused on the entire curriculum, but already seek out oppor-

tunities to establish more consistent learner orientation at this stage. However, in my consideration, a focus on the entire curriculum would be indispensable in order to model individual educational and development processes and provide a holistic, learner-oriented educational service at the level of educational course targets and the key content they relate to.

The present paper approaches this problem situation, by first presenting the development task construct according to Havighurst (1963), and then discussing the potential of, but also the possible resulting challenges and consequences for, learner-oriented curriculum and lesson planning in light of this concept. Before the deliberations of Havighurst are presented and put up for discussion, the second chapter will introduce the challenges resulting from more consistent learner orientation. On this basis, a summarising overview of insights into teachers' planning activities will be provided. Expectations of in-school curriculum construction and lesson planning as well as staff and organisation development are discussed, and existing research desiderata are highlighted, to round the paper off.

2. ON THE NEED FOR LEARNER ORIENTATION FOR CURRICULA AND LESSONS

2.1 ON THE PLANNING ACTIONS OF TEACHERS

Lessons planning of teachers is certainly not limited to the planning of a single and isolated lesson. In fact, the opposite applies. Lessons are embedded in complex arrangements of teaching and learning. These, in turn, are related to the school curriculum, which encompasses the complex planning and sequencing of

lessons for the entire course of education, whereby the school curriculum emerges from the development of school affiliated curricula that are based on curricular standards. In this sense, different levels of lesson planning can be distinguished (cf. e.g., Tramm 2016; Tramm/Krille 2016; Seifried 2009a), whereby the orientation towards subjective conditions and life situations should be considered along all levels.

However, this is not the place to provide a systematic and comprehensive review on the planning actions of teachers. Instead, the following is a summary of key findings from studies on planning actions of teachers in consideration of the challenges that arise from learner-oriented curriculum- and teaching development.

To begin with, it can be ascertained, that studies which reconstruct and analyze actions of teachers in the context of lesson planning, unanimously conclude that the learner is only considered rudimentary. For instance, Bromme (1981) as well as Wengert (1989) and Haas (1998) conclude that teachers primarily focus on the average pupil and the class "as a whole" when it comes to the planning of lessons. Accordingly, measures of differentiation and individualization are rarely considered for lesson planning (cf. Seifried 2009a, p. 134).

A study conducted by Pfannkuche (2013) examines the planning activities of trainee teachers. He notes that planning activities of trainee teachers depend on a problematic impression of students, leading to "more or less restrictive forms of teaching" (Pfannkuche 2013, p. 332). Given the fact that trainee teachers attribute students both "poor intellectual capabilities" as well as "poor motivational responsiveness" (ibid), innovative teaching concepts are not planned and implemented. Instead, trainee

teachers are guided by the objective of plan realization. For this purpose, students are "instrumentalized" (Pfannkuche 2013, 333). Likewise, Radtke (1996, p. 93) considers the limited perception of teachers with regard to students' capabilities as a central obstacle for innovative curricula and teaching. He argues that teachers do not make use of their academic freedom. Instead, they favor conventional settings of teaching, which are not oriented towards the individual, but rather focus on the subject-oriented structure of a syllabus.

If single individuals play only a minor role, or, respectively, if the category of students is only considered in terms of "the average student" when it comes to the planning of lessons, then the question of the central categories for lesson planning arises. Seifried (2009b), Tebrügge (1998), Aerne (1990) and Bromme (1981) unanimously agree that the two central categories for lesson planning are the lesson content as well as the selection and sequencing of activities of both teachers and learners. However, this approach puts the main emphasis on subject-related contents. As a result, all other decisions must be aligned accordingly (Teebrügge 2001, p. 126; Haas 2005, p. 9; Pfannkuche 2013, p. 37). For teachers, a logical structure of the content is of outstanding importance with regard to lesson planning (Bromme 1986; Seifried 2009b; Pfannkuche 2013).

In this context, it should be critically noted that, according to these studies, the fundamental points of reference for the didactic preparation of a topic are schoolbooks and self-made manuscripts, prepared in the past. In this context, the orientation towards schoolbooks is even more problematic, because teachers are copying content more or less unchanged. In addition, they opine that these contents reflect the classification of subjects

and the professional state of debate (Pfannkuche 2013, p. 332).

Overall, there is a growing impression that the understanding of the teaching content is based on teaching experience. This holds particularly true for teachers with long-term experience. In addition, this understanding strives for the completeness of contents and can hardly be influenced (cf. e.g., Pfannkuche 2013; Aerne 1990). Hence, the question of the significance of the content for individual students plays only a minor role or is even nonexistent for lesson planning.

In addition, the interpretation of curricula frameworks as well as the definition of objectives, which should be achieved within the frame of lessons, are nearly insignificant (cf. Seifried 2009b). With respect to the claim for a more learner-oriented approach these results are particularly problematic. Because decisions regarding focus and objectives should be made in consideration of the needs of individuals.

In conclusion, the results of existing studies paint a sobering picture for individual-oriented curriculum- and teaching development. This is even more problematic as the planning actions of teachers are highly characterized by routines, which are difficult to change (cf. e.g., Seifried 2009b; Pfannkuche 2013). Consequently, it is not surprising that Pfannkuche (2013) concludes that reform endeavors, such as the implementation of a problem-, process-, and learner-oriented learning, are realized only insufficiently (cf. Pfannkuche 2013, Landwehr 2002).

However, based on the studies discussed above, a further development of teaching can also be noted. According to Haas (1998; 2005), this has its roots primarily in efforts for realizing a more student-active teaching. Hence, in this respect, innovative approaches for the design of teaching exists, resulting in more

active students. However, the question arises, if this indeed leads to a high-quality and individualized process of learning.

In summary, the claims for an enhanced orientation towards an individual-oriented curriculum- and teaching development have so far been implemented only to a limited extent. Differentiated pathways of learning are planned by means of methodological variants, which consider different learning conditions of students. However, in order to foster learner orientation in the context of both curriculum and didactic decisions much more levels of planning have to be considered. Those will be outlined in the following chapter.

2.2 CURRICULAR AND DIDACTIC LEVELS BELOW THEIR REQUIREMENTS OF LEARNER ORIENTATION

The principle of learner orientation is, in a curricular and didactic argumentation and reasoning context, connected to at least three levels that must be considered when planning educational offers. These are firstly the level of *normative orientation* and therefore the level of educational offers' target horizon. Secondly, learner orientation would have to be reflected and realised on a curricular-didactic level, as well as, thirdly, on a didactic-methodical level. This is briefly specified below.

- On the first level, the fundamental normative orientation and therefore the target horizon of educational offers are discussed. In vocational training in Germany for example, the construct of professional agency has established predominance with the introduction of field-of-learning-oriented framework syllabi. This construct has, in this form,

also helped shape the curricular framework requirements which are set at the federal level for vocational colleges in Germany. These state that "the vocational college [...] is charged with conveying professional and cross-professional occupational agency to the students. This enables the students to fulfil their specific tasks in their employment and help shape the world of work and social, economic, and ecological aspects of society, in particular in context of changing requirements." (KMK 2011, p.13). The goal of work-related education in vocational colleges is therefore to promote the development of comprehensive occupational agency (cf. e.g., Tramm 2007). The construct of occupational agency is, based on Roth (1971), divided into three dimensions of competence, which are the dimensions of technical competence, social competence, and self-competence. Occupational agency is thus understood to be "the willingness and ability of an individual to act in an appropriately thoughtful, as well as individually and socially responsible manner in professional, social and private situations." (KMK 2013, p. 3). On the one hand, this phrasing is recognisably guided by the situation principle (cf. Reetz 1984), as it deals in part with enabling individuals to overcome situations from their different private and professional life contexts. On the other, there is a clear focus on the learner, as it explicitly says that the goal is to promote "the willingness and ability of an individual." These somewhat abstract phrasings do raise plenty of questions however, when it comes to making them more specific during the planning of educational curricula.

- Via the second, that is the curricular-didactic level, attention turns to the selection of and reasoning behind educational targets and contents, which, in light of the requirement of learner orientation, should focus on individual needs, requirements, and, in particular, the educational and developmental perspectives of individual learners. (cf. e.g., Zoyke 2016; Tramm/Reetz 2010). In this context, analysis of the curricular framework requirements, which guide teachers in their development of educational curricula, shows that there is a clear focus on professional situations in Germany when it comes to vocational training. Work-related teaching is no longer based on scientific theory, where to bring about understanding teaching makes use of as many real-life examples as possible. Instead, it is based on professional problem situations which are developed from the occupational environment and didactically adapted. "The expertise required for occupational agency is generated on this basis." (KMK 2011, p. 10). Thus, since 1996, work-related lessons at vocational colleges are no longer divided by subject, but by so-called learning fields, which means that learners complete 12-14 learning fields during their vocational training at the vocational college, depending on the occupation they are training for. These learning fields are taught in a cross-subject manner. The learning fields of a vocational occupation "are developed from the various activities of respective occupations and based on work-related tasks [...]. The learning fields are didactically structured over the course of the training, to permit a spiral-curricular approach to competence development." (KMK 2011., p.11). A focus on professional sit-

uations seems sensible, particularly in light of theory of learning insights. The question of what connection there is between the focus on situations and the focus on learners. Furthermore, it must be asked how a more learner-oriented design of individual learning fields, and a sequencing of learning fields that is more strongly focussed on the development process of individuals can be achieved (cf. Zoyke 2016). In this context, the question of the thematic priority of the different learning fields is discussed. However, the potentials of a learner oriented sequencing of learning fields during the whole course of education are also a subject of discussion (see also summary at the end of this chapter as well as chapter 3, which takes up this issue).

- Thirdly, on the didactic-methodical level, the initiation, guidance and support of learning and developmental processes should be focussed on the respective requirements of the learners. In this context, the specific initial situations, the different prior experiences, as well as the varied learning needs should be considered in planning lessons. At this level of specific planning of complex lesson units, one can currently observe intensive work being done by teachers at vocational colleges, with the goal of developing lessons which are more individualised and have greater internal differentiation (cf. e.g., Bylinski 2016; Zoyke 2016). Most frequently, this takes the shape of differentiation measures in regard to different levels of learning, and a variety of methods in which learners engage with the learning material. There is also a focus on individual support measures based on a substantiated diagnosis of

respective initial learning situations (cf. e.g., Bylinski 2016; Zoyke 2016; Kranert/Kremer/Zoyke 2015; Zoyke 2012).

The implementation of educational offers, which take seriously the requirement of learner orientation as laid out above, raises new planning challenges at the individual levels for teachers at vocational colleges. These cannot be simply overcome by teaching staff in passing, particularly not if one considers the results of studies on the planning done by teachers. An overview of the central lessons learned from this research object is provided in the following sub-chapter, before, in conclusion, the insights from this second chapter are summarised with a view to a constructive approach to dealing with the challenges.

3. ON THE POTENTIAL OF DEVELOPMENT TASKS FOR LEARNER-ORIENTED CURRICULUM AND LESSON DEVELOPMENT

Even though there is a broad consensus that curricula and lessons require learner orientation, there is a lack of information at the level of target horizon for educational offers and at the level of curricular planning activities in particular (thus, on the first and the second level discussed above), on how the realisation of such an orientation could be supported in the development of educational syllabi and what such planning could be based on.

The development tasks approach according to Robert J. Havighurst (1963/1972) provides an opportunity for a more learner-oriented curriculum development. Even though his development task approach is an older construct, in my consideration, this approach provides interesting impulses for the

development of curricula and lesson development at vocational colleges, which should be discussed after an introduction to the deliberations of Havighurst. Reference will be made to the study conducted by Günter Kutscha (2011), in which he attempted to identify the development tasks of retail apprentices in the job entry phase of their occupational training. This is the basis for Kutscha's demands to develop subjective courses (cf. Kutscha 2011).

3.1 ON THE CONCEPT OF DEVELOPMENT TASKS ACCORDING TO HAVIGHURST

The concept of development tasks was developed by US educational scientist and sociologist Robert J. Havighurst, whose work deals with the development of children and teenagers. To Havighurst, development is closely interconnected with life. It is a life-long process for human beings, and it takes place through the active engagement with their social and material environment (cf. Also Hurrelmann 1983). While engaging with their environment, individuals develop, with Havighurst assuming that there are certain phases in the life of human beings in which they learn more intensively, and others in which they learn less intensively (Havighurst 1963). According to Havighurst, the learning of individuals begins with so-called development tasks; the impulse for the individual's development comes from specific development tasks which the learner must face at different times in their life. Havighurst defines development tasks as follows:

> A developmental task is a task which arises at or about a certain period in the life of the individual, successful achieve-

> ment of which leads to his happiness and to success with later task, while failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks (Havighurst 1953, p. 2).

Hence, development tasks are tasks with which individuals find themselves confronted at certain points in their lives, and which they must overcome if they want to be successful, happy people, and to be viewed as such by other members of society (cf. Kutscha 2011 p.3). Development tasks come up at certain times in life, resolving them is gratifying, and result in us both developing and receiving social recognition. Furthermore, successfully overcoming development tasks provides a foundation for tackling later development tasks. If people fail to overcome a development task, this results in dissatisfaction, the individual experiences social disapproval and will struggle to overcome later development tasks.

In his modelling of development tasks, Havighurst (1953/1963) identified impulses which result in development tasks on the one hand, and the characteristics of development tasks on the other. Havighurst names three possible sources which can provide impulses for development tasks. He says they originate from inner resources such as *physical maturity and growth.* A further source of development tasks are individual *values and goals.* A third possible source are *social demands and expectations*.

The most crucial factor for the identification of development tasks is the life situation of an individual and the current challenges it presents them with. Thus, every individual defines and formulates their own development tasks for themselves, with these generally arising not only from a single source, but largely

from a combination of the three sources, although depending on the task, one or two sources may dominate. Hence, development tasks arise not merely from personal needs, for example, but also from the social demands these are linked with.

> Thus developmental tasks may arise from physical maturation, from the pressure of cultural process upon the individual, from the desires, aspirations, and values of the emerging personality, and they arise in most cases from combinations of these factors acting together (Havighurst 1953, 4f.).

It stands to reason then, that the significance and urgency of a development task depends to a certain degree on the personality of the individual, and that development tasks are therefore highly individual. Havighurst (1953/1963) lists different tasks in various phases of life as examples of development tasks. The development of basic trust or motor and language skills are development tasks we face as children. Our teenage years would, in the eyes of Havighurst (1953/1963), be about the tasks of accepting our bodies, learning a male ore female social role, or picking a profession. One example for a development task that we face in our adult years, is founding a family (cf. Havighurst 1953; Kutscha 2011). Havighurst further classifies development tasks by their characteristics. For example, he says that there are both development tasks which we face only once and development tasks which are recurring. Furthermore, a specific order of one-time and recurring tasks is assumed; the time at which recurring tasks first occur is of particular importance to the development of the individual. The assumption that an especially significant time window exists for overcoming development tasks is closely associated with this order.

3.2 IMPULSES FROM THE CONCEPT OF DEVELOPMENT TASKS FOR THE DEVELOPMENT OF CURRICULA

So when it comes to vocational education and the requirement of learner-oriented curricular development, what can we learn from the impulses of the Havighurst development task concept?

First of all we should remember that courses are structured according to curricular provisions. The curricular provisions for work-related lessons at vocational colleges are represented at federal level via field-of-learning-oriented framework syllabi. These syllabi contain provisions regarding the material and temporal structure of learning a given profession. In this context, Kutscha (2011, p.6) speaks of standardised courses. When we speak of vocational training in Germany, we speak of the "apprenticeship profession as a training course ordered via training regulations and framework syllabi" (Kutscha 2011, p.6). Kutscha (2011, p.6) contrasts this standardised course with a subjective course. This means that the standardised course in its fixed shape does not necessarily match the subjective experience of the learner. Kutscha (2011, p.6) again: "Not the standardised course as part of the environment and 'objective reality' is of crucial importance to the professional education of a developing person, but reality as it is perceived by this individual person.". This is because a profession is learned in active engagement with people from ones' environment, and this engagement takes place during vocational training in Germany primarily in the time the apprentice spends with the company.

The question is then, how the reality in which learners live can already be drawn upon more intensively at the stage of designing educational curricula, in order to more strongly focus learn-

ing and development processes on the experienced reality of the learners. It is at this exact point, that Havighurst's (1953/1963) concept comes in, since it brings to our attention the individual, and their specific development tasks at a specific point in time. These tasks rather result from life situations than school situations. In the context of a learner-oriented curriculum development, these can provide guidance for which content to lay a focus on, but also impacts on the sequencing of the development processes. After all, one crucial purpose of vocational colleges is to support apprentices in overcoming the development tasks relevant to them (see also Trautmann 2004, p. 29). This support becomes necessary at the time when the development tasks occurs to the individual.

The most crucial factor for the identification of development tasks is the life situation of an individual and the current challenges it presents them with. Teachers must therefore be familiar with the development tasks of learners, in order to be able to support them individually and at the right time in overcoming their development tasks.

Havighurst's (1953/1963) consideration regarding the development of learner-oriented curricula are of particular significance for one further aspect. Havighurst (1953/1963) asserts that development tasks arise from an individual's active engagement with their material and social environment and therefore also from social demands and expectations. It can be assumed that a learner therefore learns a profession mainly through engaging with their every day material and social environment, i.e. also and in regards to professional training in particular, through engagement with business requirements in the training company. Therefore, the social demands in the working context must

be linked to the subjective values and goals of the individual, and thought of in combination as development tasks.

The concept of development tasks discussed above is therefore an approach with which vocational education can be reconstructed as a subjective course for apprentices as part of the standardised course for their vocation. This means it is not about aligning learning situations exclusively with the working and business processes of companies, but about picking professional and private situations and therefore content focal points according to their subjective importance from every individual's perspective, including their personal goals.

Based on interviews with retail apprentices, Günter Kutscha (2011) undertook a first analysis of actual, subjectively significant development tasks in vocational education. In his research projects "Problems faced by apprentices in the initial phase of their professional training in retail", he reconstructs the development tasks of apprentices in their first year in retail training. The potential of Havighurst's (1953/1963) approach for a learner-oriented curriculum development becomes particularly clear, if one considers the results of a Kutscha study.

In his study, Kutscha (2011) for example found that apprentices face a series of challenges during their integration in the company's operating context during the initial phase of their apprenticeship. According to Kutscha (2011, p. 18) these integration challenges comprise a diverse set of tasks, such as

- mastering the transition from school to professional training. Within the shortest of times, the apprentices are no longer just learners but also part of a company. As new employees in their company, they have to find their place

in this new social environment on a communicative and social level by engaging with their colleagues, superiors and customers. Furthermore, an adaption to formal working processes, such as keeping to regular working hours and coping with the routine of their company's everyday business, is required,

- the conflicts of choosing a profession which remain unresolved, despite the signed apprenticeship contract, as well as
- coping with the requirements typical to a profession. For example, apprentices are confronted with professional challenges from the very beginning nowadays, although they are mere beginners. In this context, the apprentices reported numerous situations during their first weeks of vocational training in which their lack of expertise in direct contact with customers presented them with great challenges. They lack declarative knowledge when it comes to the location of products or the handling of refunds, as well as procedural and explanatory knowledge concerning the products. As well as knowledge gaps, the learners also report uncertainty in dealing with customers, for example when these react with impatience to the apprentice's inability to provide information.

On the basis of Kutscha (2011) then, it can be noted that retail apprentices are confronted with tasks for which they do not feel sufficiently qualified and for which they are not prepared in the first weeks of their training. Thus, the entry into vocational training itself presents a first multidimensional development task for retail apprentices; overcoming this development task can put significant pressure on the learners. The individ-

ual engagement with and overcoming of this development task requires "particular vocational-pedagogical intention" and "targeted supporting intervention in consideration of the individual learning histories within the subjective cause of the apprentice" (Kutscha 2011, p.10).

The integration challenges facing learners in the business context are, however, not covered in any great detail during their school education. Hence, the apprentices' subjective experience of their training situation in the company contrasts the standardised course of work-related teaching in the vocational college, where many aspects of experienced reality are mentioned only much later or not at all. And thus Kutscha (2011, p. 10) concludes: "How and with which outcome apprentices deal with this development task cannot be determined by the standardised educational program; instead a closer analysis of the individual educational programme is needed".

4. CONCLUSION

And thus we come to my conclusion on what consequences there will, in my consideration, be for research and professionalisation of teachers. In light of the above, the following deliberations concerning the challenges of a more learner-oriented curriculum and lesson development can be formally summarised:

- Learner orientation, particularly on the level of normative orientation and the target horizon of education offers as well as on a curricular-didactic level may be recognisable and deemed desirable in terms of educational policy by actors in various educational institutions, but the formula-

tion of requirements remains extremely abstract and therefore extremely open to interpretation and in need of clarification. This presents teachers at vocational colleges with a complex set of planning challenges, because they must

- on the one hand, comprehensively interpret and analyse the curricular requirements, mainly to clarify and decide what targets and contents should be selected with a view to the development of individuals,
- on the other hand, reach a substantiated decision regarding the sequencing of the development process of the learner. Ideally this sequencing should be based on the specific life situations of the respective individuals, and therefore connect with the subjective experiences and subjective challenges the learner encounters during their professional training and personal development. In my consideration, this may present the opportunity to initiate and guide individual learning and educational processes.

· Learner orientation requires open curricula; there are at least three types of 'openness' that can be identified:
  - Firstly, in regard to the possibility of setting educational goals in consideration of the learning and developmental needs of different individuals.
  - Secondly in regards to the possibility of setting content focal points.
  - Thirdly regarding sequencing, i.e. the possibility of matching the temporal and contextual structure of courses to the individual requirements and life situations of individual learners.
· Learner concentration requires knowledge about indi-

viduals, about their individual life situation, their individual goals and life perspectives, as well as their development perspectives, needs, and initial learning situations. In my consideration generating this knowledge requires research that is more strongly focussed on learners and provides insight into the life situations of learners and their developmental challenges (cf. Naeve-Stoß/Büker in preperation). The approach of development tasks could offer guidance for both acquiring such knowledge about the learner and for harnessing it in terms of curriculum development.

- Ultimately a stronger focus on learners results in consequences for teacher education and training at vocational schools, as teachers would have to be qualified for the necessary complex planning tasks and have to be able to put their knowledge about their learners to curricular use. The results regarding the planning actions of teachers demonstrate that individuals, the anthropogenic conditions of students as well as individual life situations and individual learning- and development perspectives do not play a major role when it comes to the planning of lessons. In addition, the development of didactic concepts is shaped by problematic attitudes of teachers concerning students. Hence, teacher training should also encourage teachers to critically reflect their opinion on students. As a result, and within the frame of vocational and educational training, these problems have to be exposed and scientifically addressed.

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Section II:

VET Skills, Qualifications and Quality

Why are Transversal Skills Needed in Professional Higher Education in the Future?

Annica Isacsson*

Abstract: Why are transversal skills needed in professional higher education in the future? According to the World Economic Forum 65% of those who start school today will work in professions that do not yet exist today. The competence requirements of future working life will change, radically. It is not only automation, globalization or machinelearning that change future work, but our way of life and our societies. Consequently, learning is being challenged in the future in many unpredictable ways.

Capabilities such as creativity and sensing emotions, however, are core to the human experience and difficult to automate. Transversal skills are claimed to be important competences in the future, at e.g. working life. Yet, they are rarely systematically taught or applied in learning or guidance processes at universities of applied sciences in Finland. Nor are transversal skills assessed systematically. It is still the substances that form the core in teaching, learning and assessment. We define transversal competences as; character skills, thinking skills and emotional, collaborative, and interaction skills. In our research conducted at three universities of applied sciences in Finland we, by using multiple

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methods, try to create an understanding on what skills students perceive important in future working life, how transversal skills have been present in their studies and/or assessment practices at school, and how those could be enhanced during studies.

Key words: transversal skills, future competences, enhancement of teaching and learning

1. INTRODUCTION – RESEARCH RATIONALE

The labor market is constantly evolving. Skills, competences, and qualifications that people need change over time. To deal with these changes people need to be equipped with a variety of skills. The concept and idea of the importance of cross-sectoral transversal skills has been in the air since the 1950: s, but strongly put on the agenda in Europe by both Cedefop and the European Commission in the 21st century. The notion of key competences has evolved from the Lisbon Strategy (2000) and can be defined as writing-reading-, math-, digital-, language skills and skills related to natural sciences. According to the European Commision (2012) key competences and transversal skills (cross-sectoral skills) can and should be developed in all spheres of life including education. The problem is that despite numerous reports, initiatives, analysis and recommendations by both the European Commission and Cedefop the educational systems in Europe have not acted rigorously to meet the future challenges. The European educational system has not systematically supported the development of key competences nor the development of cross-sectoral competences or transversal skills, and do not collaborate systematically with working life which is perceived to be the gateway for employability and working life competences.

Transversal knowledge, skills and competences are claimed to form the building blocks for the development of "hard" skills and are highly relevant also when it comes to employability (see eg. Cross-sector skills and competences European Commission). Transversal skills, such as the ability to learn and initiative-taking among others, will help people to better deal with today's varied and unpredictable career paths. Effective communication between the labor market and the education and training sector is enhancing these competences. (e.g. the Development of skills.). Transversal skills are present in universities of applied sciences in the degree program discourses, descriptions and curriculums, but not in the implementations nor in the assessment practices (Isacsson, Salonen, Guilland 2016).

The term competence originates from 1958 when Raymond Vatier defined employer competences from the point of view of company needs. Raymond Vatier was a French engineer and a Director at the time of a Professional Further Educational Center in France. Vatier defined competence as knowledge, ability and will. Edgar Faure at Unesco redefined the term competence in 1972 as: knowledge (le savoir), know-how (le savoir-faire) and attitude. The definitions of competence vary with context and aim, but Faure's definition is still valid and the most commonly used universally. In Finland our curriculums are competence-based, both in universities of applied sciences and in VET, but assessment is still, to large extent, subject-based.

Transversal skills in VET and higher professional education can be argued to have evolved from the needs of the labor market, and be related to systems thinking. Transversal skills are becoming as important as so called hard skills when recruiting (Rodkin & Levy 2015).

Meta-, general-, working life-, future-, and soft skills are all closely interconnected with transversal skills. Their definitions and emphasis vary depending on contexts, disciplines and aims. Transversal skills can be defined in many ways, of which cross-sectoral skills is one explanation applied by the European Commission. In our research and in this paper we have defined transversal competences as: thinking skills, character skills and emotional, collaboration and interactive skills. The rationale for this division is presented in the following paragraph.

2. THEORY AND METHODS

We have in our research made the following distinctions of transversal skills to be enhanced and researched in three universities of applied sciences, i.e. (1) character skills include motivation, self-regulation, resilience, curiosity, hope, creativity, enthousiasm and perseverance. (2) thinking skills including critical thinking, analytical thinking, learning, initiative taking, systems thinking, obtaining & managing knowledge and creative problem solving. (3) and emotional, collaborative and interactive skills.

We base our definitions on studies presented by Heckman & Kautz in their draft from 2013: Fostering and Measuring Skills: Interventions That Improve Character and Cognition.

Both Heckman & Kautz are scientists in the field of economy, and have published numerous articles on measurement and instruments in the area of IQ and achievements of work. That part of their research is not of interest here, but it is the skills needed for success in the labor market that they present in their paper that form our understanding and definition of transversal skills. The main findings of their desk studies are presented in the table below:

Table 1.
Overview of research findings (Heckman & Kautz, 2013)

SCANS study 1991	50 occupations	Workplace competencies (1) the ability to allocate resources (time, money, facilities) (2) interpersonal skills (teamwork, leadership, teaching others) (3) the ability to acquire and to use information, (4) the ability to understand systems, and the (5) ability to work well with technology
Four metropolitan areas (Holzer 1997)	3200 employers	personal qualities as responsibility, integrity, and self-management are as important as or more important than basic skills
The National employer survey mid 90s' (Zemsky 1997)	3300 businesses	attitude, communication skills, previous work experience, employer recommendations, and industry-based credentials above years of schooling
Survey in the UK 1998	4000 employers	the four skills found most lacking in 16 to 24-year-olds were technical and practical skills, general communication skills, customer handling skills, and teamwork skills.
Survey in the UK 2002	4000 employers	Skill shortfalls were most common in communication, teamwork, other technical and practical skills, customer handling, and problem solving and least common in numeracy and literacy.

The Secretary's Commission on Achieving Necessary Skills (SCANS) conducted an extensive analysis in 1991 of which skills workers needed in the American workforce. The Commission researched the literature, consulted with experts, and conducted detailed interviews with workers and/or supervisors in 50 occupations. The interviews rated the importance of various skills in the context of illustrative tasks and tools on the job. Using these sources, the Commission categorized necessary skills into basic skills, thinking skills, personal qualities, and a set of workplace competencies. In addition to reading, writing, and math skills, basic skills include listening and speaking. The thinking skills cover creative thinking, decision making, problem solving, reasoning, and the ability to learn. SCANS specifies that personal qualities include responsibility, self-esteem, sociability, self-management, integrity, and honesty. SCANS identifies five groups of workplace competencies: the ability to allocate resources (time, money, facilities), interpersonal skills (such as teamwork, teaching others, leadership), the ability to acquire and to use information, the ability to understand systems, and the ability to work well with technology.

In a survey of 3,200 employers in four large metropolitan areas conducted in the 1990s, employers reported that such personal qualities as responsibility, integrity, and self-management are as important as or more important than basic skills (Holzer, 1997). In another employer survey undertaken in the mid-1990s of 3,300 businesses (the National Employer Survey), employers ranked attitude, communication skills, previous work experience, employer recommendations, and industry-based credentials above years of schooling, grades, and test scores as part of the skills needed for success in the workplace (Zemsky,

1997). Nonacademic skills are especially critical for entry level and hourly workers.

Evidence from the United Kingdom supports these findings. A 1998 survey of 4,000 employers found that the four skills found most lacking in 16 to 24-year-olds were technical and practical skills, general communication skills, customer handling skills, and teamwork skills. At the bottom of the list were numeracy and literacy skills. In a 2002 survey of 4,000 employers in the UK, 23% of employers reported a significant number of their staff were less than fully proficient at their jobs. Skill shortfalls were most common in communication, teamwork, other technical and practical skills, customer handling, and problem solving and least common in numeracy and literacy.Consistent with these findings, the Confederation of British Industry defines employability as (1) values and attitudes compatible with the work, including a desire to learn, to apply that learning, to improve, and to take advantage of change; (2) basic skills (literacy and numeracy); (3) key skills (communication, application of numbers, information technology, improving one's own learning and performance, working with others, problem solving) sufficient for the needs of the work; (4) other generic skills such as modern language and customer service skills; and (5) job-specific skills and the ability to manage one's own career. An ethnographic approach provides some revealing examples of how skills are used in context and how nonacademic skills are often developed and used as part of a "community of practice".

In addition to formal knowledge, Nelsen (1997) points out that workplaces require not only formal knowledge, facts, principles, theories, and math and writing skills, but also informal knowledge embodied in heuristics, work styles, and contextu-

alized understand-ing of tools and techniques. In her revealing case study of auto repair workers, Nelsen argues that social skills of new workers are very important for learning the informal knowledge ofexperienced workers, as captured in stories, advice, and guided practice.

Inspired by these studies we have hence concluded that transversal competences consist of, and are the categories applied in our research:

1 Character skills include motivation, self-regulation, resilience, curiosity, hope, creativity, enthusiasm and perseverance
2 Thinking skills including critical thinking, analytical thinking, learning, initiative taking, systems thinking, obtaining & managing knowledge and creative problem solving, and
3 Emotional, collaborative and interactive skills.

2.1 METHODS

We have in the project group that consist of researchers from three Helsinki metropolitan area universities of applied sciences collected data applying multiple qualitative ethnographically valid methods. At one university of applied sciences it has meant observation on how transversal skills are operationalized in group work, in dialogue and practices. The researcher has met with a group of Master students in social sciences three times. She has also conducted a group interview (which was taped) with the members of the group, and prior to the interview sent out a survey form on transversal skills, as a base and trigger for the group interview. In addition to this, she intends to, in May

2017 interview a group of international students. Our second researcher has sent out a questionnaire to her Master Business students and will facilitate a dialogue around the theme of transversal competences with them in May 2017 during an evaluation feedback discussion related to Change Management (the topic of their subject course).

I, the author of this paper, however, have both collected and analyzed some of the data collected during spring 2017. I started by collecting data from three groups consisting of 1) a group of international business students (n=16), 2) a Korean group of engineering students (n = 9), and 3) vocational teacher students (=20). The data collection was organized in three phases. In the first phase we discussed generally for about 15 minutes about future working life skills. In the second phase I showed the groups our definitions of transversal skills, and the groups continued to discuss around the theme in those terms for about 15 minutes while I made notes and facilitated the discussion. In the third phase the students assessed their own skills, and shared their arguments on how transversal skills had or should have been present and/or operationalized in their studies.

The Korean group were involved in the study by accident, and not part of our primary target group. They, however, brought interesting insight and I am happy to have involved them. In addition, all three universities of applied sciences applied a webpropol survey with a grading scale from 1-5 correlating our transversal calegories, including open questions on how transversal skills have been advanced, developed and assessed in their studies. In the form, we also asked the students to share their ideas and arguments on how transversal skills could be enhanced in order to better meet working life demands and skills. We have

sent out the questionnaire to 40 IT Business bachelor students, to 40 Business bachelor students, to 10 Master students in Social Sciences and to 20 Master students in Business studies. The documents have recently been sent, and are yet in the process of analysis. A few of the answers are avialble and presented in this study.

3. RESULTS AND ANALYSIS

To collect data and discuss transversal skills with students of different ages, gender and from different cultures has been both very enlightening and inspiring. Why? Because, for example the Korean group felt that this was the first time anyone asks them to contribute, argue and come with ideas related to their studies. They told me that this experiement was the best part of their visit. It was a new experience for them. Another reason as to why the data collecting process was so rewarding was that everyone else also involved felt that this topic was of outmost importance and interest for them.

3.1 INTERNATIONAL BACHELOR BUSINESS STUDENTS

From the preliminary results (in progress) the group of international business students perceived that emotional, collaborative and interactive skills were the most important in regard to both their studies and from the point of view of future working life skills.

Morevoer, the business students claimed that they practice collaboration a lot in diverse projects and as part of problem based pedagogy, but they have faced some of challenges in group work, and in relation to others:

"I get irritated when people don't do what they are supposed to do."
Business student in international group 1

"I get stressed when a fellow student in my group is late."
Business student in international group 2

Good collaborative skills were defined very precisesly and consistently in the following by a co-student:

"You know how and when to talk."
Business student in international group 3

I am impressed by this definition as it somehow manifests both verbality, respect and communication in a precise way in relation to emotional, collaborative and interactive skills.

As of character skills, self regulation was perceived important by international bachelor business students, but not perseverance. Quite the contrary. One has to learn how to let go. Moreover, the business students' felt that thinking skills are important to develop during studies.

As for critical and analytical thinking skills one business student in the international group responded that she finds it difficult to abstract and differentiate relevant information from irrelevant information. These skills, however, according to many others' testimonies are constantly practiced and developed in various courses through different tasks, literary searches and reports.

3.2 KOREAN GROUP

The Korean group, on the other hand emphasized collaborative skills, creative skills and diversity, in addition to openness, diligence and attitude as important. The Korean students shared their experiences in relation to some of their chemistry team-projects in which they have had the opportunity to try out their collaborative skills in practice. These team projects were according to their professor, however, challenging, as the students were not happy nor did they trust the self-, or group-evaluation as a valid method for grading. The professor received many complaints. The question of trust was not present in any of the other groups. One other attribute that was mentioned by the Koreans, but not by anyone else was diligence. Maybe the questions of trust, diligence and assessment it is a cultural question, and vary from one culture to another. Both the south Korean and the group of international business students perceived that they should work more on self regulative skills. The teacher students were reflecting over the term, and discussed whether the term refers to self guidance or self management. It can be both, but it is also related to emotions and behavior.

According to the educational site Education.com, self-regulation is the ability to monitor and control our own behavior, emotions, or thoughts, altering them in accordance with the demands of the situation. It includes the abilities to inhibit first responses, to resist interference from irrelevant stimulation, and to persist on relevant tasks even when we don't enjoy them. Psychology Today defines self-regulative skills in the following: "Behaviorally, self-regulation is the ability to act in your long-term best interest, consistent with your deepest values" (Self regulation).

3.3 VOCATIONAL TEACHER STUDENTS

The teacher students emphasized the importance of human skills, and the ability to master your own emotions. In addition, they mentioned assessment and the recognition of one's own competences as important.

The ability to manage one's own competences was present strongly in vocational teachers' students dialogues, in particular related to future working skills and employability. The students perceived it important to both recognize and develop one's own skills and competences, but as important to develop the ability and skills to analyze and recognize one's weaknesses and gaps in relation to competences. The teacher students felt that transversal skills can be developed through a strong coaching approach. The teacher should develop their students' self assessment skills and strengthen their self esteem, and make the students believe in their competences, and give support in strengthening them.

In addition to competences, polarization of wellbeing was also present in the teacher student responses, "there are those who know, develop, master many skills, and develop themselves constantly and others who cannot, do not have the ability or will". The teacher students' felt that this should not be accepted, and the students who get lost, or tired should not be given up upon. There should be possibilities and room in working life also for light entrepreneurship, and low threshold work. Furthermore, the integration of diverse students should also be enhanced.

According to the teacher students Finland should be better at accepting failures and diversity. Moreover, perseverance is not always a virtue. Sometimes, it is good to know when to give up.

3.4 CONCLUSION

It is very important to mirror the answers in relation to respondents' cultural backgrounds. The south Koreans emphasized hierarchy and diligence. Korean students did not feel comfortable in answering questions related to transversal skills or the development of those in class while their professor was present. The professor himself brought up the challenge of evaluation. I make the interpretation that in Korea the teacher is the one who has full authority when it comes to cases of assessment. Maybe the competition in Korea also fosters a culture of grading. Furthermore, it seems unappropriate to discuss teaching and learning processes, as well as methods with the teacher.

The teacher students on the other hand reflected over questions related to students' professional growth and emphasised diversity, integration, and the importance of coaching, guidance and counseling of students, in addition to continuous self-assessment. Their replies revealed both values and virtues related to ethics and respect. Moreover, the teacher students stressed the management of teachers' own competences as important, in order to develop. The teacher students also reflected over the value of work, and mentioned among other things that they could not work in organizations that do not share their values. All respondents were united in their view on the relevance of emotions, collaborative and people skills.

As for our Webropol survey related to transversal skills some interesting answers have popped on how transversal skills could be developed in universities of applied sciences:

- by adding collaboration with working life and by constantly analyzing working life needs

- by increasing practical work and counseling practices in order to monitor student development
- by offering more elective courses based on individual interest and needs in order to enhance individual career development opportunities
- by integrating working life in assessment practices
- by having the teacher counselor present in group work activities in order to assess individual development

And last but not least, one student wrote that "you do not learn the competences needed in working life by doing group work or reports, or by sitting at lectures".

4. DISCUSSION

In order to enable learning, change and development the students need a place to practice. Places, events and web forums where the students can freely and openly express themselves, be open for new ideas and make cross-sectoral experiments.

Character empowering research have been conducted throughout decades (e.g. Linkins et al 2015, Uusitalo-Malmivaara 2014a, b, 2016, Heckman & Rubinstein 2001, Hakkarainen 2015). Empowering feedback and conscious presence of teacher counselors correlate with well with student wellbeing, graduation, and success in studies, and with employability.

According to Heckman & Kautz character is a skill, not a trait (2013). At any age, character skills are stable across different tasks, but can change over the life cycle. Character is shaped by families, schools, and social environments. Skill development

is a dynamic process, as are thinking processes and emotional, collaboration and interactive skills. Character skills can hence very well be enhanced during studies. The universities of applied sciences could and should be those places for human growth, in which characters can be strengthened, empathy skills enhanced, in addition to interactive and collaborative skills developed.

The topic of transversal skills is important, maybe more important now than ever because of the turbuleance we are facing on the labor market. We cannot predict what the next decades will bring or where skills, learning and education will go, but one thing we know, is that transversal skills will not be needed less in the future, but more, both in education and in working life. One thing that we have also concluded already is that it is important to balance the substance or hard skills with transversal or soft skills. Both are needed, and both are important. We have the ambition to continue our studies inspired by Heckman & Kautz (2013). We will in the following conduct a study among employers and employees, after having analyzed the student data at hand. Systems thinking framework is equally of interest when studying employers and employee's, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns clearer, and to help us see how to change them effectively. It is best understood in the context of the five disciplines of learning developed by Peter Senge (System Thinking). It is very much relevant in the context of transversal skills.

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The Organising Framework of Occupations: Is There Common Language for Occupations Between Educators and Employers?

Naomi Alphonsus*

Abstract: In South Africa concerns around slow economic growth and high unemployment have given rise to critiques of post school education and training. These critiques are focused on the idea that education and training are not producing the right skills for the economy. In an effort to create the right skills for the economy, policy makers have introduced the use of the Organising Framework of Occupations (OFO). The OFO is an occupational classification system which is intended to create a common language between employers and educators. Currently, the OFO is used in several ways in South Africa: the definitions of occupations are used in workplaces to describe the composition of the labour force for workplace skills planning; it is used in national skills planning to understand the required supply and demand of skills and it used by state authorities for the creation of occupational qualifications to prepare learners for the workplace. However, the use of the OFO in both labour market and education could be problem-

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atic as both systems are influenced by different stakeholders with different agendas. This paper outlines the proposal for the author's doctoral study.

Keywords: Occupation, Skills, Occupational Classification Systems

1. INTRODUCTION AND BACKGROUND

In South Africa, the combined pressures of high unemployment and slow economic growth have led to government policies emphasising the need for higher skills (Department of Higher Education and Training, 2013; Department of Trade and Industry, 2011). Higher skills is seen internationally as the driver of economic growth and better social outcomes which provides higher living standards and better employment levels (Fretwell, Lewis, & Deji, 2001). To produce higher skills, one of the larger goals under the Department Of Higher Education and Training is to create a centralised nationally coordinated system for skills development (Department of Higher Education and Training, 2013). Broadly, this coordinated system for skills development is intended to provide national skills planning for skills supply (training and education) and demand (the labour market and government development initiatives). It is hoped that this kind of planning will bring alignment between post-school training and education and the needs of the labour market. One of the key instruments used to bring alignment is Organising Framework of Occupations (OFO). The OFO is a coded hierarchical occupational classification system based on the International Labour Organisation's International Standard of Occupations

(ISCO-88). ISCO-88 is used internationally in labour statistics to track labour market trends. Currently, the OFO is used in several ways in South Africa: the definitions of occupations are used in workplaces to describe the composition of the labour force; it is used in skills planning to understand the required supply and demand of skills and it used by state authorities for the creation of occupational qualifications to prepare learners for the workplace.

The OFO was introduced in 2005 in the Department of Labour where it became necessary to have standard definitions of occupations in the workplace. A couple of years later, the OFO became a key tool for skills planning in the labour market to determine what skills need to be developed in post school education and training. The Department of Higher Education and Training (DHET) (2013, p. 4) states that the OFO is their "key tool for identifying , reporting and monitoring skill demand and supply in the South African labour market". DHET (2013, p. 4) states that the OFO was constructed from bottom up:

- "analysing jobs and identifying similarities in terms of a tasks and skills
- Categorising similar jobs into occupations; and
- Classifying these occupations into occupational groups at increasing levels of generality."

The occupations are drawn from ILO's ISCO-88 as mentioned above. Occupational definitions within an occupational classification system are typically collated by field workers; they gather information through a series of questions through a

Labour Market Survey (Elias 1997). Each occupation has a skill level and is related to an education level needed. The ILO will then formulate standard definition of occupations through the answer of an individual person as they define their work across several countries (Elias 1997). There are two potential problems in using these occupational definitions in education. Firstly, it could be argued that the definitions are created for labour market statistics that lists of skills and tasks are not the language of education. Secondly, in creating occupational definitions that are relevant to many countries, aggregation of data must occur that possibly exclude details of the occupation related to specific contexts.

Below is an example of an ISCO occupational definition that is used in the OFO. The following is highlighted:

- The brief description of the group of occupation "install fit and main electrical wiring repairs".
- The tasks performed "maintaining, fitting and adjusting electrical wiring", the breakdown of more specific occupations.

The occupation definition that is given is Building and Related Electricians, one of the tasks given is the "examining blueprints, wiring diagrams and specifications to determine sequences and methods of operations (see table 1). While reflecting on this example of an OFO occupational definition drawn from ISCO-88, this research is trying to understand if there is value in using this definition of an occupation for education and training purposes.

Table 1.
Example of an OFO occupational definition drawn from ISCO-88

Minor Group 741
Electrical Equipment Installers and Repairers

Electrical equipment installers and repairers install, fit and maintain electrical wiring systems and related equipment, electrical machinery and other electrical apparatus and electrical transmission and supply lines and cables.

Tasks performed usually include: installing, maintaining, fitting and adjusting electrical wiring systems, machinery and equipment; examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation; inspecting and testing electrical systems, equipment, cables and machinery to identify hazards, defects and the need for adjustment or repair; installing, maintaining and repairing electrical transmission lines; joining electrical cables.

Occupations in this minor group are classified into the following unit groups:

7411 Building and Related Electricians
7412 Electrical Mechanics and Fitters
7413 Electrical Line Installers and Repairers

Unit Group 7411
Building and Related Electricians

Building and related electricians install, maintain and repair electrical wiring systems and related equipment and fixtures.

Tasks include –

(a) installing, maintaining and repairing electrical wiring systems and related equipment in various buildings such as schools, hospitals, commercial establishments, residential buildings and other structures;
(b) examining blueprints, wiring diagrams and specifications to determine sequences and methods of operation;
(c) planning layout and installation of electrical wiring, equipment and fixtures, based on job specifications and relevant standards;
(d) inspecting electrical systems, equipment and components to identify hazards, defects and the need for adjustment or repair;
(e) selecting, cutting and connecting wire and cable to terminals and connectors;
(f) measuring and laying out installation reference points;
(g) positioning and installing electrical switchboards;
(h) testing continuity of circuits.

Examples of the occupations classified here:

- Building repairs electrician
- Electrician

Some related occupations classified elsewhere:

- Electrical fitter – 7412
- Electrical mechanic – 7412
- Electrical line installer – 7413

2. THE PROBLEM STATEMENT

In South Africa, one focus of the national strategy for skills planning and development is to address the perceived disconnect between labour market and education system. One of the tools used in this strategy is the Organising Framework of Occupations (OFO). The OFO provides a standardised framework to define occupations as a coded occupational classification system that groups occupations according to skills, tasks and duties and related to an education level (Department of Higher Education and Training, 2013). The OFO is intended as a common language that both employers and educators can use to determine what skills are needed for a particular occupation/job with the purpose of bringing both parties in alignment in determining the knowledge to be transmitted and skills to be developed in education for a student to enter a particular occupation (Department of Higher Education and Training, 2013).

On the surface, the use as the OFO occupational definitions as a common language can be seen as progress towards creating connections between labour markets and education. However, any type of agreement lies in finding common ground which is meaningful for both parties. The labour market and education systems are governed and influenced by several social forces such as the state, the market, economic policies, trade unions, labourers and employers who can all have different agendas (Standing, 2009). In line with this, the question of common language relates to how concepts of skill, occupation and knowledge relate to each other conceptually. It could be argued that within the OFO is an understanding of occupation and skills that determine what skills and education levels are associated to

an occupation that relates directly to the methods used in labour market statistics. This leads into the problems that making the links in using a common language is done by defining an occupation as sets of tasks and skills, and this is risking a reductive and possibly meaningless notion of occupation for education. The way in which information is collated about occupation is then abstracted which means that the end result – what is recorded as the definition of the occupation – is far too abstract to say anything meaningful.

As mentioned above, the OFO has its own method of defining occupations. In contrast, skills and occupations can be influenced by the context they are developed in (Standing, 2009). Standing (2009), a theorist who is strongly concerned with notions of occupation, suggests occupations have historically been social constructs. As occupations are part of society, their functions can help reproduce economic and social relations in a wider community. As occupations are a social construct in Standing's (2009) view, they not permanent and exist in wider societies were there are tensions with other economic and social interests. At certain time in history a plumber did not exist until the technology became too complex for an amateur to handle which then led to it being more worth the cost of paying someone else to do it than doing it yourself. An occupation involves a combination of knowledge and some notions of skills. Standing (2009, p. 11) defines an occupation as an "evolving set of related tasks based on traditions and accumulated knowledge, part of which is unique" , he suggested that occupations "involves some combination of forms of knowledge that go beyond conventional notions of skill – abstract, technical, inferential and procedural". This can be considered a contrast-

ing view of occupations beyond skills, tasks and duties found in the OFO.

Winch (2011) discusses the notion of skill in the context of the vocational education (VET) system in England in the labour market and qualification system. He explains that the notion of skill is different in the UK from the European definitions of skill. He contrasts the UK notion of skill which is firm and task specific where there are no integrated broader forms of know how to French, Dutch and German notion of skills that consider tasks performance that is integrated into project management. French, Dutch and German notions of skill include know how which is a variety of abilities and forms of understanding of the workplace. An occupational profile in the UK is developed to suit the needs of employer or group of employers rather than a broad understanding of the sector. He argues that the notion of skill in the UK context fragments the labour process because it does not consider all the "know how" that goes into performing a task, this can have a reductive effect on the concept of occupation.

Winch (2011) shows that in the UK employers are focused on skills needed to perform particular tasks or concerned about the worker's lack of knowledge of the industry they work in Employers are also reluctant to articulate their needs mostly because their needs can be quite limited. This narrow notion of skill is then translated into qualification in the UK context where the relationship between knowledge and practice of a skill is not clear. This causes a problem within the system that acquiring a certificate does not clearly indicate that a student has

the necessary knowledge to practice skills. This leads to Winch's (2011, p.95) problem where he says about skills; "there is no settled view within the English trades and not even within many specific trades as to what the appropriate level of knowledge and practical ability should be".

The OFO is a classification system contains occupational definitions that are tied strongly to skill, tasks and duties and is used as an international standard for an occupation in South Africa. Using Winch's (2011) argument, this research intends to investigate if there is a settled view of skills and occupations found in the OFO for South Africa.

RESEARCH QUESTION

What notion of occupation and skill is captured in the OFO, and how does it relate to the traditional notions of occupations?

3. LITERATURE REVIEW

This literature review is briefly covering literature on occupational classification systems, skill, occupations and competence based education and training. The section on occupational classification will provide a deeper explanation of the evolution and logic of these systems. The sections on skill and occupation will provide a contrasting view of skills and occupations and their influences. The section on competence based training and education provides insight into a education system that was based on skills and tasks performance and its challenges.

3.1 OCCUPATIONAL CLASSIFICATION SYSTEMS

The purpose of this section is to understand occupational classification systems as this provides insights into what kind of information is used as the foundation for occupational definitions in the OFO. It will explain how and why occupational classification systems evolved in the international context, what they are and their uses, problems encountered in the development of these systems, and two of the dominant occupational classification systems used internationally.

National classification systems for industry and occupation came into being in the last decades of the 19th century (Mannetje & Kromhout, 2003). The first classifications reflected social strata rather than tasks performed but the increasing need for international and inter discipline comparisons between occupations brought standardisation (Mannetje & Kromhout, 2003). Elias (1997) argues that coded occupational classification systems became increasingly popular in the 1980s globally due to the increasing need to analyse the composition of the labour market. It was designed for comparing and tracking labour market trends and economic growth across countries through tracking the occupations of the population of a country and then comparing those occupations to other countries.

The paper will only cover one of the dominant of occupational classification systems used globally, which ILO's ISCO as this is what the OFO is based on. The ILO's ISCO was developed through consultation with employers, workers and several stakeholders across countries (International Labour office, 2012). Most European and other countries have used the ILO's ISCO as a foundation for their own occupational classification

system (Elias, 1997; Mannetje & Kromhout, 2003). Most countries conduct a mapping of the world of work at a very aggregate level and then modify an occupational classification system to meet specific needs (Hoffmann, 1998). In order to understand what occupational classification systems are, it is necessary to look at the structure of this system and what logic it is ordered with. The following paragraph will explain the structure of the two dominant occupational classification systems.

The most updated version of the ILO's ISCO is called ISCO-88. ISCO-88 occupation specification is based on two concepts. Firstly, the kind of work performed or job and secondly, the concept of skills. This means that the classification unit is occupations while the classification variable is the tasks and duties under each occupation (or the work expected to be performed). Occupations are subsequently grouped together by similar tasks and duties in occupational groups. Skill is understood in two dimensions, skill level and skill specialisation. Skill level is related to the nature of the work performed, the level of formal education to competently perform these duties and tasks and the amount of on the job training needed to be competent at the tasks and duties. Skills specialisation is considered in terms of the field of knowledge required, tools and machinery that are used, materials that are worked on or with and kinds of goods and services provided. All occupations are classified under 436 unit groups, the most detailed level of the classification structure is 130 minor groups, 43 sub-major groups and 10 major groups in terms of similarity of skill level and skill specialisation (International Labour Office, 2012), By reviewing ISCO-88, a structure can be identified that defines an occupation as made of tasks and duties performed which links to an education level.

The next question is how are these occupation definitions formulated and the challenges involved in this process. This process will be covered in the following paragraphs.

As mentioned earlier occupational definitions are typically defined by field workers who ask individuals a series of questions and then formulate a census of occupations. Elias (1997) argues that occupational classification is a difficult process, which can have a low level of reliability. He explains that there is a low quality of the occupational data. In this he includes

- the brief nature of the occupational code that can become ambiguous in interpretation from field worker to field worker;
- poorly formulated instructions regarding questions asked to worker or employers;
- poor coding training procedures;
- human error;
- Concepts that cannot easily be applied in a particular context and in that sense do not lead to a clear cut classification.

Another aspect of this occupational definition process that can prove problematic is the aggregation of the data received for an occupation. As field workers all bring their definitions of an occupation, aggregation is necessary in order to group and define occupations. This process of aggregation can compromise the definition of an occupation as it typically omits information related to context. It is also interesting to note that countries have different ways of defining occupations and how they are organised. For example, in the French system the defi-

nition goes beyond jobs and tasks and includes the position of the worker in the organisation, the way the worker operated in relation to machines, people and documents, and the degree of autonomy given with instructions (Hoffmann, 1998). Therefore, comparing an occupation specification from other countries to France may not produce an accurate comparison of labour market trends. These problems when using occupational classification systems in labour market statistics can also have implications when these systems are used in education. As an example if an occupational definition is not created for a specific social context then if it is used to inform education and training there could potentially be gaps of knowledge in the curriculum.

The occupational definition is also derived from people; this can have implications on a definition as people can view their occupation differently. Elias (1997) comments on how occupations in the past were associated with the description of how people divided their time between market and non-market activities. This meant that occupations had a particular function in a particular place such a merchant in a shop or field worker on a farm. Though these references have faded over time, occupations were previously associated with the "pursuit of mercantile employment, a trade or craft", in contrast professions were associated with higher social status (Elias, 1997, p. 5). As historically, professions were often associated with the acquisition of a specialised body of knowledge and usually higher forms of education such as a doctor or lawyer. In contrast, today occupations are used to describe how we use our time, rather than what we will be doing at a specific moment. An interesting insight that Elias (1997) makes is that when a person is asked what their job is they will talk about their current status in terms of what they are doing right now, but when

a person is asked about their occupation they are more likely to reflect on the long term plan and associate it to event on a longer timescale. When asked about a person's occupation is, it can also be a reflection of social rank and status, which can show that any form of classification recognises the existence of a social structure. This can have implications on how skills, tasks and duties are defined at a broad level for an occupation in an occupational classification system, as field workers interview people in an occupation and employers for definitions of occupations and layered onto this is social perceptions of what skills or level of education individuals feel is considered valuable in society.

This section has tried to show that occupational classifications and definition occur in a complex environment. An environment with workers and employers who have different understanding of their occupations and a society with differing views of social rank across several countries. It shows that even in its intended purpose in labour statistics that there are problems with using the system which can be problematic for its use in education. Therefore, its use in an education system needs to interrogate to understand if it is the best fit.

4.2 SKILL AND OCCUPATION

As mentioned in the last section, the way in which occupations are defined in occupational classification system draws on skills, tasks and duties. In contrast, occupations and skills can be understood in different ways. This section will attempt at drawing out the different ways in which skill and occupation are understood. Skill can be defined in different ways. In the simplest form, Shah & Burke (2003, p. 5) define a skill as "an ability to perform a pro-

ductive task at a certain level of competence... skills is associated with a particular task". Therefore, skills is associated to a particular tasks, which is similar Clark and Winch (2006), who define skills in terms of the physical/ manual mastery to perform a skills or task. While the defining of skill may go further than performing a task by also associating it to an ability or disposition to solve tasks and problems on the basis of expert knowledge and engaging in social relationships that enable this process (Clark and Winch ,2006). On the surface each definition seems to communicate that a skill is just being able perform a task. But there are hints of something more in the use of "at a certain level of competence" and "physical/manual mastery". This raises the question of what does it take to perform a task well? Some may say that it takes a certain amount of knowing or more specifically knowledge to do a task well. Clark and Winch (2006) discuss this "knowing" as they say that expert knowledge and the engagement of social relationships enable the process of "doing: a task. As it could be argued that there are various amounts of knowing and doing that could enable one to perform a task. This "knowing" and "doing" are complex issues in understanding skill especially in the context of social relationship associated with skill as there can be several role players that influence what is determined as important.

Streeck's (2012) shows how historical events in the industrial age that influenced the development of skills by different role players such as trade unions, employers and workers. Streeck (2012) highlights two different types of skills during the industrial age; there were craft skills and general skills which he describes in the context of German and Anglo Saxon environments. Craft skills were high skilled but narrow, specific and portable in different workplaces. General skills were unspecific but were widely

used in industry and normally needed manual or physical labour. On the surface, general skills would seem more about doing and craft skills may need more detailed knowledge to perform.

Streeck (2012) shows that influence that are context bound has an impact on how skills were defined. In the Anglo Saxon environment, trade unions controlled the labour supply and wages of skilled workers, who were sought after but also held significant power in bargaining and control over what and how their members did work as related to the narrow specific skill set. As time progressed it became difficult to introduce technological change needed for mass production in order for industry to remain competitive in the context of trade unions. Trade unions controlled wages against a specific skill set. An example of this was that skilled workers demanded high bonuses to work on different machines. The system became unmanageable due to the conflict of needing to introduce new machinery to remain competitive and negotiating of wages of workers to use the new or different machinery. Anglo Saxon companies were pushing for automated factories in order not to deal with labour issues and associated wage negotiations. The Anglo-Saxon context points to a complex issue in defining skills that often the interactions of industry with trade unions and the priorities of each will influence what skills are preferred. In this situation, the trade unions were demanding high wages for the ability to perform work on different machinery. Industry needed different machinery to remain competitive in mass production; however, they did not want to pay higher wages. This may have seemed that the employers did not want high craft skilled workers but the problem was with the higher wages the workers were demanding. This led to industry was pushing for automated factories in

order not to deal with wage issues. In comparison, the German system had highly skilled workers and employers who were able to rapidly deploy new technology. The next paragraph will look more closely at the German system.

Streeck (2012) describes the German workers as having high and broad skills. German workers were trained in widely accessible and publically supervised apprenticeships, at the time there was a large supply of a skilled industrial workforce, it was easy to retain and redeploy in internal labour markets while the workers were highly mobile in external labour markets because of their certified portable skills. Certified portable skills means the skills were assessed in some form and met a level of competence and transferable from company to company. The German system most notable characteristics was the vocational training system which was jointly regulated at an industry level which meant that collective bargaining and wage setting trade unions and employer associations who jointly administered set of rules and were licensed by the state. This was done in conjunction with a current national system of occupations, occupational training profiles, publically supervised examinations and certification of skill and allowed for the mobility of workers in national sectoral labour markets. Employers in the German system were willing to invest large amounts of money in the development of skill for their workers. Trade unions supported companies up skilling employees for their benefit while pushing for more general training. This meant that German firms enjoyed a large supply of high skills and ability to deploy labour in their industries, which allowed them to engage quickly with new technologies that added competitive advantage to their industries. What

needs to be noted in this system is that all the role players influenced the system so that high skills was favoured, both employers and employees benefited. In this environment both general and high skilled were seen as essential. It could be deducted that in defining skills both were essential in the development of a German worker by the vocational training system. This section shows how skills are understood in different ways and how the context can influence the definition of skill and what skills are valued. This preference of what skills are valued can influence education systems. However, these influences are not always for the good of all parties. In the context of what is valued and preferred is the underlying idea that a skill is ability to do and the contestation if it is about "doing" or "knowing" or both. As skills are placed together for a person to be able function in a job or occupation, it is necessary to understand how occupations evolved and how they are associated with knowledge and skills. The next paragraph will attempt at explaining the ways in which occupations evolved.

This section will draw out Standing's (2009) notion of occupation and the relationship of knowledge and occupation. The purpose is to show that there can be a broader view of occupation that is different from that captured in the OFO.As mentioned earlier, Standing (2009) is a key theorist in the notion of occupations. Standing (2009a), suggests occupations have historically been social constructs. As occupations are part of society, their functions can help reproduce economic and social relations in a wider community. Standing (2009) states that occupations have jurisdiction, this means that they have certain rights such as monopoly of practice, a structure of payments, certain work procedures for practitioners, regula-

tion, and recruitment, training and licensing controls which includes the way in which people enter and practice within an occupation. Standing (2009) also suggests that in an occupation there is task specialisation, which can inform type of client, subordination, workplace environment and remuneration. Standing (2009, p. 11) argues that occupations can be "inherently transient, not permanent constructs" as they exist in societies which are exposed to the changes and tensions of social and economic interests. An occupation can provide an identity, however this is rooted in social inclusion in a grouping in a society. Standing (2009) points out that a modern way of defining occupations uses skill, where labour statistics and divide occupational titles according to a notion of skill, status, hierarchy and relations to people and things. This can prove difficult when occupations are not static, there is a constant refining of skills, extending jurisdiction, changes in technology and the division of labour. According to Standing (2009), skill often refers to one's technical ability which is related to the level of schooling which can be deceptive measure of skills. Standing's work points to some key problems with using the OFO in education. It could be argued that the defining of occupations on the broad level through skills and work performed in the OFO does not capture the complexity of social and economic interests in an occupation and how these influence and change the identity of the occupation. Part of this complexity that is found in an occupation is knowledge which will be discussed in the next paragraph.

Knowledge that is associated with an occupation is vital to the practice of that occupation. Education can be closely linked to knowledge. This means that when considering how

an occupational definition in the OFO can influence education, it is important to consider the types of knowledge that are found in occupations. Friedson (2001) sets out three types of knowledge that influence work which are everyday knowledge, practical knowledge and formal knowledge that are essential in developing an individual for an occupation. Everyday knowledge which is "activities of living creatures and" formal knowledge which is" productive human activities we call work" (Friedson, 2001, p. 27). Friedson (2001) explains that knowledge which is related to "know how" of participating in certain work and is most often learnt on the job, in some instances this "know how" is referred to as practical knowledge (Friedson, 2001). Therefore, practical knowledge and skill is conscious and tacit, it is often shared by a group performing the same work. He shows that in order to work, a person needs different amounts of everyday and practical knowledge for different types of work. However, Friedson (2001) argues that different work can require specialised type of formal knowledge which is built on everyday knowledge. Specialised formal knowledge can be gained in special vocational school. Friedson (2001) sets out a detailed argument of how skilled and unskilled manual work has elements of practical and everyday knowledge and not formal knowledge. Parallel to this are professions that have a large component of formal knowledge where the work is grounded by abstract concepts and theories, these professions are often referred to specialised formal knowledge. It could be argued from this that each occupation requires differing amounts of different types of knowledge. If education is concerned with the acquisition of knowledge, Friedson's (2001) setting out different types of knowledge can

be complex issue to engage with for education. This research questions if the use of an occupational definition from the OFO in education addresses this complex knowledge issue in occupations and assists in its translation for qualifications.

The next section looks at an attempt to connect labour markets and education called competence based training and education. It had a very specific view of skills and how this related to education.

4.3 COMPETENCE BASED TRAINING

This alignment that the OFO is attempting to create between educators and employers in South Africa is not new. Other countries have tried to connect work in the labour market and education. One major approach to connect work and learning emerged in Australia and UK in 1980s and 1990s was called competence based training and education which attempted to align competences needed for work with training and education. At the core of competence based training is the development of standards that are based on what is needed in the workplace and the assessment of these standards. For the purposes of this research, competence based education and training is used as an example of a system that used skills and tasks performed in the workplace as a basis for units in qualifications. These qualifications are often based on units that are areas of competence which have an independent value in employment and are separately assessed and accredited to individuals (Jessup, 1989). Each unit opens the way to credit accumulation towards a qualification (Jessup, 1989). The system has national bodies offering these qualifications in the form of units (Jessup, 1989). This provides a description of a competence

based qualification in the UK and this leads into the discussion of what competence is defined as in this context.

Definitions of competence influence the implementation of this kind of training. In the UK, the Further Education Unit defined competence as the "possession and development of sufficient skills, appropriate attitudes and experience for successful performance in life roles (Harris et al., 1995, p. 20). In Australia, competency is defined as a focus "on what is expected of an employee in the workplace rather than the learning process; it embodies the ability to transfer and apply skills and knowledge to new situations and environments" (Harris et al., 1995, p. 20). The definition focused on work performance as being able to perform tasks, managing different tasks in a job, being able to problem solve irregularities and understand and manage responsibilities and expectations in the workplace (Harris et al., 1995). Industrial competence focused on specialisation and application of knowledge and skills in a particular industry as related to the performance requirement of employment (Harris et al., 1995). Competence statements are derived from analysis of employment requirements which are the duties employees must carry out, with specific attention paid to purpose and outcome. They are commonly referred to as employment led standards as this analysis is carried out by or on behalf of employees in the relevant sector or supported by them. In summary, competence education and training focused on the tasks performed in the workplace. This type of training has received many critiques; the following paragraphs will briefly discuss these critiques.

In the literature there were three main critiques of competency based education that will be drawn out briefly in this section. Firstly, there is a concern with the consequences of basing cur-

riculum on concepts of competence that were either too narrow task based view of competence and standards (Mansfield, 1989). This meant that as occupations advance from foundation/entry level occupations to more higher levels, the analysis of tasks and duties can be insufficient when considering the complexity and responsibility of occupational role (Mansfield, 1989). At times task analysis often support work measurement systems that do not take into account unpredictable and unfamiliar aspects of job and task that are often exposed to external influence on the work process (Mansfield, 1989). Both Mansfield (1989) and Wolf (1989) highlight concerns of the way in which standards were formulated often considered a best case/practice scenario and not potential problems in the processes. Mansfield (1989) would argue that task analysis fulfils its purpose in measuring and isolating work activities for work measurement and specific skills training but is not appropriate for deriving standards for work role expectations. The concern here is that the formulation of competence standards and its use could be problematic in preparing a learner for the workplace. It could be argued that the same problem may emerge when creating qualifications using the OFO occupational definitions that states skills, tasks and duties.

Secondly, assessment methods are also a highly contested issue in competence based education and training. In Vocational Education Training assessment typically focuses on skills tests and routine knowledge (Mansfield, 1989). However, identifying knowledge elements to test when dealing with role characteristics of the unexpected can be complex issue, knowledge testing can have political issues that has ties to status claims and professionalism (Mansfield, 1989). This means that the social context of an occupation needs to be considered in assessment not just

the performance of a task. Wolf (1989) detailed more concerns about the assessment found in competence based education and training. She questioned the identifying and assessing of knowledge in the competency based system. Her argument was that unnecessary to divide competency and education, she argues for the development of performance criteria that allows for a deeper knowledge component that has a higher level of assessment. She proposed that the conceptualisation of competence is not adequate, that a person that is competent has other abilities and characteristics that are not in the sum of elements of competence that are derived from a job analysis. She warned against universal definitions of competence which can exclude a detailed framework of work for occupational /professional field as competence is not value free or independent of the context enacted in.

Thirdly, there was a concern with which occupational standards were formulated and if it lends itself towards knowledge required. Mitchell (1989) was concerned with the way occupational standards were defined and assessed and the role of knowledge in the performance of these standards. Mitchell (1989) looks carefully at the evidence that needs to be collected in assessment methods, she highlights that evidence takes two forms performance and knowledge. Since competence is the ability to perform to the standards of employment, ongoing performance of work can most likely be the highest validity. However, performance evidence is not sufficient as there are often not enough occasions to gather performance in a range of situations. There is a gap, this gap can be filled by an individual's knowledge, and both from the knowledge content the individual must draw on to performance and the cognitive process which is the foundation of performance. She looks critically at different ways

to assess outcomes beyond performance, one of which is direct questioning to assess knowledge.

Mansfield (1989), Wolf (1989) and Mitchell (1989) concerns about competence based education can all be concerns that can be raised when using the OFO in education . Firstly, there is concern around basing curriculum on narrow definitions of tasks and skills that do not consider the responsibility and complexity of an occupation. Secondly, the assessment needs to go deeper the performance of a task, it needs to look deeper at characteristics and abilities that are required for an occupation. Thirdly, that the standards needed to be formulated in such a way that the knowledge required is also made explicit.

This section has provided an example that system for education and training that used skills and tasks as the basis for units and qualifications. There were many concerns around this such as narrow views of knowledge needed and the social complexities of the workplace. It could be argued that occupational definitions in the OFO which is related to skills, tasks and duties in education could face similar challenges in training and education.

This literature review attempted to briefly occupational classification system, skill and occupations, and competence based training. It has highlighted that there could be several problems in using the OFO occupational definitions in education. These problems relate to the way in which occupational classification systems are constructed, and notions of skill and occupation. It also provided an example of a education and training system that used skills and tasks performed as a basis for curriculum and the critiques of these system. The next section will outline how this research proposes to further investigate the use of the OFO in education and its implications.

4. METHODOLOGY

This research is broadly attempting to understand the notion of occupation in the OFO and the more traditional notions of occupation. In order to investigate this comparison there will be three main components of this methodology.

The first component will be a document analysis of the occupational profile and occupational qualification and curriculum under state regulatory departments and the history of occupation found in trade unions and professional councils' that details the development of four selected trades historically in South Africa with possible international comparison with Germany and Scotland.

- The proposed occupations are welders, electricians, hair dressing and bricklayers as these are occupations are being developed or already developed using occupational definitions from the OFO in South Africa. The focus will be on how these occupations are defined in the OFO, education and labour market and how they have changed over the last century (this includes the period before, during and after apartheid). It will also look at potential implications of the shift to the OFO occupational definitions.
- It is proposed that analysis of documentation over time covers three categories
  - Licensing Requirements to practice regulations, this is to identify how practitioners enter and exit an occupation.
  - Outline of Qualification, this is the breakdown of the qualification including education level required

for entry, qualification level and broad description of the qualification. This is to understand what kinds of knowledge are prioritised in education and training for entering an occupation.

– Work Conditions of Service – this is to identify the social and economic context of the occupation, what are the power relationships between employers and workers to determine what influences changes in this occupation.

The second component will be interview with policy makers responsible for developing and maintaining the OFO. It is proposed that there be three to four in depth interviews that focus on broader issues of the OFO such as the conceptualisation of the system, how occupational definitions are created, who plays important roles in deciding the structure and definitions, how it compares occupations across countries and its use in education.

The third component is interviews with key stakeholders that are involved in defining and maintaining occupational identity within the occupations such as professional or trade councils, trade unions, educators and QCTO.

5. CONCLUSIONS

This paper has covered the policy intervention in South Africa through the use of the OFO to create a common language between educators and employers. The paper has shown that the use of occupational definitions under the OFO in education in South Africa could be potentially problematic. There are 3 reasons that this could be potentially problematic. Firstly, the

language of these definitions are created for labour market statistics and it is not clear if this is a language that can be used in education and training. Secondly, the definitions are aggregated to be used across several countries, this excludes the social and economic context of an occupation which could be problematic in using the definition for education. Thirdly, the way in which skill and occupations are defined in occupational definitions may not necessarily lead to clear links to knowledge as they relate to tasks and duties performed which can cause problems when relating this to education. This paper has set out the way in which it will investigate this problem with research question and methodology. This research is proposed as the author's doctoral study.

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Quality and Quality Assurance in Higher Vocational Education in Sweden

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Abstract: This paper focuses on different aspects of quality and quality assurance in tertiary vocational education and training. The discussion is related to the quality principles governing Higher Vocational Education in Sweden (HVE). HVE was introduced in Sweden in the middle of the 1990: s after extensive lobbying efforts, mainly from Swedish industrial organisations. They claimed that secondary and upper-secondary vocational education and training (VET) wasn't comprehensive and/or specialised enough to make pupils employable. To ensure that HVE could match the more precise and detailed demands for specific competences in the labour market, this education concept was designed to function "from the bottom up", not in the traditional "top-down" way. This means that education providers apply for government funding for a special education program on the basis of a strong commitment from a group of employers. Employers are also active in different ways in the programs. Today HVE consists of around 900 different education programs. Except for two vocations – dental nurses and driving instructors – all programs are designed on the provider level.

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But they all have to adhere to national quality standards. The paper will describe how our agency has applied quality assurance standards to this almost anarchistic education system.

Keywords: Quality, quality assurance, demand driven

1. INTRODUCTION

This paper is not a traditional research paper – it is a paper that describes and illustrates how the concepts of Quality and Quality Assurance (QA) can be operationalized for the purpose of making government funded VET more targeted and relevant in respect to the ultimate goal of all VET – to supply the skills and competences needed in the labor market. This article concentrates on tertiary VET in Sweden – Higher Vocational Education (HVE). This form of VET was introduced in the mid-1990s as an answer to the needs of both traditional industry and the emerging new employment sectors in, for example, IT, manufacturing, health care and economics.

HVE education programs today constitutes about 10 percent of Swedish government funded tertiary education. About 47.000 students attend an HVE program this year and the median length of an education program is two years. A little over 70 percent of the students will complete the program and, of those 90 percent will find employment afterwards, most of them in a profession in line with their just completed education program *(Yrkeshögskolan 2016 – kortfattad statistik)*. All HVE education programs are initiated by independent education providers, together with the particular professional representatives (usually employers) that represents the "demand side" of the

education programs. Education providers apply for government funding and compete with each other for funding. The National Agency evaluates the applications and – to make a complicated process short – approve funding according to quality criteria that will be described later in this paper *(Higher Vocational Education).* Today there are over 200 different education providers within the system, 55 percent of them private education institutions. *(Yrkeshögskolan 2016 – kortfattad statistik).* All programs receive government funding for a limited time. To be able to continue, all programs have to re-apply for funding and at that time the programs are evaluated according to the quality criteria described later in this paper.

2. QUALITY IN VET

The quality of any (and all) education systems must be described and measured in relation to the goals and purposes of the specific education systems. Usually most education systems are full of goals, purposes and aspirations – they relate to learning outcomes, professional teaching, student rights, social goals, inclusiveness, etc. In reality, all education programs have to navigate on a sea full of policies, objectives and aspirations. In order to put all these goals and aspirations into a functioning quality assessment structure you have to construct some kind of quality hierarchy that makes it possible, among other things, for our agency to direct funding to the education programs of the "highest quality".

As most government bodies, we have to rely on the "law of the land" to give us directions. The law that governs HVE states in its first paragraph that the main purpose of HVE is to "ensure that

post-secondary vocational education programs that meet the demands of the labor market are created" ("säkerställa att eftergymnasiala yrkesutbildningar som svarar mot arbetslivets behov kommer till stånd"). That means that the *primary goal* of HVE (as with really all VET programs) is to ensure that demands of specific skills and competences in the labor market are met *(Lag (2009:128 om yrkeshögskolan*). To put this in terms of economic theory – the supply side of vocational education are set up and organized to meet the demand side of the labor market. In other words – demand should determine supply – not the other way around. This is, however, easier said than done. The demand side of VET is both volatile and difficult to pin down, especially if the decision makers are somewhat removed from the actual "VET market" (as government agencies usually are…). Of course VET also has *secondary goals* and objectives. Many of these secondary goals concerns the right of students, and prospective students, like admission rules, grading and exam practices, the right to counseling, accommodation, etc. National policies regarding inclusion, gender, integration, etc., also apply to VET and thus must be incorporated into the quality framework. This means that, in quality terms, we have two types of "dependent variables" when we assess quality in VET. The first is education output as measured by, for example, post education employability (there are other possible measurements like employer satisfaction, economic growth, etc.) The second dependent variable focuses on the secondary goals mentioned above. Secondary goals are also usually formulated in national rules and regulations. This means that the primary goal of VET is measurable on a scale – you can have high, "medium" and low goal fulfillment, while secondary goals often are measured in rule adherence – either you follow rules and regulations or you don't.

If the primary and secondary goals of VET are regarded as dependent variables – and thereby are the criteria that define quality outcomes in VET, the education process can be seen as the independent variable that determine or influence quality.

3. THREE DIMENSIONS OF QUALITY

The primary goal of VET is to supply vocational competences according to "market demand". From the student point of view, the primary goal makes him or her attractive on the labor market – or makes it possible to start a business. To meet this goal – or quality criteria – all VET programs must be initiated and continuously updated in close adherence to the actual situation on "the demand side". The education programs must be *"right"* in this respect. But "right" is not good enough. The education process in itself must be carried out in a way that leads to the primary goal. You need a skillful and competent education provider to handle the education process. To make students employable they have to finish the education program (no drop outs) and achieve the learning outcomes required in the curriculum.

Education providers also has to meet the secondary goals of VET as described by the national standards. This mean that we really have three categories of quality in VET, each in need of its own quality assessment structure:

1 Right VET – what education providers teach
2 Good VET – how education providers teach
3 Correct VET – how education providers adhere to rules and regulations

In order to improve quality in each category, it's important to keep them analytically apart. The methodology for quality improvement differs between them. In the second and third category, inspection and accreditation are often functioning tools. Quality in the first category is, however, not easily assessed with the same methodology.

4. STAKEHOLDER SATISFACTION

All quality assurance systems are constructed to meet "customer demand". A well-functioning system thus creates customer satisfaction. In most education systems there is an on-going discussion concerning the value and/or validity of a customer focused approach to quality. The main problem is to identify "the customer". In the case of VET is it the student? Or the future employer? Or the government (who is paying for it)? If we accept the previous definition of the primary goal of VET, we realize that this discussion is no longer especially meaningful. The interests of students, employers and the government (or the "national good") coincides to a very large extent. None of these stakeholders (to use the more accepted term) wants vocational education that isn't up to date and targeted towards labor market demands and, therefore, a vocational career for the students. A VET program can be of excellent quality in category 2 and 3 ("good" and "correct"), but if it isn't "right" (category 1), the education value for any of the stakeholders is very low.

If we accept that all stakeholders have a common interest in meeting the primary goal of VET, we have to actively involve them in the education process. Employers are perhaps the most important stakeholders in VET. Traditionally most education

systems – at least those which are funded with public money – are deeply entrenched in national bureaucratic settings. Syllabuses, curricula, rules, regulations, guidelines, institutional settings, etc., are usually created far from the world of employers. The voice of the demand-side in VET is generally not very strong, especially not on the "ground" level. Students are perhaps the best judges of education related quality – or how "good" a particular education is. In HVE we work mostly with adult students, the median age is around 30 years, which means that most students in HVE see their vocational education as a personal investment. At least in HVE, the students are perhaps the best "school inspectors" we can find.

Since VET in most countries are wholly, or at least partially, financed with public money, governments – national, regional and local – naturally are stakeholders also. But since education in most countries is viewed as an important political arena, governments often have a tendency to over-regulate and over-control. This is done with good intentions but not always with good outcomes. As a result, most VET education providers in Europe are government institutions. Most institutions have a tendency to resist change and favor "continuity". In VET, especially in VET that is targeted toward rapidly changing employment sectors, education institutions often have difficulties in adapting fast enough. An VET program that is "right" one year might be totally "wrong" a couple of years later.

5. QUALITY ASSURANCE IN VET

In order to handle the three dimensions of quality, HVE in Sweden is designed to avoid the problems of traditional VET

described above by changing the "ground rules" for government sponsored VET.

First, HVE is de-institutionalized. This means that HVE providers are not run by the same organization that funds them. HVE providers are thus competing with each other for funding from our agency. And they compete with what they do, or plan to do – not what they are. Our agency doesn't favour certain providers, private or public, but use quality criteria to direct funding.

Second, the funding is for a limited time and a limited number of students. Today the usual timespan is 3-5 years and the median number of government funded students are 70-100 per funding decision.

Thirdly, to get continuing funding, the provider and the specific education program are assessed by the agency in a "quality inspection". And naturally the agency also assesses the future demand, nationally or regionally, for the specific VET program before a decision to continue funding – or not to continue.

Fourthly, the agency also demand that the employment sector contribute to the VET program. Usually this is done by employers by opening their places of work to students in work place learning. Almost all HVE programs have work place learning as part of the program. The usual time a student spends in work place learning is around a quarter of the total time.

All HVE programs also have a "steering committee" were representatives from the relevant employment sector is in majority. Student representatives are also mandatory members. This is a body that has no economic or legal responsibilities and its main functioning is to support the provider in defining the relevant learning outcomes from the program and, through a functioning provider-based quality assurance program, assess if those learning outcomes are achieved by the students.

6. METHODS OF QUALITY ASSURANCE

If we start with QA from our agency's perspective, the definition of three dimensions of quality determines our approach to QA. This means that our most important focus when we assess HVE programs are their output – how well they reach the primary goal of VET. Do the students that were admitted to the program also finish the program and do they get a relevant job within a reasonable time after their exam. If so, the first quality hurdle is passed. To be able to measure how successful the provider is in this respect, providers are obliged to follow up the professional status of their former students six months after the end of the program. This, combined with their obligation to report to our agency the examination results of students in their different courses, we can assess both the completion rate of students during and after the HVE program and how they succeed in getting relevant jobs afterwards. In order to verify the data we get from the providers, the agency has a national follow up strategy that makes it possibly to compare the data that providers submit to another set of results.

Even if the primary goal of VET is achieved to a high degree in a particular HVE program, the agency also has a responsibility to assess how a provider meet the second and third goals. We do this both by inspections on site and by studying documents we request from the provider. To assess the quality of the education process, the agency has identified a number of quality criteria and quality indicators in four different areas *(Kvalitetsgranskning inom yrkeshögskolan)*. First, we assess the functioning of the steering committee. Do the members of the committee, especially those who represent the employers, have the right profes-

sional background and do they give usable input to the providers about how to formulate relevant learning outcomes? And is the provider using their advice? Secondly, we assess the teaching and learning at the program. Are the teachers competent, both as experts in their vocational field and in the teaching situation. Is there a functioning pedagogical framework around the program and do the provider have the necessary facilities needed? Thirdly, we assess the functioning of the work place learning. Do the students get placements that enhance their learning and give them enough "educational challenges" to make their work place learning the "catalyst experience" that the combination of theory and practice in a real work setting can result in. Fourthly, we assess the provider's system of internal quality assurance. How do they work with quality improvement in all the three dimensions of VET?

It is not possible in this paper to get into all the details of our quality inspection process. But I would like to summarize our QA vision with five central points of departure:

Create and support a system that is self-regulating! Governments do not always know best! Especially not when it comes to future demands for specific competences in the labor market. By involving employers in the construction of VET programs and in formulating relevant learning outcomes, we at least get those with their ears closest to the ground to help in this respect. And since the benefits of their involvement is very clear to the employers – they are able to recruit new staff who have the right educational background – our experience is that they are willing to take this responsibility upon themselves. In a well-functioning HVE program it is a very clear win-win situation.

Use the advantages of Quality by Proxy! As in the reasoning above, the inclusion of employers and other representatives of the VET profession in the VET program, gives the provider automatic and quick responses to changing demands for competences in the relevant professional sector. Changes in the curriculum doesn't have to wait for the news to reach any government agency and to wait for them (us) to react and, finally, to revise. The use of students in assessing the quality of the teaching and learning is also a very effective tool for a provider to improve results. Especially in adult education where students have reached a point where maturity which usually is coupled with good judgment. The fact that this group of students also has made a choice, that in many cases comes at a cost, when they re-enter the education system, also makes them stakeholders in the actual meaning of the word. And as such they have a right to be heard – and what they say is usually relevant and productive.

Support achievements, not institutions! One of the main factors behind the success of HVE in Sweden has been the fact that different education providers have to compete for funding. This is a very effective tool for the government to motivate providers to work on quality improvement – in all three dimensions! If funding is guaranteed over time, regardless of quality, quality (in all three dimensions) usually will suffer over time.

Trust – but verify! These words from Ronald Reagan regarding the American-Soviet relationship in the 1980s can also be of use for a small government agency with large responsibilities. Much of what I describe above is built on a contract of trust between education providers and the government. Our experience after

over 20 years of this "special relationship" is that it almost always works. But – an important factor for this is that we have ways to verify the data we get from the provider, when we see a need to do that. The fact that we see this need in rather few cases, we also have the resources to do it – which we probably wouldn't have if we felt a need to treat all our education providers in the same way.

Create an early-warning system! Sometimes problems occur in an VET program that makes it relevant for us, as a government body, to intervene. For us we have two primary components of our early-warning systems: student complains and student results. As I've written earlier, most of our HVE students have their own ambitions for their education and, therefore, have high demands and expectations in the execution of the program. If they are not satisfied, the often contact our agency. This doesn't mean that we always react to complaints, but if we feel that there might be something behind it that the provider should act upon, we contact the provider to get a better picture of the problem. If it is relevant, we continue with a formal investigation which might end in a decision where the provider is required to correct whatever was the problem.

All providers must report how students progress through the program by reporting the results of exams, and the grading of those exams, to the agency. This is mainly done in order for us to have all student results in record if, in the future, records are lost on the provider level and students want to have copies of their exams and grades. Since results are to be reported to us in close proximity to the actual exams, we can use them as an early

signal if not all is going to plan. For example – when practically all students get a failing grade on a specific course, it might be relevant for us to ask the provider some questions...

7. DISCUSSION

As you might have deducted by now, we at the agency are quite proud of the "product" we are intrusted to handle. I don't use the word "administer" for that would put too much emphasis on our role. HVE is mainly based on the the achievements of individual education providers, students and representatives from the professional sectors. If successful, HVE is a win-win-win-win concept where employers, students, providers and Sweden as a nation, all shares in the winning. But there are, of course, also some downsides to this particular VET concept *(Resultat av kvalitetsgranskningen av yrkeshöskolan 2016)*.

First of all – the diversity of the programs, the fact that there are no national guidelines for curricula and syllabus (except for dental nurses and driving teachers), makes it difficult for both prospective students and employers to compare education programs within the same vocational field. When you give this responsibility to individual providers and their steering committees, this is what you get. But do the advantages of doing so, in this almost anarchical education system, compensate enough if we compare HVE to a more traditional approach to tertiary VET, as for instance we can see in Finland?

Second – the short-term funding is a good way to keep providers "on their toes". But it also makes them adopt strategies to minimize the risk of losing their funding. We don't want to support "institutions", but institutions also have advantages. Many

HVE providers rely wholly on teachers with short term contracts and education facilities on short leases.

Third – is our reliance on *quality by proxy* enough to guarantee the students a high-quality education? We have seen examples where steering committees function well "on paper", but not in practice, when we take a closer look.

Fourth – the continuing changes, or up-grading, as we like to see it, of individual education programs, together with the fact that many programs have short lifespans, makes it difficult for students in secondary VET to plan ahead towards a specific HVE program and also for drop-out students in HVE to complete their education at a later date.

As I made clear in my introduction, this is not a traditional research paper. It is rather the opposite – a presentation of a specific type of VET that is constructed in a rather unusual way. And quite under-researched! I therefor hope that this paper can stimulate the appetite of someone within the VET research community. As a believer in quality assurance, I would welcome to be on the other side of the fence, for once!

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Section III:

Research on Language and Simulations

Ups and Downs of Lifelong Language Learning in "UNICO" TEMPUS Project

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Abstract: The influential Western paradigm of lifelong learning was applied to language education in the Tempus project "Lifelong Language Learning University Centre Network for New Career Opportunities and Personal Development (UNICO)", performed by the eleven universities in three countries: the Siberian Federal District of the Russian Federation, the Kyrgyz Republic, and the Republic of Tajikistan, in partnership with the Charles University in Prague, the Institute of Education from the University College London, and the University of Córdoba (Spain) in 2013–2016. The project was aimed at educational influence over society in the remote territories at large in terms of language learners' new opportunities in the labour market and their personal development. Learning of diverse target groups – (1) non-university adult communities, including individuals with special needs, (2) universities for their better involvement into the global academic world, (3) governmental organizations, small and large businesses, (4) sports and cultural organizations, etc. – revealed a wide range of educational ups and downs. This paper builds up a picture of the UNICO

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learners' profiles, their goals and expectations, experiences, perceptions and perspectives.

Keywords: lifelong language learning, UNICO (University-Career-Opportunities), career opportunities, adult language education, personal development.

1. INTRODUCTION

In 2006, European Commission issued the document under the heading *"Key Competences for Lifelong Learning – A European Reference Framework"* which certified lifelong learning as a necessity for all citizens. Ján Figel, a politician responsible for Education, Training, Culture and Youth in the European Commission, in his foreword particularly argued: "We need to develop our skills and competences throughout our lives, not only for our personal fulfillment and our ability to actively engage with the society in which we live, but for our ability to be successful in a constantly changing world of work" ("Key Competences for Lifelong Learning – A European Framework, 2006:1). The document defined a competence as "a combination of knowledge, skills and attitudes appropriate to the context" and set out eight key competences of a lifelong learner:

1 Communication in the mother tongue
2 Communication in foreign languages
3 Mathematical competence and basic competences in science and technology
4 Digital competence
5 Learning to learn

6 Social and civic competences
7 Sense of initiative and entrepreneurship
8 Cultural awareness and expression. (ibid: 3)

The competence in communication in foreign languages undoubtedly overlaps and tightly interlocks all the rest, and it became a core for each of the eleven language centres within the Tempus project "Lifelong Language Learning University Centre Network for New Career Opportunities and Personal Development (UNICO)", performed by the universities in three countries: the Siberian Federal District of the Russian Federation, the Kyrgyz Republic, and the Republic of Tajikistan, in partnership with the Charles University in Prague, the Institute of Education from the University College London, and the University of Córdoba (Spain) in 2013–2016. The project participants identified English language needs in the regions, and explored current and future dynamics of languages in education in remote territories at large in terms of language learners' new opportunities in the labour market and their personal fulfillment.

Projects initiatives are often triggered and then driven by some non-formal calls or challenges, followed by the bottom-up approach in finding the solutions. In UNICO case, future project team members identified two gaps in the Russian field of the English language, set up the tasks, organized them into specific groups or work packages, found the partners, invited the experts, informed the stakeholders, and submitted the project proposal.

The first gap was unexpectedly revealed by the Russian Census carried out in 2010. The Census 2010 Returns (Volume 4, Article 5 "On Language Proficiency of the Population of Russia", p. 142–143) showed that only less than 5.48% (7,574,303 people)

of the Russian population affirmed a command of the English language, a today's lingua franca.

Table 1.
Fragments from the Russian Census Returns (2010); Article 5 "Language Proficiency of the Population of Russia"

Article 5 Language Proficiency of the Population of Russia	
	Population, people
Declared language proficiency, languages	138,312,535
English	7,574,303
German	2,069,949
French	616,394
Spanish	152,147
Swedish	7,395

The low level of the language proficiency on a nationwide scale was next by another indicator – EF EPI, which is the English Proficiency Index of the Education First, the worldwide renowned education private company that specializes in language training, educational travel, academic degree programs, and cultural exchange. (The company itself was founded in 1965 by Bertil Hult in the Swedish university town of Lund, and is now privately held by the Hult family and is headquartered in Lucerne, Switzerland). EF have been compiling the biggest ever internationally comparable samples of English learners: they started with some 2 million people taking identical tests online in 44 countries in 2011 and reached 72 nations in 2016.

The EF English Proficiency Index places the surveyed countries and territories into five proficiency bands: Very High, High, Moderate, Low, and Very Low. The Very High Proficiency niche has been always occupied by Denmark, Finland, the Netherlands, Norway, and Sweden, with the sole exception in 2013, when Estonia moved Finland. Scandinavians are shockingly fluent. The Economist states (2011, April 5): "Several factors correlate with English ability. Wealthy countries do better overall. But smaller wealthy countries do better still: the larger the number of speakers of a country's main language, the worse that country tends to be at English. This is one reason Scandinavians do so well: what use is Swedish outside Sweden?"

Table 2.
EF EPI: Top Very High Proficiency countries
0* indicates number of countries-participants
1* indicates scores

	2011	**2012**	**2013**	**2014**	**2015**	**2016**
0*	44	54	60	63	70	72
1 1*	Norway 69.09	Sweden 68.91	Sweden 68.69	Den- mark 69.30	Sweden 70.94	Nether- lands 72.16
2	Nether- lands	Den- mark	Norway	Nether- lands	Nether- lands	Den- mark
3	Den- mark	Nether- lands	Nether- lands	Sweden	Den- mark	Sweden
4	Sweden	Finland	Estonia	Finland	Norway	Norway
5	Finland	Norway	Den- mark	Norway	Finland	Finland

In reference to Russia's position in EF EPI ranking of countries, it has always been in Low category, between 29 and 39 places.

Table 3.
EF EPI: ranking of Russia
33* indicates scores

2011		**2012**		**2013**	
31	Brazil	28	Iran	30	Sri Lanka
33 **33***	**Russia** **45.79**	**29**	**Russia** **52.78**	**31**	**Russia** **51.08**
34	Dominican Republic	30	Taiwan	32	Italy

2014		**2015**		**2016**	
35	Ecuador	38	Ecuador	33	Taiwan
36	**Russia** **50.44**	**39**	**Russia** **51.59**	**34**	**Russia** **52.32**
37	China	40	Mexico	35	Japan

As a matter of interest, the lowest EF EPI scores have been calculated between 31.74 and 42.53:

Table 4.
EF EPI: the lowest ranking countries
* indicates scores

2011		**2012**		**2013**	
44	Kazakhstan	54	Libya	60	Iraq
44*	31.74	54*	42.53	60*	38.16

2014		**2015**		**2016**	
63	Iraq	70	Lybia	72	Iraq
63*	38.02	70*	37.86	72*	37.65

Despite criticism for lack of representative sampling in each country, respondents' self-selection, and purely online format, EF EPI obviously holds food for thought as well: it measures people's ability to speak and understand another language, draws comparisons between and within regions, might work as evaluation of workforce English skills for businesses and play incentive roles in educational projects like UNICO. From this lag, the initiative group saw the first trigger for a project.

The second gap could be compared with rarefied English-speaking air, even in big university cities, though the needs and conditions for changes became increasingly apparent. Firstly, at the universities, research and technological centres, business incubators, the English language got recognition as a basic and commonplace competence. Secondly, English became more significant in maintaining a competitive business edge. Thirdly, the added value of learning languages became profoundly important for authorities, media, sports and culture circles. Finally, mobile adult society as a whole acquired the idea of advantages of informal language education for personal fulfillment and the educational paradigm of lifelong learning began to sound loadly. It has to be specially said about disadvantaged groups – the disabled, unemployed, and migrants: their professional, educational and personal opportunities would often unexpectedly appear with appearance of language knowledge and skills.

Summarizing the above, identified language needs and generated project ideas for contributing in language education in remote places met fertile climate for building the net of language centres three years ago.

2. UNICO PROJECT BACKGROUND

The Tempus programme of the European Commission, as a whole, was launched in 1990 and aimed at supporting the modernisation of higher education in Partner Countries outside the European Union. The targeted regions included Eastern Europe, Central Asia, Western Balkans and the Southern Mediterranean. Of the 27 countries that the programme worked with outside the EU, six were in Eastern Europe. Many Tempus projects achieved significant results in this period.

Three types of actions were supported within Tempus: joint projects, structural measures, and accompanying measures. Each had their own aims and foci, but they all served to cooperation at higher education level, and in the wide sense, the Tempus programme aimed to strengthen civil society, promote democracy, and enhance mutual understanding and intercultural dialogue between countries.

UNICO belonged to a joint project category, which targeted higher education institutions to develop, modernise and disseminate new curricula, relevant teaching methods and teaching materials. Specific objectives of the project were ambitiously formulated in the proposal as follows: "... to build up the network of LLL UNICO Language Centres for Excellence among the eleven universities in the Kyrgyz Republic, the Republic of Tajikistan, and the Siberian Federal District of the Russian Federation as accelerators of economic growth in the remote territories with the view of the changes in society at large in terms of new opportunities in the labour market and personal development. UNICO will focus on the best modern educational technologies and programmes on the basis of acquisition of formal

qualifications (certification of language competences within the requirements of the Common European Framework for Languages) for different target groups: (1) non-university adult communities, including individuals with special needs by providing them with tailored courses; (2) universities for them to be better involved into the world academic communities; (3) governmental organizations, small and large businesses; (4) sports and cultural organizations, etc.". Research as such was not the project target but it threaded everything: its very start, its approaches, strategies, activities, relations, outcomes. Like many other joint projects, UNICO aimed to enhance quality assurance mechanisms in institutions, and strengthen their contribution to lifelong learning and the recent 'knowledge triangle', which refers to the interaction between research, education and innovation, the key drivers of a knowledge-based society.

Created in 2014, the UNICO language centre at Siberian Federal University, Krasnoyarsk, Russia became one of the 11 new units approved by 11 universities long-distance from the European Commission which supported and monitored the project. The appearance of the new structure, its relevance and principles was encouraged by the SibFU university management board and later by the Advisory Board, and confirmed by the Regulations on the UNICO centre. The project teams from all the university partners had a number of training courses during the project lifespan. Take one example, the Institute of Education of the University College London provided a two-week training programme for the project participants in 2014, to develop quality assurance, including improving language education of adult learners and better understanding of modern policy in the field of LLL.

Pilot teaching for different target groups on the basis of developed programmes started in 2015, and since then more than 100 adult learners completed courses in UNICO centre in Siberian Federal University. The adult learners were offered seven 120-hour courses on the programmes developed for the project:

1 English for Personal Development
2 English for Professional Development
3 English for Business Communication
4 English for Career Enhancement
5 English for Academics
6 English for Sport Careers
7 English for IELTS

In the project, the project team set up five principles for performance of UNICO language centres:

1) *Relevance:* Personal and professional needs of lifelong learners and needs of knowledge society do not contradict. UNICO educators are recognized as lifelong learners themselves.

In operation, relevance as a principle was confirmed by project meeting disputes, and discussions in the government offices (the local Ministry of Agriculture, Ministry of Sport, and Ministry of Ministry of Social Policy)

2) *Involvement:* Lifelong learners, language teachers, stakeholders are regarded as active participants in the educational process in the regions and wider with shared responsibilities for regional development. Apart from that, UNICO centres map out regional educational needs, inform and encourage city residents to take advantage of LLL opportunities offered by university language centres.

Operationally, many factors served this principle: liaison with local stakeholders such as public authorities, NGOs, businesses, universities, and local champions in cultivating educational values within the city and building capacity for learning and change; creation of Advisory Boards, round tables and other discussions; rector's orders on Advisory Boards; mass media coverage.

3) *Growth:* UNICO centres initiate establishing partnerships with universities and non-university partners at regional, national and international levels for sustainable growth and development, as well as provide appropriate guidance and counseling service for learners.

In actual practice, this principle became evident closer to the project end in the form of signing of bilateral agreements between the universities, joining existing associations and networks.

4) *Empowerment:* UNICO centres encourage lifelong language learning in formal and informal, and non-formal settings and provide learners with a variety of strategies and tools for retrieving and applying or transferring new language competences and knowledge to professional and personal situations.

Further to that, all the UNICO learners have been issued two certificates: the UNICO format and the university official document on completing a bespoke course.

5) *Integration:* UNICO centres provide assessment-driven learning which is based on defining clear standards of the Common European Framework of Reference for Languages: learning, teaching, assessment, identifying the point from which learners start, determining the progress they are making toward meeting standards, and recognizing whether they have reached them.

In practical terms, educational guidance and counseling service for learners led to some measurable results:

- seven learners successfully passed IELTS and CAE exams;
- more than ten alumni have successfully applied for international exchange university programmes (Germany, Switzerland, the Netherlands, Italy, India, the Republic of Korea);
- eight alumni have successfully applied for Global Education Program (GEP), a Russian government funding program,
- a number of scientific articles have been written by UNICO learners in English.

3. THEORY AND METHOD

The project as such was based mainly on the theory of adult learning, which for its part could be considered as one facet of multifaceted theory of learning. The theory of learning is an old tree, planted by Plato in ancient Athens, and many scholars and universities since their foundation over 800 years ago kept and have been keeping the tree in bearing, among others are big names and studies: John Locke who believed in humans' "mental powers", B.F. Skinner and other behaviorists who described learning is acquisition of a new behavior through conditioning and social learning, cognitivists (J. Bruner, Shell, Winna) who responded to behaviorism and explained social role of acquisition, mental planning, goal setting, and organizational strategies, constructivists (J. Piaget, J. Dewey, D.A. Kolb) who advanced an idea of effective teaching environments where the teacher acts as a facilitator and encourages students to construct knowledge by working answering open-ended questions and solving real-world problems. For centu-

ries, hundreds of beautiful minds contributed to the theory of learning and kept it fresh and time-sensitive, contradicting Goethe's "All theory, dear friend, is gray, but the golden tree of life springs ever green".

For UNICO research angle in the 'knowledge triangle', the project team chose a foundation of nine basic assumptions from the past and present of adult learning theory and took them as principles for adult language education. These postulates helped us explain the ways that adults grew, transformed and developed through both formal and informal language learning experiences during their lifetimes. The data were taken from classroom observations, survey results, learners' follow-up interviews. The interviews were structured, but conducted in a more informal, conversational interview style in which the interview maintains no emotional or social distance from the participants to approximate everyday social conversation (Johnson,2015:9).

1) *Recognising prior learning* is a comparatively new idea of last three decades, and it is different for formal and informal learning. In formal education, it is mainly taken as a form of assessing someone's skills or knowledge, regardless of where and how these were learned. European Universities' Charter on Lifelong Learning (2008) sets recognising prior learning as one of the universities' commitments to ensure that all with the potential to benefit from higher education provision are enabled to do so, it is essential for universities to develop systems to assess and recognize all forms of prior learning. It is a straightforward process of assessing learners' language skills, regardless of where and how these were learned. It does not consider where a person worked, their age, gender or physical attributes.

Recognition of adults' prior language learning in UNICO centres required different approach and meaning because of its non-formal setting. During enrollment procedures (testing, interviews, surveys) many adult learners claimed to be complete or false beginners, which later appeared not to be real truth. The applicants often underestimated themselves naming several reasons:

a Deficiency in English language education: *"I never learnt English. I did German/ French at school."* (Many learners' educational experiences derived from the Soviet traditions: English, German, French or Spanish languages were studied as foreign languages at schools in the USSR and, unlike other subjects, left much to be desired (Ivanova, V. & I. Tivyaeva, 2015).
b Lack in English language education: *"I started from English at school, and then we moved to another place, where they did not teach foreign languages at all."*
c "Poor teaching": "*I had poor teaching. Our teacher of English spoke Russian at the lessons, we read and translated texts sometimes, that is it.*"
d "Poor learning": *"I used to be a bad learner. I have never been interested in English."*
e "Mixed bad": *"During my study years (I forgot when it was) I had a little bit of everything – bad English, bad German, English again, followed by study with my own kids. Zero result."*
f "Complete failure": *"I am not able to learn foreign languages. I just want to try again."*
g "Poor thing" (a learner with cerebral palsy): *"My teach-*

ers were always pitiful to me, never challenged me. I never spoke in English classes, I read a bit though."

Despite low self-assessment, the very first classes often showed the opposite results: the learners demonstrated their awareness of language functions. They knew how to give a compliment, to ask for information, to respond properly in social situations, to tell about themselves, they knew a lot of culture and quite enough for the start about the language structure. Many felt shy, but as a rule, they reevaluated their prior formal and informal language learning.

2) *Valorisation of learners' life experience and personal motivation to language learning*. One of the pillars in adult learning theory is recognition of learners' experience as the primary source of their education. The idea is rooted in 1938, when a pre-eminent educational theorist John Dewey published the book "Experience and education", where he wrote in Chapter 7: "It is a cardinal precept of the newer school of education that the beginning of instruction shall be made with the experience learners already have; that this experience and the capacities that have been developed during its course provide the starting point for all further learning" (Dewey, 1938/1997).

The prevailing wisdom of education for children and adults is, as S.M. Johnson argues, that people of all ages learn best through experience. However, the seeds for experimental learning as a fundamental methodology were sown by adult educators (Johnson, 2015: 13–14). Adults do not learn for the future; they apply language for the present. Development of learner experience-based learning curriculum framework as a coherent and

innovative means to provide flexible and open learning opportunities for those in specific work, those in academic field, or out of work to increase their language proficiency for study, work, leisure and personal enrichment. Adults come (often come again, after years of leaving their alma-mater) into the classrooms possessing a wealth of life experiences: they travelled, met people from other cultures, were involved in international professional contacts, experienced prejudice, built relationships. They make sense of their past and current experiences, communicating them in English, they would feel bored and even deceived if a teacher started practicing, for example, the past simple tense in traditional PPP (Presentation→Practice→Production) paradigm, even if a number of communicative drills and activities were organized. Instead, real-world situation might be used, when overcoming language barriers in a relaxed atmosphere (affective component) will become a fringe benefit of the learning process.

When a university student some years ago, learner A. participated in the *Work and Travel* programme and spent the whole summer in the USA. He was asked to tell about his work-life balance, what he did enthusiastically showing some photos and short videos. The experience was unique for the group, and A. was asked about twenty questions (different types, past simple): *Where did you stay? Did you try to rent a car there? How much did petrol (gasoline? OK, thanks) cost?* etc. Another time, learners willingly compared their own and somebody else's performance at work according to certain criteria (and practiced the degrees of comparison). Specifically tailored experience-based activities were incorporated in UNICO programmes.

3) *Flexible learning environments*. In the 21st century, the notion of learning environments (or learning spaces) often refers

to a learning programme, strategy, and specific content. The term has been constantly acquiring new meanings under new studies. In the recent UCL's research (Kersh et al., 2011; Kersh et al., 2012; Evans et al., 2006), the learning space is described as a combination or overlap of a range of components, such as physical space, learning contexts and environments, formal/informal learning and virtual learning. Research suggests that engaging in learning and applying skills not only within but across a variety of contexts and spaces enables learners to develop a range of transferrable skills required by the contemporary economy and knowledge society [ibid]. Johnson (2015: 52) places the utmost importance to both the physical space and the culture in the adults' language classroom. In the UNICO centre, a number of constituent elements, both tangible and intangible, let the project team build learning spaces to meet the adults' personalized diverse requirements, interests, needs and aspirations:

- up-to-date equipment and software;
- educational resources (textbooks, reference books, access to online assets, etc.)
- the educational programmes to choose from;
- competent staff;
- collective knowledge;
- connections between project university partners.

The last of these components should be paid special attention in multi-partner projects like UNICO: knowing who is available to do what, what resources or finished products can be provided by other parties, what useful information could be shared within the network makes functioning any project smooth and

cost-effective. Connections are intangible, their financial value is almost impossible to accurately calculate and measure in the units of measurements.

4) *Equal access to language learning opportunities for diversified learner population.* UNICO centres declared this equality through advertising equal educational services and introducing equal programmes and approaches.

Despite the fact that equality and diversity approaches are recognised as central to planning and implementing language courses, and high expectations and an ethos of mutual respect are considered to be the norm in the language classroom, the underlying conditions of initial misbalance between learners with tertiary educational degree and low-qualified learners hinders the latters' participation in language learning. The baseline UNICO study indicated that language learning opportunities were misunderstood, underestimated and finally rejected by two groups of the temporarily unemployed young adults during the project presentation and the onward discussion in Krasnoyarsk Regional Employment Centre. The recent research findings in the UK, as an example, indicated that young people making a transition from school to work were experiencing increasing difficulties and uncertainties (Evans at al, 2013). Conversely, the qualified adults engaged in working and social activities were much more likely to be open to new learning opportunities. That way, adult language learning was marked by a Matthew effect described in few educational studies (Knipprath & De Rick, 2015; Kononova & Obidina, 2015), according to which literally "the rich get richer and the poor get poorer". The phenomenon could be applied to cumulative advantage of human capital and its influence deserves thorough attention in a variety

of ways such as choosing special educational approaches, teaching languages for migrants, or focusing on informal and non-formal learning activities.

5) *Learner-centeredness.* Personalised learning is the main strategy for ensuring that differing needs are met; individual differences in learners are recognized. The concept of learner-centeredness is not new and well described in sense of learners' roles, learners' self-responsibility and self-engagement, their involvement in making decisions on what and how to learn, learning strategies and many other aspects. However, learner-centered language teaching in the groups of adults can be challenging to implement, not only because of teacher's awareness of different learning styles and experiences in the group and choice of relevant activities, but also learners' objectives and motivation, which could be illustrated by a pilot UNICO groups learning English for academic purposes. The group gathered ten ambitious young university post-graduates seeing language learning as a required step to achieve clear professional goals in the sphere of research. The group, as many learners of this category were inspired by instrumental motivation (Johnson, 2015), the concept of which often presupposes "a unitary, fixed and ahistorical language learner who desires access to material resources that are the privilege of target language speakers" (Norton and McKinney, 2011). They wanted to know all the easily confused academic words and their appropriateness (*eventually* or *finally*? *specially* or *especially*? *profit* or *benefit*? *reach* or *achieve*?), common synonyms, phrasal verbs, all prefixes and suffixes, abbreviations, and all punctuation nuances. They wanted to sound and to write in the contemporary manner, and they did their best. They enjoyed maintaining autonomy over their own learning

process and content, they enthusiastically embraced the advantage of slide-presentations of their own research findings, and they pleasured in reading and writing academic paragraphs. The teacher used to turn round tons of the latter-day resources, guided the group performance, gave feedback, and was entirely involved in the complete learner-centered environment.

6) *Modularisation of programmes and curricula.* The language programmes' components may be separated and recombined to meet learners' needs. Modular-based programmes for UNICO centres became the result of the project team training and follow-up discussions in the Institute of Education, UCL. The flexible basis allowed the courses' components to function independently, interchangeably, and implement reflective practice in the form of the famous Kolb's cycle (1984): in most cases modules started with learners' concrete experiences, then they reflected on how they went (reflective observation) leading to a generalisation on what had to be done to improve language proficiency (abstract conceptualisation). The cycle then began again and led to the following module.

7) *Quality, excellence and innovation in learning:* Best national practices and international expertise for teaching and evaluating lifelong learners' performance were chosen for essential learning and teaching tools. Though a mix of modern English language teaching methods and techniques were described in the programmes and applied in practice, for most UNICO courses, the project team chose critical reflection as a key element in adult learning. Reflective teaching and learning (Bailey, 1996; Farrel, 2007) builds learners' trust and confidence.

Traditionally, in terms of understanding what learning is, adults fell into two main categories. The first group think of learning as knowledge acquisition. In UNICO, this group was quite big, and during enrolment they gave the following opinions:

- "I better learn when I learn by heart."
- "I need to understand grammar, to learn the rules."
- "I like the textbook of my daughter, the grammar is clearly explained there."
- "Let's sing English songs to learn grammar and vocabulary."

The second category make sense of information tend to make sense of knowledge in relation to the real world and their personal or professional experience (Johnson, 2015: 23). UNICO project team direct adult learners to critically examine their own and other people's beliefs and values in the light of new knowledge. Many language activities foster critical reflection in an adult language classroom: summarizing the key points of the lesson, relating the lesson to the course, relating the lesson content to personal experience, pointing out links between the lesson content and the modern world, pair/ group discussion about learning strategies, giving opinions, agreeing and disagreeing, explaining, etc.

8) *Inclusive language learning.* **Everyone has a right to learn languages, including those** from disadvantaged social and economic groups and people with physical and learning disabilities. In a group of young professionals, we had some learners with poor previous language learning experience because of special

educational needs. Some of them quitted before they tasted the language, despite our 'learner-centeredness'. And the remained soloist, a young woman with cerebral palsy, smart and ambitious, chose free individual tuition instead of inclusive learning, and was inspired by an integrative motivation for language study. In this category, the learners identify personally with the target culture or desire to communicate with people from a target culture. Integrative motivation for learning is associated with improved learning outcomes in general (Johnson, 2015: 43). Currently, our learner aims at having a master course in Europe in the long run, and she underestimates the importance of inclusive language education, which in practice was not provided to her within the project, that we consider now as a lack of teacher theoretical knowledge and practical experience, a deficiency in a teacher competence and a challenge for the future.

9) *ICT-supported teaching and learning:* open-access resources, virtual classrooms and social networks, and ICT at large are used to give lifelong learners access to information, promote interaction and communication, and enhance digital literacy skills.

Technology in language teaching and learning is not new, in different forms it has been around in language education for decades: CALL (Computer Assisted Language Learning) appeared in the early 1980s, TELL (Technology Enhanced Language Learning) was introduced in the 1990s, and ICT (Information and Communication Technology) is becoming a norm (Dudeney, G. and Hockly, N., 2007). Many adult language learners grew up with technology, and it became a natural and integrated part of their lives. That is why, no causes of technophobia have been identified during UNICO pilot courses, and

ICT was and is applied on everyday basis for regular language practice, testing, formative and summative assessment.

4. RESULTS

Language education as such, and most research in language education assume learners' communicative competence as a primary teacher goal. The UNICO experience showed that adult learners did not pursue B2 or C1 language level or conversational fluency as a main objective. They often valued intangible outcomes: new opportunities at workplaces, new professional contacts without internationally recognized certificates, new knowledge about other cultures, together with new language skills. All these achievements were not necessarily high and clear-cut, but they gave different career opportunities, unachievable before, as well as opened doors and motivation for further learning. On the other hand, adults travel to other countries on vacation and sometimes meet people from other cultures both on-line and off-line, and our learners acquired the practical value and benefits of limited, short-term language study in the multi-faceted world.

Another important implication for adult foreign language study is a recourse issue. Unlike English language teaching two decades ago, an educational market offers a diverse variety of textbooks, reference books, software programmes, ICT and online resources, authentic learning materials, and cutting edge educational facilities. But in the midst of these educational riches, there soars a priceless resource, which is adult learner's life experience, the core for experiential learning in the UNICO centre.

5. CONCLUSION AND SUGGESTING FOR FURTHER RESEARCH

In conclusion, the paper outlines a number of principles of adult language learning within TEMPUS project in remote university cities of the Russian Federation, the Kyrgyz Republic, and the Republic of Tajikistan, and some practical implications for both language learners and language teachers were introduced through the example of the UNICO language centre in Siberian Federal University, Krasnoyarsk, Russia. The study showed that diverse opportunities of adult language learners differ from common undergraduates' education. The small research opens perspectives for the following issues: what forms of summative assessment can be applied for non-formal language education? what are the options and implications of language learning for knowledge economy? what is the role of affective factors and barriers for adult language learners? how to properly teach adults with special educational needs? how to provide sustainable development of new university units when the project is over? what is the contribution of language proficiency in the structural change (Guile, D., 2001) of a 'learning society'?

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Professional German Language Competences: Demands and Strategies of Promotion in Training Preparation Modules

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& Nina-Madeleine Peitz

Abstract: Training Preparation in the German Vocational Education system, which was developed to prepare students on their way from school to work, is faced with an increasing diverse background of students with respect to their mother languages and language abilities in German. Professional teachers/trainers are usually not qualified to deal with this linguistic diversity by adopting their qualification modules to students' language deficiencies. Concepts of integrated content and language learning/teaching emphasize the role of scaffolding approaches that require didactic strategies based on an analysis of language demand but also students' language deficiencies. The project "Inclusive Qualification Modules (QBi)" connects to these challenges as it exemplarily analyses linguistic needs and students' language deficiencies in corresponding modules in four German vocational schools. Results of the analysis will be used to develop qualification modules that connect to language deficiencies of students in an inclusive way. Therefore, activities of

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analysis, development, implementation and evaluation will be connected in a circular design based research process. The paper focuses on the first step of the project – the analysis of language demands and deficiencies as documented in the four case studies. Results are based on workshops and group interviews with teachers but also curricular analysis, observations and students' documents.

Keywords: Professional Language Competence, Training Preparation, Students' Linguistic Needs, Language in Vocational Training.

1. INTRODUCTION: THE PROJECT QBI

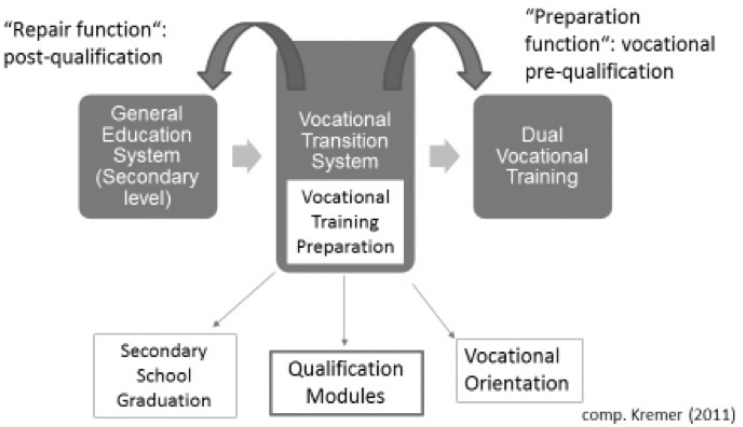
Within the context of a close collaboration between four vocational schools in North Rhine-Westphalia (NRW), Germany, the University of Paderborn is currently carrying out a project with the focus on with young adults' vocational qualification and orientation. The so-called project QBi – Inclusive Qualification Modules in a Dual Training Preparation[7] (German: "Qualifizierungsbausteine inklusiv in einer dualisierten Ausbildungsvorbereitung") deals with detecting and specifically improving the problems arising in the environment of the transition between school and profession. The ongoing project, having been started in June 2016, is financed by the federal government of North Rhine-Westfalia and the Europena Social Fund. It is conducted by three professorial members of the center of

7 For a detailed description of the regulations on vocational training and examinations of the NRW Ministry of Education, see Ministerium für Schule und Weiterbildung des Landes Nordrhein-Westfalen (2016).

vocational education and training (cevet) at the University of Paderborn – Prof. Dr. Hugo Kremer, Prof. Dr. Peter Sloane and Prof. Dr. Nicole Kimmelmann with their teams.

Following its title, the practical goal of the project is to develop *inclusive* Qualification Modules (QM). QM are situated in the German Vocational Transition system as part of the Vocational Training Preparation System (see Figure 1).

Figure 1:
Training Preparation in Germany (NRW)



Based on their official definition, QM are learning units [...] defined in terms of content and time developed from the content of approved training occupations" with the intention to impart the fundamentals of vocational competences (BBiG § 69 Para. 1; own translation).

Hence, this is an insight and attempt to analyze the characteristic everyday life of vocational schools with the aim of guiding students, teachers and other persons involved within the process

by consultation and co-development of strategies and materials, measuring the success and applicability of these developed design products and materials and of finally deriving recommendations for actions. After having completed the implementation phase, the project having been set to run for two years shall have produced and established viable, feasible and adaptable qualification modules. These modules shall then be utilized by the vocational schools regarding their fundamental work of the course of study as e.g. the annual didactic planning.

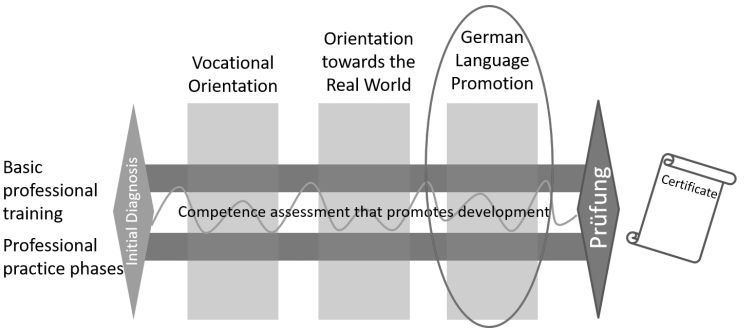
Schools and teachers working in QM are typically faced with different challenges connected to their educational task and highly diverse target group, that can be summarized as a complex combination of subject-related focus and the necessity of counseling / personality development, language competence and vocational orientation (cf. Kremer, 2011).

Therefore, the overarching objective and framework of the investigation is to find answers of the two explosive and important topics of *inclusion* and *integration* for both science and practice. Thus, the target group's heterogeneity (young adults with diverse socio-economic, cultural, educational backgrounds), the vocational competence as well as the promotion of subject-related basic qualifications play an essential role when it comes to finding ways to improve adolescents' optimal preparation for the job market. Furthermore, apart from inclusion and integration, it is as well the adolescent's individuality that shall be considered in order to be able to develop and promote them in a more efficient manner.

By considering these preconditions and goals, three different, though interconnected, priority areas of research have been determined representing the inclusive character of the project's

qualification modules: 1. Individual vocational orientation, 2. The orientation towards the real world of the students and 3. German language promotion as part of the QM. The main emphasis of this article is set on aspect 3 (see Figure 2).

Figure 2:
Aspects of inclusion in the project QBi



2. GERMAN LANGUAGE PROMOTION AS PART OF QUALIFICATION MODULES

The relevance of German language promotion within the qualification modules can be legimitated from different perspectives. First, language competences are deeply interconnected with all formats of teaching and learning in QM and can therefore be seen as a cognitive competence of the overall vocational action skillset. The ability to put questions, opinions and results into language is neccesary to get access to knowledge (Ehlich, 2007). Second, language competences determine one's ability to build up social contacts, such as between teachers and learners, learners and learners but also learners and internship companies in the period of vocational orientation and training. Language

competences in such social contacts are not limited to the correct use of grammar and vocabulary but include also nonverbal aspects of communication and sociolinguistic norms, as a common language is a key element of group belonging (cf. Oksaar, 2003, p. 38 ff.). Third, language competences are also a central part of identity. "Language determines not only how we are judged by others but how we judge ourselves and define a critical aspect of our identity: Who we are, is partly shaped by what language we speak" (Bialystok & Hakuta, 1994, p. 134). Developing the appropriate language competences for learners in their period of vocational orientation and training can therefore contribute to a professional identity building process or hinder it. For learners with different cultural backgrounds, such as the group of former refugees in QM, language development processes are also an element of building up their cultural identity (Taylor, 1993, p. 21 et seq).

The approach that is implemented in the project with respect to language promotion can be defined as an integrated content and language promotion (cf. IQ Fachstelle, 2017). In contrast to the well-known concept of content integrated language learning (CLIL) (cf. Marsh, 2002), it is not a foreign language that is used for content teaching or that has to be trained connected to the content, but it is the mother language or a second language that needs training in and for certain content related targets and issues. Indeed, the purpose of the project is to support learners with deficiencies in German as a first or second language while they are faced with vocational content at the same time. That means, German language competences are trained as central element of vocational competences in the vocational subject lessons.

Vocational teachers need to connect learning targets of content and language focusing learning in a very explicit way. Additionally, language teachers for the subject *German* need to focus on content relevant aspects in the vocational subjects, when teaching German lessons in order to complete the bilateral approach. This force an implementation of the approach in the vocational subject lessons and in German lessons in qualification modules! Subject- and language teachers need to find ways of cooperation and adjustment. Subject teachers have to gain a new critical language awareness connected to their subjects. German language teachers need to open their perspective towards the vocational content in order to illustrate and train German language competences with respect to the subjects (Kimmelmann, 2012).

As it has been pointed out by various literature studies in the past few years in Germany (see f. ex. Baethge, 2014; Efing, 2014; Gehrig, Kimmelmann, & Voigt, 2014; Sogl, Reichel, & Geiger, 2013; Kimmelmann, 2012), the advantages of combining content and language learning in the context of vocational training are clear and important to recognize: the subject relevance and differences of relevant language competences are taken into account. The simultaneous training of both aspects supports motivation as learners recognize the need of language competences in successful vocational situations. Language promotion strategies are used and trained in the context – for learners, there is no need of transfer. Learners with different language skills or deficiencies can profit from the interaction with other learners on different levels.

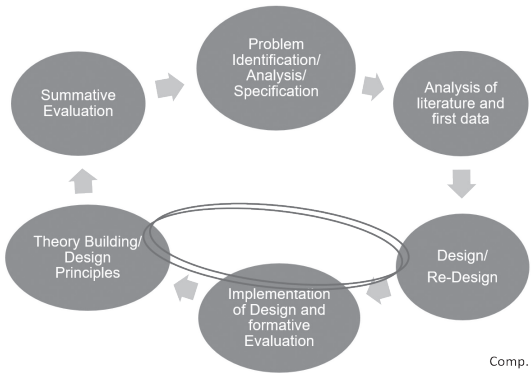
In contrast to the advantages for learners, vocational teachers have to be trained for this new challenge (Kimmelmann, 2010, p. 437 et seq.).

3. RESEARCH DESIGN

At the current state, there are no studies or good-practice examples existing to deal with learners' language deficiencies within QM in the above-described inclusive way. Thus, the project follows a design-based research method, combining theory building with a practical development process (Euler, 2014). Barab and Squire (2004, p. 2) describe design-based research as a scientific approach that is "not so much an approach as it is a series of approaches, with the intent of producing new theories, artefacts, and practices that account for and potentially impact learning and teaching in naturalistic setting. "Prototypes of developed interventions are continuously re-designed throughout the whole research process while reflecting evaluation results of every intervention's iteration (Euler, 2014).

Following the idea of design-based research, the project is organized as a design-based research cycle in its typical elements (see Figure 3).

Figure 3:
The Design-Based Research Cycle of the Project



Comp. Euler (2014)

Step one and two can be summarized as the pre-study of the project (Plomp, 2010, p. 15; Jahn, 2014, p. 7 et seq.). From the scientist's point of view, it is strived to gain insights into the relation between the institutional players and the vocational fields of actions here. This includes the analysis of the context demands as well as literature and first data from the field in order to limit the examination and research questions. Also, the goal is to formulate the first idea of the design as well as design principles derived from the project. The paper focuses on results from this phase of the project.

The strongly common process of research and development between researchers and practicioners from the analyzed field (e.g. teachers) in all phases are characertistic of this research design. In the project, four different vocational schools (VS) from North Rhine-Westfalia, Germany, serve as collaboration partners each of them representing one or two specific professional sectors or domains (see Table 1).

Table 1.
QBi project partners and their professional sectors and domains

Vocational School (VSn*)	Professional sector and domains
VS 1	technology, health & social issues
VS 2	business, technology and social issues
VS 3	industry and handicraft
VS 4	business & public administration

* n = 1,...,4

Researchers and practicioners fulfil different roles and fields of action as stated below:

Vocational Schools (VS): The focus is on the development and testing of the qualification modules but also dissemination in the vocational schools. Participating teachers are also responsible for the involvement of other teachers in the qualification modules in a project-based understanding.

Researchers of the cevet: Here, the focus lies on the project coordination based on the scientific expertise on different areas of action. Developmental roles are connected to a conceptual framework of integrated content and language learning. Mentoring and supporting of development work is organized through the researchers' team, building up the practicioners' expertise via workshops and developmental meetings with every vocational school. Scientific roles also include test and evaluation reports as well as designing and organizing symposia.

SOURCES OF DATA:

For the context analysis, a set of different methods is used consisting of observations and presentations of participating teachers/schools, thematical workshops with all participants, group discussions/interviews with teachers, scientific observations in schools, curricular analyses, analyses of student documents and official language competence tests.

The following results are mainly based on information derived from group interviews, workshops and discussions with the participating schools and teachers. The workshop had been used to train participating teachers in the integrated content and language

learning strategies but also to assess and discuss specific language demands of their target groups. Group discussions are a permanent format of interaction with participating schools to clarify experiences and questions derived from the ongoing developmental process. For the group discussions used here, vocational school teams had also answered a questionnaire dealing with their own language sensitivity, the relevance of specific language aspects in their QM concepts and further demands of (scientific) support in this field. Data was collected via Workshop protocols and groups discussions/interviews transcripts. Collected data has been analyzed using qualitative content analysis (cf. Mayring, 2014).

4. FIRST RESULTS OF THE PROJECT QBI

In this paper, we are able to demonstrate the first striking results of the pre-study as well as highlight further fields of action/analysis that will be examined in the second project phase. Results are categorized following thematical codes of the qualitative content analysis.

PERCEPTION OF RELEVANCE OF LANGUAGE PROMOTION IN VOCATIONAL ORIENTATION BY PARTICIPATING TEACHERS

The initial situation found within the vocational schools illustrates the need for action as shown by one major fact: there clearly exists a perception on the professional side (teachers) that language competence is highly relevant and necessary for any student's vocational orientation and development of their own strengths in terms of being prepared for both the job mar-

ket and the individual's personal growth in order to live one's life successfully and fulfilling as well as participate in society (see e.g. Siemon, Kimmelmann, & Ziegler, 2016; Sogl et al., 2013). Nevertheless, following the reactions on thematical workshops and outcomes from first developmental meetings, the participating vocational schools are still situated on the level where they perceive the importance of content-related language promotion and where they are willing to engage in this concept – although it is not clear to which degree this willingness is indeed existent. But either professionals are not sufficiently skilled in applying first approaches within this field (1), the few existing strategies are unknown to them (2), or the overall pool of language-promoting strategies is still scarce (design products such as integrated language learning material for subject lessons is hardly available for the particular target group of learners) (3). With respect to the latter aspect, so far, there are furthermore no empirical results testing and verifying the success or lack of success of such material. Regarding argument (1), this is often due to a lack of time and resources.

Results of our written questionnaires as preparation method for our developmental meetings with the vocational schools in May, 2017, yield a unified picture of the role the planned linguistically-sensitive design plays within the qualification module. The role was designated to be "central", as the "linguistic understanding is decisive for the students' professional success" (VS4, WQ_1, 04.2017[8]), was referred to as "condition sine qua

8 All of the data collected by carrying out qualitative interviews, written questionnaires, and utilizing group discussions within workshops that is utilized within this study contains English translations from the original German citations.

non" by one of the teachers of another vocational school (VS2, WQ_1, 04.2017), or as "didactic precondition" by VS1 (VS1, WQ_1, 04.2017).

The general awareness of language promotion's relevance within vocational lessons can also be documented by the following example by one of the teachers participating in the project: "Language barriers are definitely existent within specialized teaching, and language promotion has to take place – but how do we do this?" (VS3, WP[9], 01.2017). According to the statement of another vocational school, the integration of language promotion and the topic per se within specialized classes is generally assessed as "important", but the awareness is not sufficiently present among pedagogic professionals (VS4, WP, 01.2017). Simultaneously, these assessments highlight a prevalent uncertainty of how to deal with the described problems as well as to realize German language promotion within the context of vocational training preparation. Moreover, there is concensus among the participating teachers about the general perception that the majority of general problems and conflicts arising in class have their origin in students' language problems. This observation implies a great need for action in this field linked to the targets of vocational training. If language barriers represent a consequence of a multitude of problems in vocational classes, it becomes apparent where practice and theory have to start. By integrating relevant contents of professional learning (short-term goal) as preparation for prospective job chances (long-term goal), students with the need to catch up their language competences will achieve better results (motivation as a driving factor).

9 Workshop protocol (WP), 01.2017.

It is clear from first results of qualitative interviews, standardized questionnaires and group discussions with teachers that there are certain similarities and characteristics of students' vocational literacy, that general difficulties must be differentiated from language problems and that the target group that is being analyzed here holds specific features with respect to the promotion of the German language. Hence, these aspects are to be taken into account when developing strategies. A closer look is taken at them in the following.

DEFINING VOCATIONAL LITERACY FROM THE TEACHERS' PERSPECTIVE

Following the statements made by teachers within group discussions, written questionnaires and qualitative interviews, data demonstrates language playing a central role, since communication – written and oral – is important in any situation within training preparation. Even more, linguistic understanding on the adolescent side is essential for their professional success as theoretical and empirial analyses have shown (Efing, 2014). Following f. ex. Efing (2014) and Siemon et al. (2016), in a multitude of cases, failing to find a training position is not caused by a lack of professional skills, but instead of linguistic roots. Company trainers estimate the communicative proportion in our daily work at 30 to 40 percent of our working hours. For second language learners within vocational training preparation, this elucidates all the more the need to attain a mother language competence level in order to be prepared to successfully start and pass a vocational training.

STUDENTS' LANGUAGE DIFFICULTIES FROM TEACHERS' PERSPECTIVE

Among the target group, a lack of fundamental linguistic competences can be observed. Teacher respondents point to an unclear, bad-comprehensible pronunciation that the adolescents dispose of. However, especially with regard to the students' everyday professional life in the companies in which they are doing their internship – as part of their vocational training preparation year – or with respect to future training organizations and companies, they should also be provided with strategies for a counterpart they cannot understand in oral communication. For this, see the following teacher statement (VS1, INTW_1, 2017):

EXAMPLE 1

"The master will not speak so clearly later on. That is just a fact. 'Do it.' What does 'do it' mean, then?' How can I [as a student] validate what I just had in mind? Yes, this would be an additional source of error. So, the source of error does not necessarily be mine as a learner, but instead, and that means to differentiate, I have to, at least a little bit, be able to deal with the fact, as future employee of a firm, that also my counterpart might potentially speak in a linguistically unclear way, and I must have strategies." [Teacher VS1, INTW_1, 2017]

The example above highlights the necessity to teach and learn grammatical operators representing strategies to react on a counterpart's unclear pronunciation by the ability to classify what has been said apart from asking specific questions to ensure the

oral content. Operators can here comprise the areas of reproduction (skills), understand/recognize and apply/use concrete knowledge. What is evident is the fact that we face two different perspectives in communication, as students do not only struggle with their own incapability of pronunciating clearly, but have to obtain strategies when it comes to the imprecise pronunciation of their communication partner which represents a further level of complexity.

In general, the data points out students having only rudimentary linguistic knowledge in the fields of grammar, orthography, semantics, and syntax. This leads to an essential part of vocational education and training: no matter which subject area of training, each one has their own specific terminology. A lack of this technical vocabulary will sooner or later cause problems for the students. Poor vocabulary can be found with respect to a large number of the students, as underlined by all of the participating vocational schools. With respect to vocabulary, there are certain approaches to teach subject lessons in a linguistically sensitive way and reasons for which these strategies make sense, as emphasized by the following example of a teacher in the vocational field of technics and mechanics:

EXAMPLE 2

"Language sensitivity... and then I just had the idea, wait a moment, even regarding a bicycle, you have so much terminology or as well vocabulary whose language level is a little higher, that might irritate many of these students. We also talked about that, and thought about how to, well, absorb this. One of my approaches is now to make some type of dictionary or list and to subdivide these again into what of this is purely terminology and

what is other language, that the students might not be so familiar with, [...] and then during our conversation something showed up, man, maybe we could try to do something with index cards that the students themselves write on, keep for themselves, each one for themselves, and I have precisely observed many small singular situations within lessons and thought about things I could use for this, how can it be interesting, and then later on a whole concept, first the lighting system of a bicycle, and after having experienced this, [...] I want to transfer it to a vehicle, to vehicle engineering as well. But I believe, it is just important within vocational training preparation, that you start at a low level and by making relatively small steps, and maybe, because these are young people that generally do not dispose of a driving license or so, that you are a little closer to the real world with this project then, with this learning arena."
[Teacher VS3, T1[10], 03.2017]

The experience of this teacher does not only explain that professional semantics are largely unknown to students within vocational training preparation, but he also underlines the fact that in every field of profession or even in people's everyday life vocabulary, there is technical knowhow and specific syntactic units, sentence structures arising from this leading to a certain structuring of the vocabulary that needs to be understood to see the general context. If we go one step further, education includes applying idioms, phrases etc. (i.e. figurative language) all of them holding a high degree of complexity especially for second language learners, however also for native speakers with

10 Transcript_1 (T1), developmental meeting with VS3, 03.2017.

language problems (for practical strategies related to these phenomena as f.ex. methodological tools cf. Leisen (2010); Ohm, Kuhn, and Funk (2007); Günther, Laxczkowiak, Niederhaus, and Wittwer (2013)). Among the specific linguistic difficulties of students, these include, above all, comprehensive reading or, as the next level, reproducing the content that has been read or heard in their own words. "An extreme heterogeneous language level is shown in particular when it comes to deducing a text and understanding a task." (VS1, WQ_1[11], 04.2017). This is once more related to students being trained to adjust the content of a specific text or task to the portfolio of operators. This selection of grammatical operators must continuously be available in a cognitive way. As many pedagogic professionals additionally see themselves as disciplinary educators – apart from being teachers, one of the vocational colleges participating in the project draws the attention to a further type of language use they observe within training preparation classes: there is a "peer group language containing sexually offensive connotations" (VS2, WQ_1, 04.2017). This type of language or linguistic register is to be taken into account and counteracted by teachers, also from a legal point of view.

Besides a lack of fundamental linguistic competences, according to the teachers' assessments, textualization is a major obstacle. This particularly comprises the documentation of results in writing. Usually, they are hardly taken into account orally. Additionally, copying content such as from panel paintings causes problems, since students are not able to copy written words correctly or completely.

11 WQ_1 stands for Written Questionnaire from 04.2017.

Although school regulations, i.e. curricula, require written exminations, there is a multitude of special oral communication situations in the professional context that students need to have an understanding of and be able to apply adequately: F. ex., students apparently have issues with the formulation and expressions of their concerns. This is illustrated by an example given by one of the teachers from VS4:

EXAMPLE 3

"Some of them are already able to do that, welcome or greet somebody, to look somebody in the eye, but here it starts, to formulate a concern or request is a thing that many are not able to do and [...] break off their internship, because they are too shy to call and say, I am sick, or because they do not know how to do this or what to say."
[Teacher VS4, T1[12], 05.2017]

Similar observations can be pointed out when it comes to students' ability to declare objections if they do not agree with something. Besides, receiving and responding to criticism are communicative actions which seem to be difficult according to teachers' opinions. A great demand for action is emphasized with respect to the area of job interviews as well as telephone calls, which are, on the one hand, an essential part of the adolescents' vocational orientation and training preparation, and on the other hand represent or contain strong linguistic barriers.

12 Transcript_1 (T1), developmental meeting with VS4, 05.2017.

CHARACTERISTICS OF THE TARGET GROUP WITH RESPECT TO LANGUAGE PROMOTION

Data results emphasize an extreme degree of heterogeinity within the classes of the vocational training preparation. This target group comprises students with very different qualification levels and competences. Existing linguistic competences influence and interact with their varying cognitive, social and personal competences. Another part of these classes also becoming relevant for vocational education and training in Germany, but as well in Europe in general, is represented by former refugee students.

As mentioned above, the students' linguistic problems intertwine with further challenges. For example, there is a high complexity in terms of language promotion since factors such as students' discontinuity and drop-outs from school belong to the teachers' daily schedule. Reactions by the professionals within the workshop and in the interviews demonstrate the significance of two factors that teaching and the subject lessons should strive for in order to achieve the goals: it is motivation (1) and self-confidence (2) that have to be imparted and taught. Experiences points out the decisive power of these two factors with respect to language promotion. These can particularly be achieved by teachers giving supportive and helpful feedback to students with respect to errors. Another method within lessons that has proven to be successful in terms of delivering information to students with linguistic problems is to simplify all sorts of texts (factual texts, literal texts etc.) (cf. Leisen (2010)). Nevertheless, this strategy must be reflected upon critically, as any vocational school is subject to an auditing duty, more precisely

as the retained goal is the successful school-leaving certification. The latter issue is also supported by one of the teachers from VS4 (see Example 4).

STRATEGIES OF LANGUAGE PROMOTION AND ITS IMPLEMENTATION

Overall, the project will pursue the vision of a continuous German language promotion in the subjects. The above-described and proven language awareness and language sensitizing must be operationalized on the long-term by teachers for learners. Due to our observations and according to teacher statements within the first qualitative interviews and written surveys between January and May, 2017, it is clear to see that these processes shall be carefully organized with respect to the specific local conditions of each vocational school. This includes considering the individual structures of the student group and in particular the school's thematical focus. While in terms of both an initial diagnosis of linguistic competences and with regard to testing the impact of the developed material on students and the professionals, different approaches must be considered due to the varying requirements for and qualifications of the students. This conclusive requirement is also summarized by a teacher of one of the vocational schools (interview with VS 1 from 15.05.2017[13]):

> What you can see is that we are currently working with five learning settings. These learning settings are therefore such thematic concepts which are again subdivided into single

13 VS1, Interview No. 1, 15.05.2017 (INTW_1, 2017).

> learning situations, since we said after thorough reflection, we need to have sequencing, mainly in the daily learning situations, so that there will not come up any weariness within a certain subject matter, we also have to switch between several learning settings, because these satisfy diverse needs of the learners, satisfy different levels of orientation, of vocational orientation.

One concrete strategy within this project is to develop self-learning material and linguistically sensitive teaching material for the teachers. The concept, though, has to fit for both daily learning situations and for 45 minute lessons constituting the final products. A special focus will be on tests and test preparation material. As described above, VS1 has been creating learning settings connected to profession-relevant situations of actions that will be designed in a internally differentiating way, both linguistically and technically. VS4 f. ex. has been developing self-learning material that is connected to daily practical phases and provides the students with information, advice, and practical preparation essential for their internships. Within two-hour lessons serving as vocational preparation time, students learn communicative contents with the aim of first trying them in the real professional world on the same day and second, have the opportunity to reflect these educational contents on the next day during the next two-hour lessons. The concept is carried out in a linguistically sensitive way. In the following, the method is exemplarily described by a teacher of VS4:

EXAMPLE 4

"The aspect of scenarios already includes, in my opinion, a progression, because this is already a lot more difficult, [...] this deals with, on the one hand, making something a subject of discussion on the answering machine [...], that is, let me put it like this, a lower level in terms of progression, because in this case you don't have an interlocutor who can ask questions in return or answer to you. Then, we have the whole thing as a conversation [...] in different situations, and then we have it, because this is also a difficult level, when they have to write this down, they have to write down the problem that has been evolved before, in the form of an e-mail or in the form of a letter, or in the form of an SMS and so on and transmit the content this way. And these ten scenarios that we have developed there also serve as a basis for the final exam we want to do. Furthermore, it is stated as well that we want to do a practical test, and we have decided, we are not there yet, the way they precisely want to carry it out, but we can for example take the ten scenarios as a basis and say, okay, you are able to do one of these, choose one, and then it is for example the problem of calling in sick, and then he or she shall simulate such a telephone call with an interlocutor of us. A second part of the exam would then be to put everything down in writing as well, a written part, and then we would have a basis for that. We could go ahead with it throughout the year, and then we would have a basic idea for it." [Teacher VS4, T1[14], 05.2017]

14 Transcript_1 (T1), developmental meeting with VS4, 05.2017.

Example 4 furthermore emphasizes the necessity to adjust the concepts in such a way that they fit the regulatory demands of the specific school. Thus, at the end of the vocational training preparation, and in this particular context at the end of the project, the training qualification modules shall lead to the achievement of a certificate through completing a test or an exam.

The overall essential method is to create learning situations that vary linguistically. This is agreed upon by the participating teachers and they all are aware of it. As emphasized by Kimmelmann (2013, p. 196), "language learning takes place most easily if one has sufficient opportunity to apply the language". Furthermore, the conditions to achieve this are optimal within the subject lessons, since the relation between vocational subjects and one's communicative and linguistic competences is given (cf. Kimmelmann, 2013).

It seems that there is a multitude of phenomena from both the students' and the teachers' perspective and moreover, that there exists a discrepancy between these two different perspectives which leads to a challenging and exciting continuation of the analysis in the months to come. The phenomena on the students' side remain to be analyzed through adequate measurement techniques. On the teachers' side, the data collected already indicate diverse perceptions, experiences that show a trend towards uncertainty in terms of the methods and patterns of behavior when dealing with language problems in subject lessons, but on the other hand are willing to reflect and change their way of teaching. In order to realize this, educational structures and the vocational school environment will be required to offer teachers adequate conditions (e.g. via time, resources, regulations) in order to achieve progress and enable a content-re-

lated language learning. Moreoveer, the present findings indicate the complexity of the subject with respect to making this educational development comprehensible and concrete for the vocational schools.

5. CONCLUSION AND OUTLOOK

As a conclusion, the subsequent steps within the research cycle require to put the two phases of development and implementation into concrete terms. It is necessary, though, to choose and carry out evaluative diagnostic language tests before and after the implementation of the design products. The third step will afterwards involve the documentation of the development process as well as the developed and established design products and materials.

The previous research and investigations within the developmental process in the form of a symposium, workshops, written questionnaires and developmental group interviews – all of them involving the participating teachers – have demonstrated so far that we deal with a challenging process that will need long-term comprehensive and wide-spread monitoring and persistence. Moreover, already at this point in time, specific questions and issues emerge leading to further research and analysis in the following course of the projects. Among the challenges, there is the need and relevance of comparing the students' versus the teachers' perspective. As it has been underlined before, first results indicate a discrepancy between the two points of view requiring a thorough examination and attention when it comes to making statements about educa-

tional and training measures and creating linguistically sensitive study materials signifying the link between student and teacher. Hence, this leads to challenges connected with the concept of language promotion and how this can be applied successfully and in the long-term. As there are two different groups of players within the project, i.e. professionals from the practice and scientists from the theoretical field, one has to be aware of the outcomes and diverse goals that the players might want to strive for. In the end, one has to face practical and scientific prototypes. With respect to the project partners, the question will arise whether and to which degree a deeper instruction or guidance of the vocational schools will have to take place. Or whether the design will be structured in such a way that on the university side, the remaining part of the developmental phase as well as the transition from the latter one to the implementation phase up to the phase of securing and interpreting results, will play a mentoring or accompanying role.

Regarding the observations during the implementation phase and dealing with the results that come out from it, it will be a challenging task to measure the success of the developed products and strategies. Therefore, further steps in the project will require adequates measurement techniques being realized within the vocational schools presupposing the participation of all persons involved – teachers and likewise students. This leaves the questions and necessity of the teachers building multiprofessional teams to work and coordinate with each other with regard to the newly-developed products and materials.

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Simulation-Based Training and Learning in the Social and Health Care Programs: A Literature Review

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Abstract: A developmental project conducted 2017–2019 focuses on technologically based simulation in the Danish social and health care programs. The aim of the project is to strengthen the quality and effect of simulation-based teaching in the social and health care programs and to establish pedagogical and technical standards for this kind of teaching across the social and health care colleges in the region. In relation to the developmental project a research project focuses on the following research question: How should simulation-based teaching be organised in order to benefit the students' learning? The paper concerns the results of the first part of the research project, which is a review of research-based results about simulation-based teaching the purpose being to identify assumptions concerning the impact of simulation-based teaching on students' learning.

Keywords: simulation-based training, learning, health care

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1. INTRODUCTION

In this article, the intention is to formulate assumptions for a research project about simulation-based training and learning in the Danish social- and health care programs. These programs are part of the vocational education- and training system and organised according to the dual principle. The program for social and health care helper takes 2.2 years to complete, the program for social and healthcare assistant 4.7 years to complete. The research project is part of a developmental project about simulation-based training and learning that runs at five social and health care colleges in the period April 2017–December 2019. The colleges will develop and try out simulation-based courses. The aim of the research project is to study how the simulation-based courses influence the students' learning outcome. Learning outcome includes the students' motivation for learning and their ability to comprehend, reflect on, and apply the content of the courses in practice. The first part of the research project is a review of results from research on simulation-based training and learning. Based on this review, the aim is to formulate assumptions about the interrelation between on the one hand ways of organizing simulation-based courses and on the other hand the students' learning outcome. The review includes results from research projects on simulation-based training and or learning, which have primarily been accomplished within the last five years, i.e. in the period 2012–2017. The literature includes texts in Danish, Norwegian, Swedish, and English.

2. RESULTS

Simulation-based training and learning is widely used not least within the health sector (Alinier & Platt, 2013), during the last 25 years' simulation-based training has secured a foothold within the Danish health education programs (Helleshøj et al., 2015). Simulations can be 'non tech' e.g. in roleplays showing a situation from practice, or simulations can be based on technology, 'low tech' or 'high tech' e.g. when using manikins (Rooney et al., 2015).

Simulation-based training is used for several reasons. Compared to class-room teaching, simulation-based training – simulating real life and real practices – motivates the students for learning (Dennis et al, 2016). Compared to learning in real practice, simulation provides more time for practicing, it allows for mistakes; it contracts events in practice, enabling e.g. the person to enact and reflect on stages in a course of a disease in a short time; it provides opportunities for reflection in action and reflection on action. In other words, simulation-based training provides opportunities for being students instead of employees (Nortvig & Eriksen, 2013; Kydland & Høye, 2015). Simulation-based training strengthens the learners' confidence and competences in relation to clinical care (Hudgins, 2017), and it is assumed to lead to more resilient learning (Akroyd et al., 2016).

However, the benefits and outcomes of simulation-based training depends on various factors in relation to securing that the simulation develops knowledge that is relevant in real practice. Experiences from simulation-based training show that this kind of training should be based on a thorough design. The design includes three phases:

1. the *pre-briefing* phase, where the learners are informed about the purpose of the simulation including the expectations to the learners
2. the *scenario* in which the learners perform in simulated real situations and or accomplish simulated real tasks
3. the *debriefing* phase where the learners reflect on their experiences in the scenario in relation to the learning outcome targets of the current course or class (Helleshøj et al. 2015).

Research on practice-based teaching and transfer of learning shows that among other things the pre-briefing and the debriefing phases should ensure that the students understand the interrelations between the three phases (Aarkrog, 2016).

EFFECTS OF SIMULATION-BASED TRAINING

The effects of simulation-based training concern either the learners' learning process and learning outcome or the practice that the simulation deals with, e.g. on the patients' safety or on improved clinical practice. Only the first kind of effects is relevant in this study.

Within the health sector, the effects of simulation based training are often measured in relation to the cost and benefits of this training and in relation to quantitative benefits such as time saving, reduction in errors, etc. Within the health sector, a focus on qualitative measures may include improvement of patient safety, quality of care and employee satisfaction (Bukhari et al., 2017). In this research project about students' learning outcome mainly qualitative measures assess the students' learn-

ing outcome, however including quantitative measures such as dropout rate and grades.

THE SIGNIFICANCE OF THE SETTING OF THE SIMULATION

Traditionally simulation has been conducted outside the workplaces, in schools, or in simulation centres. This off-site simulation can take place in special rooms in the workplace and is called in-house training. During the last decade, this off-site simulation has been followed by in-situ simulations in real working environment, e.g. in connection with practical training in hospitals (Aase et al., 2016). The in-situ simulations take place, where people work. In relation to transfer of learning, one could expect the in-situ simulations to have greater impact on learning than the off-site simulations, partly because they take place in an authentic environment, partly because the learning and the application of learning take place in the same setting. The in-situ simulations can be announced (the staff has been informed about the simulation before it takes place) or unannounced (the staff has not been informed about the simulation in advance).

An overview of studies, the aim being to determine the significance of the setting, included a comparison of the four types of simulations: off-site simulation (outside the workplace), in house simulation, in-situ simulations announced, and in situ simulations unannounced (Sørensen et al., 2017). The results of the studies comparing off-site simulations and announced in-situ simulations show that even though the in-situ simulations are reported to be more authentic by the participants there

is no difference between the two types of simulations, concerning the participants' learning outcome. The only difference concerns organisational learning, by which is meant organisational or practical changes e.g. changes in equipment, guidelines, or the physical clinical environment (ibid., p. 4). The authors conclude that the physical setting has no influence on individuals' learning outcome neither on teams' learning outcome. Research is needed comparing the announced and unannounced in situ simulations. Results from the -until now – scarce research show that some participants in unannounced simulations experience these as intimidating and unpleasant (ibid, p. 8). I relation to the research project the simulations will take place at the social and health care colleges, i.e. off-site the workplaces and they will be announced. However, the research project should include the issue of 'the setting' in relation to studying reasons for the students' motivation for learning or lack of motivation and likewise the students' learning outcome. Though not including empirical data about the in-situ and non-announced simulations, the research project will investigate students' and teachers' perceptions of the significance of the setting of the off-site and announced simulations.

PRE-BRIEFING

The pre-briefing phase has not been studied as much as the debriefing phase. Pre-briefing can include information about the simulation setting and the manikins (if the simulation is based on manikins) or an introduction to the case that should be used in the scenario. With the purpose of lining up the essentials of the pre-briefing phase in relation to simulation-based training

of nurses, Chmil argues that simulations should reflect reality. Consequently, the learner should, just like a learner in a real clinical setting, review the patient's case and make a plan for the treatment or care of the patient which should be discussed with the instructor. This should be included in the pre-briefing enabling the learner to identify their expected outcome of the simulation, the identification of outcome being the most important part of the pre-briefing activities. (Chmil, 2016).

A study of simulation within an education and training program for police officers shows that learning through simulation requires that the students are not only introduced to the learning outcome targets and the case in the scenario, but also to the particularities of learning in simulation, simulation being characterized as a hybrid situation. The students play a role in the simulation while being at the same time students who should be assessed in accordance with the learning outcome targets of the program. (Sjöberg et al, 2015).

THE SCENARIO

The central issue in relation to the scenario is fidelity, i.e. realism. The scenario should reflect real tasks or real situations. Three kinds of fidelity have been distinguished: *physical fidelity*, which refers to how realistic the physical context is compared to real life setting e.g. in hospitals and include factors such as the environment, the persons in the scenario, and the equipment. *Conceptual fidelity* means how well the various elements in the scenario are related to each other making the case seem realistic and meaningful to the participants. Finally, *psychological fidelity* is about how realistically the simulation psychologically mimics

real environments, and include factors such as the conversations, time pressure, distractions etc. (Lioce et al., 2015).

However, what is the optimal balance between realism and learning opportunities in simulation-based training, or between fidelity and disruption of fidelity? In an Australian study, based on observations of ten simulations in an Australian Bachelor of Nursing degree, it was concluded that not only fidelity but also disruption of fidelity provides opportunities for learning and that the simulation offers opportunities for developing agile professional, i.e. professionals who can take on unfamiliar roles (Rooney et al., 2015).

DEBRIEFING

In a Norwegian study focusing on simulation-based inter-professional team training including 262 employees, who were organized into 44 inter-professional teams of nurses and medical students, the results showed that the simulation-based training in teams improved the students' vigilance and consequently the patients' safety. Furthermore, the study showed that video-assisted oral debriefings improved the participants' awareness of how they behave and interact in teams, the debriefing providing an opportunity to reflect on mistakes. In the debriefings, the students had an opportunity to think aloud, developing clinical reasoning skills and sharing knowledge to obtain a mutual perception of the patient's situation. Thus, the study shows that inter-professional simulation-based training makes it important to think aloud, and that speaking up has positive influence on the patient's safety (Reime et al., 2016).

Another Norwegian study, based on interviews with 10

nurses, points to four aspects of the debriefing phase that are important for the nurses' learning: the debriefing should reflect what had actually happened in the scenario, be kept in a positive and direct form, meaning that the critiques should not be targeted the individual but the team. The reason for the first aspect is that it is frustrating for the participants, when the challenges in the scenario phase are not treated directly. Secondly, the person, who conducts the debriefing, should have solid knowledge about the field and be able to conduct the debriefing in a constructive tone, including taking a neutral position. Thirdly, the debriefing phase should include strengthening mutual knowledge about each other's roles in the inter-professional teams and strengthen cooperation and safety. Fourthly, debriefing should provide an opportunity for learning from each other through reflection on practice and discussion of changes in practice. Thus, the focus is on discussing interpersonal skills e.g. roles and interaction rather than the technical issues (Flatgård & Berg, 2016).

An American study based on two focus group interviews (on with junior learners and one with senior learners) in relation to a simulated-based Test of Integrated Professional Skills (TIPS) within the health care sector showed the importance of providing feedback that benefits the learners' learning process instead of being just helpful for the teacher in a summative evaluation. Furthermore, the study showed that it is important that the scenario is realistic and that the instructions to the situation in the scenario are clear, so that the participants do not have to spend time on figuring out the technical parts. In opposition to the Norwegian study above, the learners were more concerned about receiving feedback on the technical and

cognitive skills that on their interpersonal skills. Feedback on practical skills was particularly important for the junior students (Winkel et al., 2014).

Dealing with and critically reflecting on the learners' performance in the scenario, debriefing can be vulnerable to the participants, and literature points to various ways of dealing with the delicacy of the debriefing processes. In an American study, in which the simulation concerns 'break bad news' (BBN), collaborative reflective training (CRT) was tried out as a means of facilitating open dialogue and self-reflection. The method is used within therapy and is adapted to medical simulations about BBN. The debriefing includes three phases in which a reflecting team observes the scenario and afterwards reflect on the trainees' performances in the scenario while the trainees are listening. In the second phase, the trainees and the simulated patients will reflect on and discuss the reflections of the reflecting team and in the third phase all participants will summarize the learning points (Kim et al., 2016). In a commentary to this article the importance is emphasized of supplementing CRT with a preparation of the simulation in which the learners highlight the goals of the simulation including thinking about pre-existing knowledge, skills and understandings. In other words the commentary highlights the importance of a pre-briefing phase (DeCarporale-Ryan et al., 2016).

Another way of dealing with vulnerability is to establish 'psychological safety'. Psychological safety has proved to be important in relation to the debriefing phase. Psychological safety is defined as *the degree to which people view the environment as conducive to interpersonally risky behaviors like speaking up or asking for help* (Edmundson et al., 2016, p. 66). A study of debrief-

ing in relation to in situ simulation in ad hoc teams of doctors and nurses shows that the method TeamGAINS, can support the simulator instructors establishment of psychological safety. TeamGAINS provides a systematic for conducting the debriefing and includes six phases:

1 reaction (letting out feelings from the scenario),
2 technical skills (thorough comprehension of the technical skills included in the scenario),
3 transfer (transformation of technical skills from the scenario to practice),
4 non-technical skills (thorough comprehension of the interrelation between the team's performance in the scenario, technical and non-technical skills and patient safety),
5 summary (sum up the learning from the simulation), and
6 repetition (training in order to improve individual technical skills and team performance).

Furthermore, the instructor can choose between three positions in relation to the phases: *guided team self-correction* (i.e. the team analyses negative and positive events in the scenario without intervention from the instructor); *advocacy-inquiry* (instructor-guided feedback and reflection in relation to inadequate performance in the scenario); *systemic constructivism* (influence of the team's interaction on the individual behaviour) (Slot, 2016).

REGULATION AND DIRECTION OF LEARNING

A central issue concerning the instructor is how much he or she directs and supports the learners in simulation-based training. A Canadian study has compared directed self-regulated learning (DSRL) with instructor-regulated learning (IRL) in simulation-based training of medical residents in postgraduate year 1. The study showed that both DSRL and IRL led to improved performance immediately after the simulation. However, after three months the retention of learning i.e. long-term learning transfer of the IRL group declined, whereas the DSRL group's performance maintained its level (Brydges, R. et al., 2012). A later study investigated the importance of instructor supervision including supports or scaffolds for outcomes in self-regulated learning (Brydges et al., 2015). The researchers conclude that an instructor may be the best support for self-regulated learning in some simulations while in other simulations environmental support e.g. a video or a goal list may be more appropriate, emphasising that designed supports are important for learning (ibid, p. 375).

In a literature review accomplished by Dutch researchers, it was concluded that it is possible to strengthen the authenticity as well as the self-directed and self-regulated learning. To strengthen the authenticity, the study recommends that the students should work on whole tasks, that the tasks should be adapted to the students' perception of authentic tasks, that the tasks should include ill-defined problems as these will require authentic cognitive processes and that a realistic physical context should be created. Concerning self-directed learning the students should have the opportunity for choosing which tasks to

perform and ways of performing, and the teacher or the students should formulate progress goals. Concerning the self-regulated learning, which is related to executing the tasks, the teacher can enhance self-regulation by modelling desired behaviour, verbalizing e.g. process steps, giving immediate feedback and feedback after the simulation i.e. in the debriefing phase, coaching, scaffolding, and fading down guidance as part of gradually increasing the students' responsibility. Students can enhance self-regulation by analysing observations and mistakes, self-verbalise actions and regulatory strategies, and self-monitor performance and progress goals (Khaled et al., 2014). Apart from highlighting the importance of the pre-briefing and debriefing phases these suggestions raise the issue about whether the scenario should also include elements from the debriefing phase and consequently about the borders between the scenario and the debriefing phase.

In a Dutch study of competences in relation to simulation-based training among teachers within the vocational programs of Engineering and Technology, Care and Welfare, and Agriculture, it was concluded that the teachers are not sufficiently qualified to help the students develop the metacognitive skills that the students need for developing self-regulated and self-directed learning. Consequently, the teachers need to develop their reflective thinking about their own vocational teacher training and professional practice in order to be able to support the students (Jossberger et al., 2015).

A Swedish study questions the possibilities for self-regulated learning in a VET-program about simulation in automation/electrical engineering. The research questions concerned what kind of learning strategies students develop in virtual simu-

lations. The study included video recordings of four students' learning strategies and interviews with the students based on these recordings, the focus being on how the students handle the virtual simulation computer program, and how they reason and argue when accomplishing the tasks. Apart from problems in perceiving the virtual simulation as real, only one of the students was able to accomplish the tasks by just following the program. The other three students needed support and directions from the teacher in order to benefit from the program. The student did not benefit from the virtual simulation, because they had not got the practical experience before the simulation, which among other things could have provided experiences with the relevant computer programs. Consequently, the success of virtual simulation depends on the students' experiences from real practices. The less experience from real practice, the less self-regulation and the more the teacher needs to support the students' learning. The study points to the challenges in relation to using IKT in simulations (Berglund, 2004). Likewise, other studies show that the instructor plays a crucial role in securing the students learning outcome e.g. (Kolbe et al., 2013; Lioce et al., 2015).

3. SUMMING UP

The review points to a number of issues, which are important for enhancing the learners' motivation for learning and their learning outcome of simulation-based courses. The review shows that there is relatively little research concerning the *pre-briefing* phase even though this phase is depicted as important for the students' learning. Based on results from research showing that the pre-briefing phase should include setting goals

and align the students' expectations, the pre-briefing phase should be further investigated in the project. Research points to the importance of preparing the students for the learning opportunities and conditions related to simulation-based training. Consequently, the pre-briefing should not only introduce the students to the learning outcome targets and the case in the scenario, but also to the genre or characteristics of simulation-based training, including the purpose of the scenario in relation to the learning outcome targets.

The assumption is: the better the instructor can make the students understand the interrelation of the three phases of simulation-based training (pre-briefing, scenario and debriefing) in relation to the learning outcome, the better the students' learning outcome will be.

Concerning the *scenario,* the review shows that the central issue is the realism or fidelity of the scenario, including the distinction between in-situ and offsite simulations and between announced and unannounced simulations. The issue to be investigated in the project is: how realistic should the scenario be in order to provide optimal conditions for learning? When the scenario is realistic (in the students' opinions), the students will be motivated for learning, because they perceive the scenario to be relevant for their future professional practice. However, a realistic scenario can obstruct the students' opportunities for learning, because it is difficult to take a distant reflective position, when the scenario does not remind the students about their learning process.

The assumption is that a high fidelity of the scenario motivates the students while being less beneficial for the students' learning outcome than a low fidelity of the scenario.

Research about the *debriefing* phase shows that this is the phase for learning. However, the phase is delicate in the sense that directly or indirectly the students receive feedback on their performance in the scenario. Research shows that the instructor or teacher plays a central role in establishing a constructive climate for reflecting on the scenario and for giving feedback. Results from research suggest that the instructor should establish a systematic for the activities in the debriefing, as this strengthens psychological safety. This requires that the instructor has knowledge about the students' interactions, successes and mistakes in the scenario, and that he or she is able to adjust the procedure for reflection as well as for feedback to the current events in the scenario.

The assumption is that the more the instructor or teacher knows about the events in the scenario the more he/she will be able to establish psychological safety in the debriefing phase.

Finally, research deals with the regulation of the students' learning. How should the teacher or instructor regulate the students' activities and learning processes in simulation-based training? Research shows that the students need support from the teacher, not only in the pre-briefing and debriefing phases but in some cases also in the scenario. Research also shows that the retention of the students' learning outcome is better, if they work self-directed. In the research project it should be investigated what is the optimal balance between teacher regulated training and student-regulated training. The degree of teacher-regulation depends on the students' cognitive skills and practical experience. The assumption is that at the beginning of participating in the social and health care program the students will need relatively more directions and regulations from the teacher than later on in the program.

In the project the four assumptions should be qualified by observing simulation-based training and interviewing the students about their learning process and learning outcome from the training.

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Section IV:

Gender, social competence and inclusion

Educational Pathways and Gender Segregation: The Case of Upper Secondary VET

Francesca Salvà-Mut*, Antoni Cerdà-Navarro & Ana M. Calvo-Sastre

Abstract: Gender segregation in the labour market is very widespread in Europe where only 16% of workers are working in mixed professions understood as those in which the percentage of male and female workers ranges between 40% and 60% (European Commission, 2014).

The choice of field of study is one of the main causes of gender segregation which, in turn, is closely related to gender stereotypes (Birr, 2014; European Commission, 2009; Smyth & Steinmetz, 2008). Mainly, research into this subject has been developed in the field of participation of men and women in science and technology, focusing on the analysis of educational and labour market segregation (Meulders, Plasman, Rigo & D'Orchai, 2010). In contrast, research into the relations between gender and non-university vocational education is limited (Lamamra, Fassa & Chaponnière, 2014; Niemeyer & Colley, 2015). In this paper, we analyse: (a) professional family's segregation in upper secondary vocational education in Spain and (b) the

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reasons of professional family 's choice according to gender. Our paper is part of the project "Success and dropout pathways in vocational education and training in Spain" (ref. EDU2013-42854-R) funded by the Spanish Ministry of Economy and Competitiveness.

Keywords: gender segregation, field of study, VET, professional choice

1. INTRODUCTION

Occupational gender segregation (trend of men and women towards different professions) is very widespread in Europe, where only 16% people in work do so in mixed professions, considered as the ones in which the proportion of both men and women is between 40% and 60% (European Commission, 2014). The interest of this field of study lies especially in its influence on gender inequality, insofar as it shapes the opportunities of men and women in relation to employment and to income (Burchell, Hardy, Rubery & Smith, 2014). The relevance of the issue is such that it is included among the main areas of action of European policies in favour of equality (European Commission, 2015). Amongst the main causes of occupational gender segregation figures the choice of studies, which, in turn, is closely associated to gender-based stereotypes (Birr, 2014, European Commission, 2009, Smyth & Steinmetz, 2008). Research on this issue has mainly been conducted in the field of participation of men and women in science and technology, by analysing segregation in studies and in the labour market (Meulders, Plasman, Rigo & D'Orchai, 2010). However, research on this topic

and other aspects of the relationships between gender and vocational education and training courses (VET) is scarce (Lamamra, Fassa & Chaponnière, 2014; Niemeyer & Colley, 2015).

In this context, the present paper focuses on studying gender segregation in upper secondary VET in Spain, as well as the reasons for and influences behind the choice of course. More specifically, it is based on three aims: (a) analysing gender segregation in the professional families in upper secondary VET; (b) analysing students' reasons for choosing courses; (c) analysing the influence of guidance counsellors, teachers, relatives, and friends in the choice of course.

2. METHODS

The study was conducted using the data obtained from a questionnaire in a representative sample of students in Upper Secondary Vocational Education and Training (VET) in Mallorca (Balearic Islands, Spain). The questionnaire used is primarily based on the model of association between student context (family, parents, school, community), engagement, and results by Reschly & Christenson (2012), and on a review of different instruments for their measurement and operationalisation. The final version mainly includes the contributions of the Student Engagement Instrument (SEI), used in the project Check & Connect (Appleton, 2012); the Potential Dropout Assessment Kit (*Trousse d'évaluation des décrocheurs potentiels-TEDP*), used in Quebec (Janosz, Archambault; Lacroix Lévesquen, 2007); and a study on absenteeism in vocational secondary education in France (Lannegrand; Cosnefroy & Lecigne, 2012). The questionnaire is made up of four large blocks of questions: a) Socio-

demographics[15]; b) Academic background[16]; c) Engagement (affective, cognitive, behavioural, and academic)[17]; and d) Decision processes.

Validity and reliability tests were performed through the judgement of 16 experts. Secondly, the questionnaire was administered to a pilot sample of 172 vocational education and training students. Based on the results obtained in this stage and on the application of Cronbach's alpha, some of the initial questions were eliminated or rephrased. The questionnaire and the procedures for its administration and for the custody of the data obtained were approved by the Ethical Research Committee of the University of the Balearic Islands.

The universe of the survey included students who began the upper secondary VET courses in academic year 2015/2016 in the area of Mallorca (3204 students). The sample size achieved was 1157 students with a margin of error of ±2.3% considering p=q and a confidence interval of 95%. The type of sampling carried out was stratified and proportional by professional family (16 families in Mallorca). During the fieldwork, questionnaires were collected in 70 classes from 21 centres.

15 Gender; age; place of birth; year of arrival in Mallorca; whether they live with their parents or independently; whether they have children; employment situation; weekly working hours; whether their job is related to their training; level of education, employment situation, and birth of parents.

16 Level of education; admission pathway to VET; whether they have ever repeated a school year; whether they have ever been expelled from their centre; situation during the previous school year (whether they worked, whether they studied, what they studied).

17 These questions were answered with a Likert scale according to the degree of agreement and/or disagreement: P1. Relationship with teachers and centre (9 items); P2. Relationship with classmates (5 items); P3. Relationship with studies (5 items); P4. Extracurricular activities (2 items); P5. Behaviour in class (4 items); P6. Relationship with their family (13 items); P7. School activities (10 items); P8. Professional expectations (6 items).

Analysis of gender segregation in professional families is based on the criterion adopted by the European Union for the study of occupational and sectorial horizontal segregation, which considers mixed professions as ones in which there is between 40% and 60% men and women; feminised professions, ones in which there is over 60% women; and masculinised, ones that are taken by over 60% men (Burchell, Hardy, Rubery & Smith, 2014).

Analysis of students' decision processes was conducted using the four specific questions related to their choice of course, which are based on the contributions of Callan (2005). The first two focus on the reasons for choosing the course: the first one contains nine closed answer options[18] and one open answer (other reasons), for each of which the degree of importance must be indicated; the second asks them to indicate which of these reasons was the main one. The next two focus on influences in their decision-making**:** first, they were asked whether anyone had recommended taking the course and, if so, they had to answer a multiple choice question as to who had made that recommendation (guidance department, teachers, family, friends).

3. RESULTS

The results are presented in four sections: segregation by professional family; reasons for choice of course; single main reason for choosing the course; and influence in decision-making.

18 Answer options are: a) "Because I like it"; b) "Because I couldn't get into any other"; c) "Because there are job offers related to it"; d) "To improve my working conditions"; e) "Because some friends are doing it"; f) "Because the guidance counsellor recommended me it"; g) "Because my family wanted me to"; h) "Because I was required to by my company"; i) "Because I couldn't find a job".

3.1. PROFESSIONAL FAMILY SEGREGATION

Analysis of horizontal segregation by professional family reveals that only Administration & Management, and Hotel Industry & Tourism are mixed. Between the two of them they account for 26.2% of students. This means that approximately one in four people starting vocational education and training do so in mixed families, whereas the rest do so in either masculinised or feminised families. In the case of men, only 21.8% take courses in mixed families, whereas for women the percentage reaches 31.9%.

Table 1.
VET Students in Mallorca for academic year 2015/16
by gender and professional family

	% N in the column			% row		
	Men	**Women**	**Total**	**Men**	**Women**	**Total**
Health (SAN)	7.9%$_a$	33.8%$_b$	19.1%	23.6%	76.4%	100.0%
Administration & Management (ADG)	12.7%$_a$	22.8%$_b$	17.1%	42.5%	57.5%	100.0%
Computing & Communications (IFC)	17.2%$_a$	1.1%$_b$	10.2%	95.5%	4.5%	100.0%
Hotel Industry & Tourism (HOT)	9.1%$_a$	9.1%$_a$	9.1%	56.8%	43.2%	100.0%
Transport & Maintenance of Motor Vehicles (TMV)	12.3%$_a$	0.9%$_b$	7.4%	94.9%	5.1%	100.0%
Physical & Sporting Activities (AFD)	10.8%$_a$	2.8%$_b$	7.4%	83.3%	16.7%	100.0%
Electricity & Electronics (ELE)	11.9%$_a$	0.5%$_b$	7.0%	97.2%	2.8%	100.0%

Sociocultural & Community Services (SSC)	0.7%$_a$	13.5%$_b$	6.2%	6.7%	93.3%	100.0%
Trade & Marketing (COM)	2.3%$_a$	6.0%$_b$	3.9%	34.0%	66.0%	100.0%
Personal Image (IMP)	0.3%$_a$	6.9%$_b$	3.1%	4.8%	95.2%	100.0%
Agriculture (AGA)	4.0%$_a$	0.9%$_b$	2.7%	85.1%	14.9%	100.0%
Graphic Arts (ARG)	3.5%$_a$	0.0%[1]	2.0%	100.0%	0.0%	100.0%
Installation & Maintenance (IMA)	3.3%$_a$	0.0%[1]	1.9%	100.0%	0.0%	100.0%
Maritime Industry & Fisheries (MAP)	2.5%$_a$	0.3%$_b$	1.6%	90.9%	9.1%	100.0%
Food Industry (INA)	0.5%$_a$	1.4%$_b$	.9%	31.8%	68.2%	100.0%
Wood, Furniture & Cork (MAM)	0.9%$_a$	0.0%[1]	.5%	100.0%	0.0%	100.0%
Total	**100.0%**	**100.0%**	**100.0%**	**56.9%**	**43.1%**	**100.0%**

Source: Project "Itinerarios de éxito y abandono en la FP de nivel I y II" [Successful pathways and dropout in VET levels I and II] (ref. EDU2013-42854-R)

Masculinisation of professional families is found to a greater extent than feminisation thereof: 9 masculinised professional families as opposed to 5 feminised ones out of a total of 16 professional families. In addition, the degree of segregation is higher in masculinised professional families, reaching 100% male students in Wood, Furniture & Cork; Installation & Maintenance, and Graphic Arts. With values between 90% and 100%, we found Electricity & Electronics (97.2%), Computing & Communi-

cations (95.5%), Transport & Maintenance of Motor Vehicles (94.9%), and Maritime Industry & Fisheries (90.9%). With values greater than 80% but less than 90% we found Agriculture (85.1%) and Physical & Sporting Activities (83.3%). These families account for 40.7% of students. By gender, 56.4% men and 6.5% women start their courses in masculinised professional families.

Degree of segregation in feminised professional families has values greater than 90% in Personal Image (95.2%) and Sociocultural & Community Services (93.3%). Degree of feminisation is less than 80% in Health (76.4%), and under 70% in Food Industry (68.2%) and in Trade & Marketing (66%). These families account for 33.2% students. By gender, 61.6% women and 11.7% men start their courses in feminised professional families.

Table 2.
Percentage of men and women in different professional families by type of segregation.

PROFESSIONAL FAMILY	Total	Women	Men
MIXED	26.2%	31.9%	21.8%
MASCULINISED	40.7%	6.5%	66.4%
FEMINISED	33.2%	61.6%	11.7%

If we compare these data with the Spanish state as a whole, we observe that all the masculinised families in Mallorca are also masculinised at country level. The two mixed families for the area of Mallorca are actually segregated at the countrywide level. Administration & Management goes from being mixed (but with a higher percentage of women) to feminised; whereas Hotel Industry & Tourism goes from being mixed (but with a higher percentage of men) to masculinised.

The two feminised families in Mallorca, but with the least degree of segregation amongst the feminised ones (Trade & Marketing and Food Industry, both with under 70% women), are mixed at the state level. None of the masculinised families change in the analysis at country level.

Table 3.
Types of Professional Family in VET in Spain and in Mallorca.

	MALLORCA	**STATE**
Health (SAN)	FEMINISED	FEMINISED
Administration & Management (ADG)	MIXED	FEMINISED
Personal Image (IMP)	FEMINISED	FEMINISED
Sociocultural & Community Services (SSC)	FEMINISED	FEMINISED
Electricity & Electronics (ELE)	MASCULINISED	MASCULINISED
Transport & Maintenance of Motor Vehicles (TMV)	MASCULINISED	MASCULINISED
Computing & Communications (IFC)	MASCULINISED	MASCULINISED
Hotel Industry & Tourism (HOT)	MIXED	MASCULINISED
Installation & Maintenance (IMA)	MASCULINISED	MASCULINISED
Physical & Sporting Activities (AFD)	MASCULINISED	MASCULINISED
Agriculture (AGA)	MASCULINISED	MASCULINISED
Graphic Arts (ARG)	MASCULINISED	MASCULINISED
Wood, Furniture & Cork (MAM)	MASCULINISED	MASCULINISED
Maritime Industry & Fisheries (MAP)	MASCULINISED	MASCULINISED

CONTINUED ON NEXT PAGE →

Trade & Marketing (COM)	FEMINISED	MIXED
Food Industry (INA)	FEMINISED	MIXED
Mechanical Manufacturing (FAM)	DOES NOT EXIST	MASCULINISED
Image and Sound (IMS)	DOES NOT EXIST	MIXED
Chemistry (QUI)	DOES NOT EXIST	MIXED
Construction & Civil Work (EOC)	DOES NOT EXIST	MASCULINISED
Textiles, Manufactures, Leather & Fur (TCP)	DOES NOT EXIST	FEMINISED
Extraction Industry (IEX)	DOES NOT EXIST	MASCULINISED
Glass & Ceramics (VIC)	DOES NOT EXIST	MASCULINISED

Source: Statistics on Non-University Education. Ministry of Education, Culture and Sport.
Source: Project "Itinerarios de éxito y abandono en la FP de nivel I y II" [Successful pathways and dropout in VET levels I and II] (ref. EDU2013-42854-R).

A comparison of segregation by professional family reflects a higher percentage of feminised families in Mallorca and a lower percentage of mixed and masculinised ones, in comparison with the data from Spain.

Table 4.
Number and Percentage of professional families
by type of segregation

	Mallorca		**Spain**	
PROFESSIONAL FAMILY	Number	Percentage	Number	Percentage
MIXED	2	12.5%	4	17.39%
MASCULINISED	9	56.25%	14	60.87%
FEMINISED	5	31.25%	5	21.74%
	16	100.00%	23	100.00%

As regards the degree of segregation in the different professional families, and following the trend already pointed out in the data from Mallorca, masculinised professional families are the ones with the highest values, which are over 90% in 10 cases. Another two (Physical & Sporting Activities, and Agriculture) display values above 80%. Only Graphic Arts and Hotel Industry & Tourism show values below 65%. The total percentage of students enrolled in these families is 47.5% (74.4% in men and 11.3% in women). In feminised professional families, Personal Image is the one that has the highest values (93.9% women), followed by Textiles, Manufactures, Leather & Fur and Sociocultural & Community Services (between 80% and 90%), Health (75.4%), and Administration & Management (62.2%). The total percentage of students enrolled in these families is 44.8% (78.8% in the case of women and 19.7% in that of men).

Table 5.
VET students in Spain for academic year 2013–14
by gender and professional family.

	% Column			% Row		
	MEN	WOMEN	TOTAL	MEN	WOMEN	**TOTAL**
Health (SAN)	7.4	30.9	17.4	24.6	75.4	100
Administration & Management (ADG)	10.1	22.5	15.4	37.8	62.2	100
Electricity & Electronics (ELE)	16.9	0.6	10	97.5	2.5	100
Transport & Maintenance of Motor Vehicles (TMV)	14.7	0.4	8.6	98	2	100
Computing & Communications (IFC)	13	1.9	8.3	90.2	9.8	100
Personal Image (IMP)	0.7	13.8	6.3	6.1	93.9	100
Hotel Industry & Tourism (HOT)	6.4	5.1	5.8	62.8	37.2	100
Sociocultural & Community Services (SSC)	1.4	11	5.5	14.5	85.5	100
Trade & Marketing (COM)	3.2	6	4.4	41.8	58.2	100
Mechanical Manufacturing (FAM)	6.4	0.3	3.8	97.1	2.9	100
Installation & Maintenance (IMA)	6.5	0.1	3.8	98.4	1.6	100

Physical & Sporting Activities (AFD)	3.2	1	2.3	80.6	19.4	100
Agriculture (AGA)	3.4	0.7	2.2	86.9	13.1	100
Food Industry (INA)	1.1	1.6	1.3	49.4	50.6	100
Image & Sound (IMS)	1	1.2	1.1	54.3	45.7	100
Graphic Arts (ARG)	1.1	0.9	1	62.3	37.7	100
Chemistry (QUI)	0.7	1.2	0.9	43.9	56.1	100
Wood, Furniture & Cork (MAM)	1.5	0.1	0.9	94.9	5.1	100
Maritime Industry & Fisheries (MAP)	0.9	0.1	0.5	94.4	5.6	100
Construction & Civil Work (EOC)	0.4	0.1	0.3	90	10	100
Textile, Manufactures, Leather & Fur (TCP)	0.1	0.6	0.3	12.3	87.7	100
Extraction Industry (IEX)	0	0	0	100	0	100
Glass & Ceramics (VIC)	0	0	0	91.7	8.3	100
Total	**100**	**100**	**100**	**57.5**	**42.5**	**100**

Source: Statistics on Non-University Education. Ministry of Education, Culture and Sport.
Mixed families have very little weight, only taking 7.7% students (10% in the case of women and 6% for men).

Table 6.
Students enrolled in professional families by type of segregation

	Mallorca			Spain		
PROFESSIONAL FAMILY	Total	Women	Men	Total	Women	Men
MIXED	26.2%	31.9%	21.8%	7.7%	10%	6%
MASCULINISED	40.7%	6.5%	56.4%	47.5%	11.3%	74.4%
FEMINISED	33.2%	61.6%	11.7%	44.8%	78.8%	19.7%

3.2. REASONS FOR CHOOSING COURSES

The question analysed herein covers nine items[19] concerning reasons for choosing courses, which were to be answered according to the degree of importance attached[20]. In order to facilitate the analysis of this question, the variables were treated as metric and the means (out of 3) and the differences between them were calculated using the T test for independent samples. Table 7 shows these results on a general level for all VET students as a whole and by gender.

Ordered according to the degree of importance attached by students, the reasons are: 1) "Because I like it" (2.3); 2) "To improve my working conditions" (1.81); 3) "Because there are job offers related to it" (1.64); 4) "Because I couldn't get into any other" (0.66); 5) "Because the guidance counsellor recom-

19 a) "Because I like it"; b) "Because I couldn't get into any other"; c) "Because there are job offers related to it"; d) "To improve my working conditions"; e) "Because some friends are doing it"; f) "Because the guidance counsellor recommended me it"; g) "Because my family wanted me to"; h) "Because I was required to by my company"; i) "Because I couldn't find a job".

20 1) "It was not at all important"; 2) "It wasn't important"; 3) "It was important"; 4) "It was very important"

mended it to me" (0.61); 6) "Because some friends are doing it" (0.57); 7) "Because I couldn't find a job" (0.53); 8) "Because my family wanted me to" (0.49); 9) Because I was required to by my company" (0.28).

Table 7.
Importance attached to the reasons for choosing courses by gender.

	Men	**Women**	**Total**
	Mean	Mean	Mean
P9.a Because I like it	2.26_a	2.35_b	2.30
P9.b Because I couldn't get into any other	$.69_a$	$.61_b$	.66
P9.c Because there are job offers related to it	1.59_a	1.71_b	1.64
P9.d To improve my working conditions	1.78_a	1.86_b	1.81
P9.e Because some friends are doing it	$.65_a$	$.46_b$	.57
P9.f Because the guidance counsellor recommended it to me	$.59_a$	$.63_a$	.61
P9.g Because my family wanted me to	$.56_a$	$.40_b$	.49
P9.h Because I was required to by my company	$.33_a$	$.21_b$	.28
P9.i Because I couldn't find a job	$.47_a$	$.61_b$	.53

Source: Project "Itinerarios de éxito y abandono en la FP de nivel I y II" [Successful pathways and dropout in VET levels I and II] (ref. EDU2013-42854-R)

As far as gender-based differences are concerned, the T test for independent samples for Table 7 points towards there being significant differences between men and women in terms of the

importance attached to the different reasons for studying their current courses. Along these lines, *women place more importance than men on the following reasons*: "Because I like it" (2.35 as opposed to 2.26), "Because there are job offers related to it" (1.71 as opposed to 1.59), "To improve my working conditions" (1.86 as opposed to 1.78), "Because I couldn't find a job" (0.61 as opposed to 0.47).

On the other hand, *men place more importance than women on the following reasons:* "Because I couldn't get into any other" (0.69 as opposed to 0.61), "Because some friends are doing it" (0.65 as opposed to 0.46), "Because my family wanted me to" (0.56 as opposed to 0.40), "Because I was required to by my company" (0.33 as opposed to 0.21). Finally, *there are no significant differences between the two groups* in terms of the weight attached to the reason, "Because the guidance counsellor recommended it to me".

The questionnaire also included one open question in which students could provide, *"Other reasons for choosing to take your current course"*. In order to facilitate the analysis of the results of this question, the responses provided by students were grouped in the following categories:

1) Instrumental studies: responses that mention education and training as their main motivation: "to expand my training in this field", "to gain admission to higher education", "to get training while I am working", etc.

2) Instrumental for work: responses that mention the labour market and careers: "to be able to practise this profession", "to gain access to a job", "to start up my own company", "to improve my working conditions", etc.

3) Because of recommendation: responses that refer to recommendation by guidance counsellors, relatives, etc.

4) Because I like it: responses such as, "I like it", "it was the most interesting", "it was what most caught my eye", etc.

5) I had no other choice: responses that point towards not having been able to do the education or training they wanted to, such as: "because I couldn't gain admission to other higher education" or "it was the closest I could do", etc.

6) Difficulties with studies: responses that refer to the difficulty students have had with their studies: "I had difficulties getting my Compulsory Secondary Education Certificate", "I wasn't able to pass Baccalaureate", etc. But it also includes responses that mention the easiness of VET compared to other studies, such as: "I didn't want to do Baccalaureate", "Because VET is much easier", etc.

7) Disorientation / Discontent: responses that indicate no clear idea as to why they had chosen the course, such as: "so as not to be a NEET". But also others that reveal discontent with the choice: "I like it but I don't want to do it as a career", "I thought I'd like it but now I realise I don't", etc.

The percentage of people who indicate one of these categories as a reason for choosing are the following: 1) "Instrumental studies" (32.2%); 2) "Instrumental for work" (22.2%); 3) "By recommendation" (14%); 4) "Because I like it" (13.7%); 5) "Because I had no other choice" (6.9%); 6) "Difficulties with my studies" (6.1%); 7) "Disorientation / Discontent" (4.9%).

Regarding these results, it is interesting to observe how students provide "other reasons for choosing to take this course" which were not considered in the aforementioned questions: this is the case of the categories "instrumental studies", "difficulties with studies", and "disorientation/discontent". In this sense, it can be observed that the appearance of these new categories

clarifies the size of the option "I like it", which covered over 60% of answers, in a very significant manner. So much so that the two "other reasons" that have now become the most important are "instrumental for work" (22.2%) and "instrumental studies" (32.2%), which is what most of the women claim.

Table 8.
Other reasons for choosing courses by gender.

	Men	**Women**	**Total**
	% column	% column	% column
DISORIENTATION / DISCONTENT	5.3%$_a$	4.4%$_a$	4.9%
I HAD NO OTHER CHOICE	9.3%$_a$	4.6%$_b$	6.9%
DIFFICULTIES STUDIES	9.3%$_a$	3.0%$_b$	6.1%
RECOMMENDATION	16.9%$_a$	11.2%$_a$	14.0%
I LIKE IT	20.8%$_a$	7.0%$_b$	13.7%
INSTRUMENTAL WORK	20.5%$_a$	24.0%$_a$	22.2%
INSTRUMENTAL STUDIES	18.0%$_a$	45.9%$_b$	32.2%
Total	100.0%	100.0%	100.0%

Source: Project "Itinerarios de éxito y abandono en la FP de nivel I y II" [Successful pathways and dropout in VET levels I and II] (ref. EDU2013-42854-R)

Gender-based differences are also significant in this case, in accordance with the Chi square for Table 8 (Chi=62.979; gl=12; Sig.=.000). As for these differences, *the men indicate the following categories more than women*: "I had no other option" (9.3% compared to 4.6%); "Difficulties with my studies" (9.3% compared to 3%); "Because I like it" (20.8% compared to 7%). On the other hand, *women point significantly more than men to* instrumental reasons of studies (45.9% compared to only 18% men). Finally,

there would be no significant differences between the two groups for the rest of the categories proposed: "Disorientation/discontent", "Recommendation", and "Instrumental for work".

3.3. THE SINGLE MAIN REASON FOR CHOOSING A COURSE

In this section, the results of the second of the questions referring to the reasons for choosing a course are presented. In this, the people surveyed were asked to point out which of the nine items proposed had, in their case, been the single most important one. To analyse these results, Chi square was calculated for the tables presented and a Z test was performed to compare the column proportions. The results in Table 9 show these results for all VET students as a whole and by gender.

In order of importance, these reasons are: 1) "Because I like it" (62.2%); 2) "Because there were job offers related to it" (9.8%); 3) "To improve my working conditions" (8.7%); 3) "Other reasons" (6.5%) (which will be analysed below); 4) "Because I couldn't get into any other" (5.8%); 5) "Because I couldn't find a job" (6.5%); 6) "Because some friends are doing it" (1.2%); 7) "Because my family wanted me to" (1%); 8) "Because the guidance counsellor recommended me it" (1%); 9) "Because I was required to by my company" (0.8%).

Table 9.
Single main reason for choosing a course by gender.

P9.1 Single main reason why you chose to study your VET course	P11.a Gender of respondent (Men / Women)		
	Men	Women	Total
	% column	% column	% column
a) Because I like it	64.5%$_a$	59.2%$_b$	62.2%
b) Because I couldn't get into any other	6.6%$_a$	4.8%$_b$	5.8%
c) Because there were job offers related to it	9.1%$_a$	10.7%$_a$	9.8%
d) To improve my working conditions	7.1%$_a$	10.7%$_b$	8.7%
e) Because some friends are doing it	2.0%$_a$	0.2%$_b$	1.2%
f) Because the guidance counsellor recommended me it	0.7%$_a$	1.3%$_a$	1.0%
g) Because my family wanted me to	1.0%$_a$	1.1%$_a$	1.0%
h) Because I was required to by my company	0.4%$_a$	1.4%$_b$	.8%
i) Because I couldn't find a job	3.2%$_a$	2.7%$_a$	3.0%
j) Other reasons. Specify which ones	5.4%$_a$	7.9%$_b$	6.5%
Total	100.0%	100.0%	100.0%

Source: Project "Itinerarios de éxito y abandono en la FP de nivel I y II" [Successful pathways and dropout in VET levels I and II] (ref. EDU2013-42854-R)

In terms of gender-based differences, the Chi square for Table 9 displays significant differences between men and women with respect to the single main reason for choosing their course (Chi=60.775; gl=9; Sig=.000). In this sense, *women indicate*

the following reasons to a greater extent than men: "To improve my working conditions" (10.7% versus 7.1%), "Because I was required to by my company" (1.4% versus 0.4%), "Other reasons" (7.9% versus 5.4%) (which will be analysed below). Meanwhile, *men indicate the following categories to a greater extent than women:* "Because I like it" (64.5% versus 59.2%), "Because I couldn't get into any other" (6.6% versus 4.8%), "Because some friends are doing it" (2% versus 0.2%).

Finally, *no significant differences were found between the two groups in the following categories:* "Because there are job offers related to it", "Because my guidance counsellor recommended me it", "Because my family wanted me to", and "Because I couldn't find a job".

3.4. INFLUENCE IN DECISION-MAKING

In this section the results of the questions concerning influence in decision-making regarding education are analysed. First of all, respondents were asked whether anyone had recommended they take their current course and, if so, they were asked to answer a multiple choice question as to who had made that recommendation (guidance counsellor, teacher, family, friend). To analyse these questions, the Chi squares of the contingency tables were analysed and a Z test was performed to compare proportions. The results are presented in Table 10. With respect to influence in decision-making regarding education, 47.7% VET students declare that someone had recommended they take their current course, whereas 52.3% state that nobody had recommended it to them.

Table 10.
Whether someone had recommended the courseto them and who had recommended it by gender.

		Men	Women	Total
		% column	% column	% column
P9.2 Whether someone had recommended the course	Yes	46.6%$_a$	49.1%$_a$	47.7%
	No	53.4%$_a$	50.9%$_a$	52.3%
	Total	100.0%	100.0%	100.0%
P9.3.a Whether a GUIDANCE COUNSELLOR had recommended it	Yes	22.0%$_a$	26.5%$_b$	24.0%
	No	78.0%$_a$	73.5%$_b$	76.0%
	Total	100.0%	100.0%	100.0%
P9.3.b Whether a TEACHER had recommended it	Yes	18.0%$_a$	17.9%$_a$	18.0%
	No	82.0%$_a$	82.1%$_a$	82.0%
	Total	100.0%	100.0%	100.0%
P9.3.c Whether a RELATIVE had recommended it	Yes	50.9%$_a$	55.5%$_a$	53.0%
	No	49.1%$_a$	44.5%$_a$	47.0%
	Total	100.0%	100.0%	100.0%
P9.3.d Whether a FRIEND had recommended it	Yes	46.4%$_a$	42.1%$_a$	44.5%
	No	53.6%$_a$	57.9%$_a$	55.5%
	Total	100.0%	100.0%	100.0%

Source: Project "Itinerarios de éxito y abandono en la FP de nivel I y II" [Successful pathways and dropout in VET levels I and II] (ref. EDU2013-42854-R)

As for the people who had made the recommendation, it is worth noting the weight that family and friends have compared to guidance services and teachers. Thus, only 18% students claim that a teacher had recommended the course and 24% state that a guidance counsellor had done so, whereas 53% declare that a relative had recommended the course and 44.5% state that a friend had done so. An analysis of gender-based differences

(Table 10) reveals that there would be no significant differences between men and women as regards "whether someone had recommended the course to them (Chi=1.865; gl=1; Sig=.172). In relation to the people who had made this recommendation to them, significant differences are found with respect to guidance counsellors, who would have a greater influence in decision-making regarding education in women than in men.

4. CONCLUSIONS

In this text we have analysed gender segregation in the professional families in Upper Secondary VET, as well as the reasons and influences in choosing these courses, based on a representative sample of the students taking the first year of upper secondary VET in Mallorca.

The results obtained reflect a high degree of gender segregation, which results in the predominance of enrolment in masculinised or feminised families rather than in mixed ones: two professional families out of a total of 16 (12.5%) are mixed whereas masculinised ones represent 56.25% and feminised ones 31.25%. Although the mixed professional families are found among the ones that have the highest percentages of students enrolled, only 26.2% of the total take these (31.9% women and 21.8% men). In the case of men, 66.4% are enrolled in masculinised professional families and 11.7% in feminised families. In women, 61.6% are found in feminised families and 6.5% in masculinised ones.

Hence, it can be observed that, even though women and men are to a greater extent in families where people of their gender predominate, secondly in mixed families and, thirdly, in families where people of the opposite gender predominate, this

trend acquires distinct nuances in women and men. The former is grouped more in feminised professions and, secondly, in mixed ones, whereas they participate very little in masculinised professional families. A lower percentage of men participate in mixed professions than women but they are more involved in feminised families than women in masculinised ones. If we compare with the data from Spain, we observe that there is a huge coincidence between masculinised and feminised professional families, as well as between the degree of segregation within each of these groups, with some courses remaining exclusive or almost exclusive to men in a substantial percentage of the professional families. In the case of women, this trend is found to a much lesser extent.

A comparison with the data for Spain as a whole also reveals some exceptions. Particularly noteworthy is the case of Graphic Arts, which has no women enrolled in Mallorca, whereas at the level of Spain, it has 37.7% female students. Smaller differences are produced in Trade & Marketing and Food Industry (both feminised with segregation below 70% in Mallorca which are mixed in the whole of Spain), Administration & Management (which goes from being mixed in Mallorca to feminised with 62.2% segregation in Spain), and Hotel Industry & Tourism (that goes from mixed in Mallorca to masculinised with 62.8% segregation).

Overall, greater gender segregation can be observed in Spain, with values less than or equal to 10% students in mixed families. There is also an increase in participation of men in feminised families and of women in masculinised families; although the values are still lower for women than men and, in all cases, are below 20%.

In terms of the reasons for choosing courses, the results suggest that men attach more importance to their social environment (friends, family, company) when it comes to making their decisions regarding education than women; whereas women place more importance than men on more pragmatic or instrumental reasons ("Because there are job offers related, "To improve my working conditions") and expressive ones ("Because I like it"). There are also more women who indicate "Other reasons for choosing to take their courses", again also stressing more pragmatic and instrumental reasons in this case, although this time for reasons related to studies. In the case of men, these reasons are related to rejection or the impossibility of taking other courses (I didn't want to do Baccalaureate, I couldn't get into any other, etc.); difficulty with previous studies, and the idea that VET courses are easier than Baccalaureate (I found it hard to get my Compulsory Secondary Education certificate, VET is easier than Baccalaureate, I wasn't able to finish Baccalaureate, etc.); and expressive reasons (I like it).

As for the main reason for their choice of studies, women choose the following main reasons more than men: "To improve my working conditions", "Because I was required to by my company" "Other reasons". Men choose the following main reasons more than women: "Because I like it", "Because I couldn't get into any other", "Because some friends are doing it".

When respondents were asked to choose the single main reason when choosing their courses, the results differ with respect to the previous question, in which they had to indicate the degree of importance. In this sense, if women placed more importance on the category, "Because I like it", here we see that men point

this out as their single main reason more than women. The same happens with respect to the category "Because I was required to by my company".

On the other hand, men continue to place more importance than women on the reason "Because some friends are doing it" at the same time as they point more than women towards the fact that "I couldn't get into any other". Women, meanwhile, continue to attach more importance to the category "To improve my working conditions". Concerning the people who had made the recommendation to them, the great weight of family and friends compared to guidance counsellors and teachers stands out. With respect to the differences between men and women, the only significant one refers to the greater influence of guidance services in decision-making in women than in men.

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Fostering Social Competence of Disadvantaged Young People

Kristina Kühn*

Abstract: This study focuses on the fostering of social competence of disadvantaged young people based on the example of the educational course 'Werkschule Bremen'. Theoretical approaches regarding social competence as a learning content mainly base on the model of social information processing, but the meaning of practical and experience – oriented approaches increases constantly. Taking the specific contextual conditions into account, the study combines qualitative and quantitative methods under the roof of the design – based research methodology to answer the questions of how a location – independent didactical concept to foster social competence could be created and which comparable impact on the participants' social competence could be verified. Results show that a basic didactical concept is thinkable, while the teaching and learning environment has a huge impact on the comparability. It became also clear that students' motivation to participate depends on both, own and teachers' interest as well as the teacher's capacity to provide safe relationships. As a core result, the study delivers a didactic model which is based on targeted controlled experience – oriented learning environments on the practical side and the term 'social literacy' on the curricular level.

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Keywords: Vocational Orientation, VET, Vocational Preparation, Social Competence, Social Literacy, Design – based Research.

1. INTRODUCTION

Social competence is from great impact for personal *well-being* (OECD, 2015a), it determines school and work careers (Faix & Laier, 1996; Kiper & Mischke, 2008; Seligman, Ernst, Gillham & Linkins, 2009) and is seen as the key to personal development (Crisand, 2002). Due to its high relevance for work environments, it is seen as an important learning content in the Vocational Education and Training and a growing research field for vocational research (Euler, 2016; Seeber & Wittmann, 2017).

One important area of vocational education targets the education of young people in the transition of school to work. Especially those with disadvantages of social or educational reasons have problems in managing this step (Ecarius & Eulenbach, 2012). The possibility to act socially competent becomes important from two perspectives within this context: firstly, there is the area of personal development, where young people have to fulfil developmental tasks to become responsible citizens; secondly, social competence builds a smaller or bigger part of vocational profession and, therefore, is a relevant learning goal in the field of vocational education and training. On the first view, both perspectives seem to require different approaches of how to construct social competence, namely a more psychological or a more vocational educational way. But considering young and disadvantaged adults, it can be assumed that a more holistic approach is required which involves aspects of personal

development and vocational profession (in terms of vocational orientation). In recent years there have been many efforts to develop concepts to foster social competence in a various number of contexts, i.e. for higher educational students (Euler & Bauer-Klebl, 2009), for social careworkers (Dietzen, Monnier, Srbeny & Tschöpe, 2015) and for school context (Yeates, 1989). In Germany, the concept "Fit for Life" (Jugert, Rehder, Notz, & Petermann, 2010) delivers a huge collection of moduls and methods to target social competence, especially for young people with behavioural problems (youth in risc). This concept is also used within the Werkschule Bremen[21].

The presented study is guided by the following questions:

1 Which aspects of social competence are relevant learning issues in the *Werkschule*?
2 What do young people learn during an intervention, especially developed for the *Werkschule*?
3 Which are helpful and hindering factors related to the fostering of social competence in de context of the *Werkschule*?

The study follows the generative design-based research approach (McKenny & Reeves, 2012) and leads to an area specific model of social competence (theoretical output), as well as to concrete contents and factors (practical output) which have to be taken into account during fostering social competence in the context of the *Werkschule*. Chapter 2 of this paper delivers a short review of the actual state of the art regarding social competence, while

21 Further on, it will be written as *Werkschule*.

differences between a psychological, educational and vocational view are highlighted. Additionally, there are preliminary work steps described which are needed to understand the results. In chapter 3, the methodological framework is described and the selection of the results is introduced. After that, the results are presented. Following the theoretical and empirical findings, there is an area-specific model to foster social competence in the *Werkschule* developed in Chapter 4. To summarize the results, the term *social literacy* is proposed. Finally, the results are discussed and research desiderata identified (Chapter 5).

2. SOCIAL COMPETENCE: FINDING A WORK DEFINITION IN A BROAD FIELD

Though there seems to be a great consensus regarding the meaning of social competence as a piece of learning, there is less accordance of an evidence-based model of this construct. The plurality of approaches to define and construct social competence is caused by several aspects: the practice needs functioning approaches and 'what works' is adapted to the field, proven by practice itself. The scientific community focuses on theoretical constructions and, actually, an increasing number of concepts with evidence-based impacts on practical settings. The following chapter delivers an overview of main discussion lines, exemplifies a number of fostering approaches and, finally, includes the definition of social competence related to the presented study.

A. AN OVERVIEW OF SOCIAL COMEPTENCE APPROACHES

The construct of social competence (Rehder, Jugert, Notz, & Petermann, 2001; Kiper & Mischke, 2008), social competences (Kanning, 2002; Hinsch & Pfingsten, 2007) or social competency (Taylor, Liang, Tracy, Williams & Seigle, 2002) shows a controversial discourse regarding that issue. In general, (1) psychological, (2) educational scientific and (3) vocational educational definitions of social competence are found.

Theoretical perspectives

The (1) psychological view differs two main aspects: social competence can be seen as result of the successful development of one's personality (Oerter & Dreher, 2008). The psychological manifestation of mental characteristics represents the main perspective of psychological research in terms of psychometric. An important field is the measurement of those characteristic values (i.e. Kanning, 2002). Social competencies in this context can be seen as social skills – the observable part of a psychical representation. Social competence here refers, naturally, to action in general social contexts (Seeber & Wittmann, 2017). Unclear is the relation of action and behavior (not only) in the psychological constructions (Neubert, 2009).

The separation between the psychical representation – disposition – and its realization – performance – is also adapted by the community of (2) educational sciences, especially in the field of education standards (Klieme & Hartig, 2007). The concept of competence (Weinert, 2001) defines competences itself as 'in all individuals available or learnable cognitive capabilities

and skills to solve specific problems, as well as the related motivational, volitional and social willingness and skills to be able to successfully and responsibly use those solutions in various situations' (Weinert 2001, S. 27f.). Specific for this point of view is the focus on the learnability of competence aspects, mostly in the fields of social and cultural learning, as well as lifelong learning (Gudjons, 2008; Straka & Macke, 2009). Developmental challenges are not neglected, but enriched by a controlled growth of knowledge and capabilities in contexts of formal education, such as kindergartens and schools. Due to this perspective, research focuses on the development and impact of teaching and learning environments under complex context conditions. The perspective of educational science considers the situational aspect of competence important for a theoretical model of social competence, what is also carried by the vocational education and training in Germany.

Since the last two decades, the German VET system changes towards a competence-orientation in class and exams. Bader and Müller (2002) developed a basical concept for action competence and social competence represents one part of it, next to professional and methodical expertise, as well as self-competence. All these components are understood as interacting facets of the construct of action competence. The (dual) vocational education system in Germany strongly refers to this concept, because of its status as educational and political standard (Kultusministerkonferenz KMK 1996; 2007; 2011).

The *Werkschule* is introduced later within this paper, but a few words need to be said at this point: as school-drop outs, the young people have problematic or frustrating school careers.

They often lost fun in learning which can culmulate in school absenteeism. On the one hand, they may have behavioral problems, on the other they do maybe just not know how to act or express themselves to act socially successful. The *Werkschule* itself provides a practical approach to those students, because it is assumed that they might learn better in a more practical than theoretical context. The evaluation of the piloting delivers promising results (Gessler & Kühn, 2013). It seems to be necessary to take all three discussion lines into account to foster social competence in the special context of the Werkschule. Social competence is here defined as

> the cognitive skills and abilities available to individuals or learnable through them in order to solve problems in social situations as well as the related motivational, emotional and volitional willingness to successfully and responsibly use the problem solutions in standardized and value-oriented situations (Kühn, 2017; expected to be published in 2018).

General aspects to foster social competence in school contexts

The area of fostering social competence is part of a variety of social, educational and psychological working fields and cannot be presented in full extend. Instead, an overview is given about school-related approaches, because of the specific focus of the paper. Basically, fostering approaches can be differenciated in behaviour- and relation-oriented approaches (Jerusalem & Klein-Heßling, 2002; Achtenhagen, 2008). The fostering concepts mostly focus on a selection of social competence

characteristics, such as prosociality (Kienbaum, 2016), empathy and moral awareness (Baumgartner & Alsaker, 2016), assertiveness and perspective taking (Perren, Argentino-Groeben, Stadelmann & Klitzing, 2016). There seem to be three important aspects regarding a positive long-term effect of fostering concepts: firstly, not only a single group (i.e. a class) is involved, but the whole school, if possible (Strohmeier and Spiel, 2016) and secondly, an intervention needs a clear and repeating agenda, as well as intensity (Merrill, Smith, Cumming & Daunic, 2016). Actual forms of interventions are analysis and modification of behaviour, counselling and therapy, social skills trainings, peer-mediation, cognitive interventions and self-management and multiple interventions (Jerusalem & Klein-Heßling, 2002).

An intervention that fits to the *Werkschule* needs to realise the following points:

- identify contents of social competence which are relevant in the context of the Werkschule,
- not only train behaviour, but make young people *think* about their acting, as well as about possible consequences of acting/not acting (reflection),
- find a balance between assertiveness and adjustment in terms of focusing decision making,
- achieve connectivity to the school context by relating methods, materials and contents to available equipment and curriculum,
- assure usability of the intervention.

Further research regarding social competence shows a close connection of the individual ability to successful social acting

and cognitive performance (i.e. Seligman et al., 2009) which becomes a relevant aspect for school education, especially for drop-outs. Bringing students back to school means to make school fun again. As Ecarius, Hößl and Berg (2012) show that the experience of school in difference to former school experiences can be helpful to overcome and revise those often bad experiences (Ecarius, Hößl & Berg, 2012). Also promising approaches are positive education (Seligman et al., 2009), experience-based education (Gudjons, 2008; Möbus, 2013) and creation of a positive learning climate (Brüning & Saum, 2009) which naturally involves students and teachers, as well. The following parapraph briefly describes the main issues of the *Werkschule* and then presents a concept that was developed according to its specific conditions.

B. A DIDACTICAL WORK MODEL TO FOSTER SOCIAL COMPETENCE

The Werkschule is a three-year educational course localised at the vocational education and training centers and anchored in the education system of the federal country of Bremen, Germany. The students can achieve a regular school exam (the so-called simple (after two years) or expanded (after three years) *Berufsbildungsreife*) in a learning environment which is two-third practical organized. The implementation of the *Werkschule* in Bremen aims the reduction of school-leavers without qualification and therefore can be seen as political motivated.

The concept of the *Werkschule* is built on three main pillars:

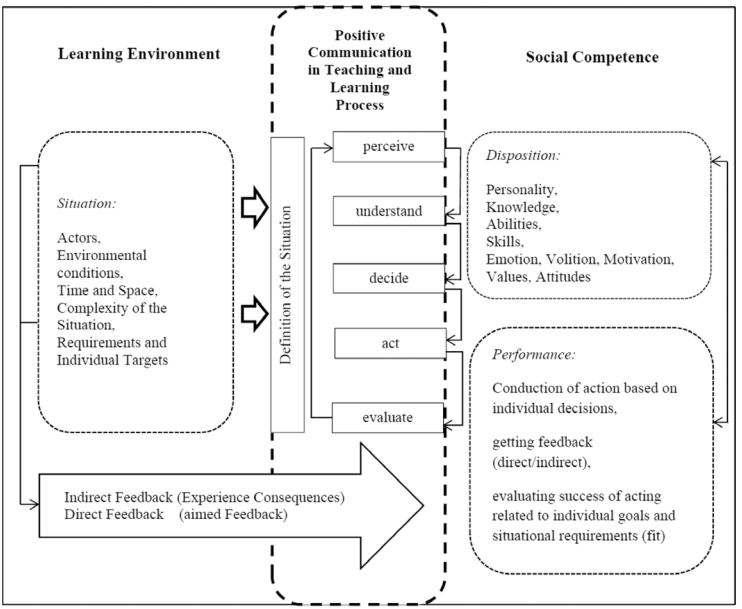
1 *psycho-social stabilization* of the students, contenting the characteristics of time, learning in teams and socialpedagogical support,
2 *vocational, project- and product-oriented learning* which also contains a character of seriousity,
3 *further structural characteristics,* such as connection to the urban district, probation period, core school timetables curriculum and exams (Gessler & Kühn, 2013).

Ideally, lessons are planned and conducted by teams of at least four persons, classteachers, subject teachers, masters (vocational professionals) and socialpedagogues. The piloting of the Werkschule found that the approach is promising, but that there is still potential for optimization in terms of social competence as a learning content. This becomes more important, as teachers answered, asked for reasons that students leave their old schools, that most of the students are no longer socially fit ('sie kommen sozial nicht mehr zurecht') (Gessler & Kühn, 2013; Kühn, 2017, expected to be published in 2018). What students themselves valued as very positive is the contrast in several dimensions they experience in the context of the *Werkschule*, compared to their old school. Active creation of social learning environments in contrast to already familiar situations and conditions seems to be a productive starting point for a concept development.

Based on the theoretical background and the practical experiences, a first model to foster social competence in the context of the *Werkschule* was developed and is presented in Fig. 1 (next page). Going through the model, it is firstly assumed

that social competence as a learning content needs to be elaborated by the teaching staff. Each single situation which requires action has specific conditions as its disposal (i.e. a conflict: who was/is involved, where did former action take part, how was the problem genesis, how complex was/is the situation and, finally, which are requirements and given targets). Teachers represent requirements in terms of their (vocational) profession and have to make these aspects transparent to the students to make a holistic understanding of the situation possible. Situa-

Figure 1.
Work Model of a Didactical Framework to Foster Social Competence in the Werkschule. Source: own illustration, following Dörner, 2011; Euler & Bauer-Klebl, 2009; Jugert et al. 2010; Neubert, 2009; Seligman et al., 2009; Straka & Macke, 2005)



tion aspects have to be understood to become helpful information for the actor. Therefore, the attention of the students has to be given and environmental stimuli change to information by becoming relevant for the students (Straka & Macke, 2005).

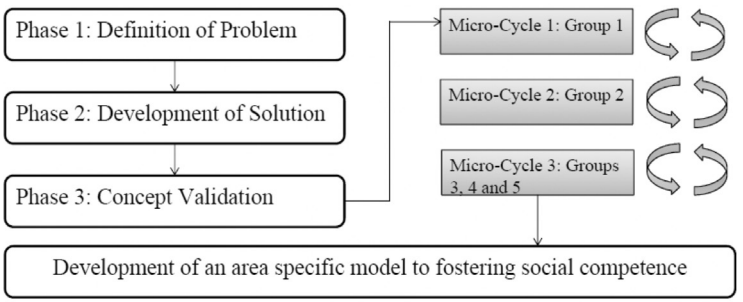
The model of a complete action with its conceptual proximity to the cognitive (here: social) information processing model serves as a fitting illustration of the learning process and includes the steps *perceive*, *understand*, *decide*, *act* and *evaluate*. These iterative steps are closely connected to aspects of social competence, either the individual disposition or the concrete performance. This process has to be attended by those who take over teaching tasks. According to positive education, the used language is resource-oriented and respectful. To evaluate actions in terms of success, (at least) two ways are thinkable: students could learn by receiving feedback directly through experiencing consequences which go with an action, or persons involved in the learning task could give direct feedback. Both variants need to be reflected to become experience-based knowledge and, due to that, foster social competence. To develop learning tasks, the degree of complexity of a social situation is necessary to be taken into account. Minimal complexity makes it easier to adapt new knowledge and action processes, while a too high degree of complexity might be frustrating and may end up in refusial of the task.

3. DESIGN-BASED RESEARCH AS METHODOLOGICAL FRAMEWORK

The research questions target usability and impact of an intervention to be developed. This leads to a research design which

highlights development-oriented practice research. The design-based research (McKenny & Reeves, 2012) approach appears promising since it leads to practical solutions on the one and scientific findings on the other hand (Cobb, Confrey, diSessa, Lehrer & Schauble, 2003; Euler, 2014). Design-based studies follow a phase-based structure. In phase 1 the problem is defined, phase 2 foresees the development of a solution for the practice problem and phase 3 contents the validation of the solution's implementation. One core aspect of the design-based research approach is the iterative optimization and adaption of an intervention or concept. Each so-called mico-cycle involves the following work steps: *design*, *conduction*, *analysis* and *re-design*.

Figure 2.
Design-based Research Design of the Study. Source: own presentation, following McKenny & Reeves, 2012.



3.1 DESIGN PRINCIPLES AND QUALITY CRITERIA

Design-oriented research approaches is still in formation process. Nevertheless, it seems certain that these types of research design need to realize some special characteristics (McKenny and

Reeves, 2012) resp. principles (Euler, 2014). Design-based research approaches are: iterative, orientated in interventions, collaborative, oriented in use(ability), theory-based and integrative. They deliver area-specific theories (Reinmann, 2010; Euler, 2014), design-frameworks or design-methodologies (Reinmann, 2010).

This study targets the principles as follows: the iteration is given by the conduction of three micro-cycles which serve as optimization-cycles for the intervention as well as research context of the impact on learning. An intervention was developed and tested. Collaboration during the research process was realized by exchange with involved teaching staff, the second obervator (see description of micro-cycles 2 and 3) and an external expert. Moreover, the students actively took part in feedback rounds and, of course, informal during the implementation process. The use of the research approach and results is given by the interest of the involved school actors in the intervention, including a didactical structure (learning goals, fostering environment, methods) and examples of implementation (best practice). The theoretical basis is delivered by the theoretical didactical workmodel (cf. chapter 2.2) which combines all relevant theoretical findings towards fostering social competence in the *Werkschule*. The research methods were chosen according to the needs of each single phase and micro-cycle to comply to the integrative aspect. For all used research methods, wether qualitative or quantitative, the related quality criteria were kept.

Design-based research does not only explore and test what *is*, but also what could *be* (Schwartz, Chang & Martin, 2005). It represents a change requirement and, therefore, stands in high responsibility to the practice which is subject and object to research.

3.2 PRESENTATION OF THE STUDY

As mentioned at the beginning, the study aims the design and impact of an intervention to foster social competence in the *Werkschule*. The design and testing is related to the system of the design-based research. That means the concoction of the research happens in phases and micro-cycles. Each phase, as each micro-cycle, has its own research methods which are customized to the scientific requirements of the development resp. research step. Firstly, the general structure is presented, but only the micro-cycle 3 is highlighted in terms of findings.

To concretize the research problem (*phase 1*) two things were necessary: firstly, the curricular framework and learning goals regarding social competence had to be identified what was done by literature review. Secondly, the actual practice had to be captured, including important topics, learning goals and didactical challenges. Additionally, the organizational frame of an intervention to be developed was determined. To realize this step a group interview with teaching actors was conducted. At the end of phase 1 the conditions of the interventions were clear, as well as necessary contents. In *phase 2* the intervention itself was designed. Therefore, the results from phase 1 were set into relation to relevant theoretical approaches by interlinking phases of construction and recherché. The first draft of the intervention, the so-called prototype, was the basis for the concept validation (*phase 3*). Phase 3 can be separated in three steps, namely micro-cycles (cf. Fig. 2). Each had a special focus on the optimization of the prototype in terms of didactical structure and methodology as well as on the learning aspect related to the participants. In total, five classes of students from four different

Werkschulen took part in the study. The groups had to comply with the following conditions: (1) the participating class was the 9th class that means the first year of visiting the *Werkschule*, (2) the whole teacher team (or at least two personens out of this) took part in the groupinterview and (3) the responsibility for the intervention was up to the researcher. to fit these conditions was necessary to reach a maximum of comparability in heterogenous contexts. The first micro-cycle bases on group 1 (n=12), micro-cycle two on group 2 (n=14) and the third micro-cycle involved the groups 3 (n=12), 4 (n=14) and 5 (n=9). This distribution is explained in the subsequent paragraph.

In *micro-cycle 1* the fit of different methods related to the target group was investigated. Reflective discussions with the teacher and an external expert in extracurricular youth education validated the process of conduction within the group 1. Further, observations were analyzed and feedback from the students was gathered. At the end of micro-cycle 1, the first optimization of the prototype was made (Re-Design). Relevant changes affected the logical structure of the concept that means the sequence of contents and the time structure. Furthermore, the type of methods used within the intervention tends towards a clear practical orientation, rather than theoretical methods, such as discussion rounds or concept cards.

Micro-cycle 2 focused on the pretesting of research methods for the micro-cycle 3, during testing the optimized version of the intervention (Prototype 2). Again, the students' feedback was used to adapt changes to the didactical-methodological structure. The other aspect of the micro-cycle 2 was to collect data

about what was learned and to gain information about necessary adaptions for the micro-cycle 3. Therefore, three ways of data-collection were applied. To include several perspectives on the optimization process, there were two types of data collected: the qualitative feedback gathered from the students delivered not only information about what they liked and disliked and why, but also what they thought they had learned. This feedback was noted and put into comparison to quantitative data regarding their participation in the intervention. Two observers (the researcher and another person with educational background) evaluated the students' participation in the intervention. The students were also asked to answer questions regarding their actual state of interest, motivation and sense of well-being (scales from Wolf, 2003) on fixed points during the process. This information was put together to get an impression of how emotional experience, learning and participation stand in relation. Additionally, a scale to capture the students' actual expression of social competence was implemented (Inventar Soziale Kompetenzen, ISK; Kanning, 2009).

Moreover, a final quantitative questioning was made, regarding motivation (Kramer, Prenzel & Drechsel, 2000), self-efficiacy (Jerusalem, Drössler, Kleine, Klein-Heßling, Mittag, & Röder, 2009) and selected items of the self-determination scales (Deci & Ryan, 1993; Kramer, Prenzel & Drechsel, 2000). The strong explorative approach of micro-cycle 2 found that, although the items were simplified linguistcally, students had problems in answering the questions. The interim inquiry (self-reported data towards emotional experience etc.) revealed no major problems. Using factor analysis and reliability analysis (non-parametric testing because of small number of par-

ticipants), the questionnaires could be reduced and sharpened.

The intervention was implemented in three classes during *micro-cycle 3*. Since the intervention was conducted by the researcher herself, it was not possible to run them parallel, but each conduction took part in a time span of 8 weeks to reach the students all at a comparable state. The time schedule was the same for all schools, only the individual starting and ending time differed. The intervention lasted five days and contented five different topics and their related work-tasks regarding social competence. The tasks can mainly be differenciated by a more theoretical (i.e. group discussions) or a more practical (i.e. group-dynamic games) approach. As described in the former paragraph, the following data were collected: participation of the students (observation with quantitative surveillance sheet by two observers), experience of the process (quantitative self-reports by the students at three fixed points a day) and qualitative feedback of the students regarding the single days. To assess the pre-post-effect of the intervention, daily, topic-related concept-maps were added and analysed in both ways, qualitative and quantitative. Each run was concluded by a digital final inquiry (evaluation software).

To make a context-relation of the results possible, school-specific issues and observations were noted and discussed by both observers to clarify the role of each identified factor as well as value it's anticipated influence on the fostering of social competence. The results are presented below.

4. CORE RESULTS OF THE ITERATIVE TESTING

Introducing the findings, again the leading research questions are mentioned: What did the students learn? Which context factors seem to be fostering/hindering? Is there a "one-size-fits-all"-solution for the individual locations of the Werkschule thinkable? The results are firstly presented related to the methodological approach (Chapter 4.1). After that, an overall discussion follows. In Chapter 4.2, the results are consolidated to an area-specific model of fostering social competence in the *Werkschule*.

4.1 SELECTED RESULTS OF THE CONCEPT VALIDATION

The results relate to a comparing study of three groups. Two of them had similar conditions, while the third group appeared as reference group. The comparison was not based on taking part or not taking part in the intervention, but regarding the age and class level of the students (groups 3 and 4= 9th grade, group 5= 10th grade). The groups 3 and 4 only knew each other for a few weeks, group 5 was together as a class for over a year with all related and fromt time to time prolematic group-dynamics, role allocations and conflicts.

Observation of the students' participation

The students' participation was valued on bipolar scales regarding the dimensions of oral expressions (passive – active, on-topic – off-topic), listening, concentration and respectful handling of others. The reliability of the scales (Cronach's a) was satisfying (a.=753, lowest value) to very good (a=.916, highest value). Compared was the overall score of all three

in micro-cycle 3 participating students. The observation data included two collecting points per day: one related to a more theoretical setting and the second to a more practical. In order to find out which settings lead to more active participation, the data of both types of methodological settings was compared. Due to the small groups and to relate the item-pairs, Kendall's tau-b (t-b) was computed. This value is resistend to statistical outliers and therefore a suitable measure (Caspar & Wirtz, 2007). There are two findings regarding this issue of analysis: (1) the item-pairs correlated significantly especially for the more practical settings. The more theoretical settings show significance for only half of the item-pairs. This leads to the assumption that participation can be better observed in more practical settings. What seems to be trivial, is from great meaning for assessment in schools contexts. Social competence must be assessed, where it is shown and not where is spoken about, because practical settings deliver a context which leads more likely to the assessment of really existing competence then theoretical settings do. (2) The participation itself appeared on a very high level (ranging between "3=rather good" and "4=very good"). Showy was the result that the reference-group presented the highest variations within the observed items. The standard deviation decreased for the more practical settings and the curve progressions of the three groups draw near; this finding let suppose that more practical settings make a better ground possible for active participation and, due to that, to better learning conditions.

Students' experience of the process

The cognitive and emotional experiences were collected by quantitative, self-reported and process-related questionnaires. The items targeted well-being, feeling of being taken seriously, being interested, understanding of actual topics/tasks and feeing glad about taking part. These five items were questioned at the start, in the middle and at the end of a working day. The experience of the working process by the students was on a level similar to the participation. The daily averages of experiencing the intervention were on three days higher than M=3,00 (N=from 24 to 28; 3= "rather good"). On the days three and four the average was a little lower with a minimum value of M=2,97 (SD=.029, N=24). Between the groups 3 and 4 were no differences significant, while the control group differs in nearly all points. The values regarding the experience of the intervention as well as the related participation vary during the whole process much more than for the other groups. However, the reference group was the group with the most changes in participants, positive or negative work climate and time structure (beyond the intervention). Alltogether, positive experiences correlated with practical settings, results for more theoretical settings hat a higher distribution. The overall experience was mostly positive what stands, together with high values in participation, for a productive learning environment.

Effects on Learning

The intervention's effect on learning was examined in two main ways: (1) the students filled out a mind map for each day regarding the daily topic at the beginning of the work day. At the end of the day they, again, got their mind map and were allowed to

write some additional words or sentences on their paper (in a different colour). Those mind maps were analysed qualitatively (reference to which topic?) and quantitatively (how many more, if qualitatively relevant?). (2) The students self-reported their subjective perceived expression of social competence before and after a day. The items were taken from the ISK, as mentioned above, and the data collection was conducted media-based (evaluation software). Used was the subscale of social orientation, due to its high correlation with the topics and targets the teachers reported as necessary in the group interview (phase 2). The reliability was satisfying (prosociality: a=.735, 6 items, listening: a= .754, 8 items, plurality of values: a=.701, 10 items) and good (willingness to compromise: a= .771, 8 items) to very good (change of perspectives: a=.918, 13 items). Findings regarding the first part were that the students mostly noted topic-related words or sentences.

Table. 1.
Qualitative analysis of the students' mind maps. Source: own research.

Dimension	PRE		POST		GES	Words total in %
	N	%	N	%	N	
Prosociality	80	70,2	30	26,3	114	96,5
Change of Perspectives	26	35,6	22	30,1	73	65,8
Listening	52	57,1	25	27,5	91	84,6
Willingness to compromise	6	6,5	13	14,1	92	20,6
Plurality of Values	10	12,3	55	67,9	81	80,2

As shown in Tab.1, on four of five days the students referred to the daily topic. Each day, words were added what is seen as an effect on learning. Noticable is that for prosociality and listening stundents mentioned much more words in the beginning and the number of added words decreases up to half of the pre-number. This is different for the three other dimensions of social orientation. Interesting are especially the dimensions of willingness to compromise (only few words, but later more than before) and plurality of values (four times as much as before). This aspect will be discussed after the presentation of the quantitative results from the self-reports. One further important finding was that those students made notes who already wrote something in the beginning of the day (N=16, biggest group). In opposite to that, there were only three persons who presented learning indicators, but had no former knowledge. There was also a group that refused taking part in the data collection (N=6) for several reasons.

The quantitative self-reports towards social orientation was based on the same structure for each day. The questions regarding the single dimensions were formulated as 'I know what it means that...', 'I am able to do...' and 'I consider it important that...', to imply all facets of competence. The analysis showed similar ratings for the groups 3 and 4: for each day, the students experience a little growth in their social competence, whereby the pre-post-differences were mostly not significant (Wilcoxon-Test). Exceptions were the dimensions of prosiciality and plurality of values, where the reported learning effect became significant.

The findings lead to the assumption that some groups had some days were the positive learning environment (participation and positive experience) went together with small, but existing learning effects. Outstanding roles play the days one (pro-

sociality) and five (plurality of values). Compared to the other days, there are differences apparent: the first day, the students started the intervention motivated, but undiffered. Effects in learning became quite more differenciated during the following days. The last day based on the free and controverse discussion of heterogeneity of people and individual values. After that, the students were asked to present what they had learned over the week in a presentation form of whatever they liked. For this day, several obviously fostering factors came together: the students were personally affected, the room for being creative was given and the topic was easy to understand for everyone, compared i.e. to the willingness to compromise. Here, many students had greater problems to develop solutions for given problems and even to explain what a compromise actually is. Concluding, the evaluation of the didactical-methodological concept and the identified fostering and hindering factors are shortly presented to outline the context.

Evaluation of the didactical concept and identification of fostering factors

The didactical and methodological concept was evaluated by media-based self-reports of the students. requested dimensions were: (1) *topic-related interest*, (2) *didactic-methodologic conception*, (3) *competence support* (extract from the self-determination scales following Deci & Ryan, 1993 and Prenzel & Drechler, 1996) and (4) *context conditions*. The reliability of the scales was good to very good. In the focus of this paragraph stands the question which learning conditions were fostering and hindering. The intervention was valued as rather good. The major part of the students preferred the more practical settings and evalu-

ated them as those where they learned the most. Important were also the clarity of instructions as well as comprehensibility of explanations. Two main findings were that students miss a vocational orientation (*subjective relevance of content*) in the rather general frame of content. Further important findings were that the conduction of an external person (*independence from person*) was experienced as motivating (*fun*) as well as doing something different from conventional teaching (*experience of contrast*). The access to *social experiences* and *social integration* were evaluated rather good in all groups. The *perceived difficulty* and *time-schedule* seemed to fit the students' abilities. Though the concept was complementary to all groups from the micro-cycle 3, there were differences apparent regarding the school environment. For this was also subject to process observations, the made observations were analysed and condensed to fostering and hindering context conditions (Tab.2).

Table. 2.
Fostering and hindering context conditions based on the process observations. Source: own research.

	Fostering Conditions	**Hindering Conditions**
Teachers	Detailed planning Presence in the intervention Interest in intervention Appreciation of students Active design of relationships	Lone fighter mentality Rigid insisting on compliance to rules without (critical) discussion
Students	Willingness to active participation Continuous presence Appreciation of teachers Appreciation of peers	Psychological problems

Teaching	Long-term design of social competence learning environments and concepts Integration of teaching and disturbances Transparent problem-solving Respectful communication	Lack of structure or continuity Predominant forms of problematic communication
Team	Perception of the team as a unit Perception of fostering social competence as common task Common teaching objectives Resouce-oriented perception of students	Lack of identification with the team
Organization	Support by school leadership Provisions of rooms Provision of technical equipment	Lack of time resources to explicitly foster social competence Lack of concepts to foster social competences

The three groups diferred not only related to the conduction process and results, but also in the environmental conditions. The two targeted groups showed better conditions to, firstly, run the intervention and, secondly, lay the foundation for sustainable implementation of the fostering approach. In contrast, the control group combined many hindering factors, especially regarding the teacher-student-relation which appeared to be an important factor in terms of fostering social competence.

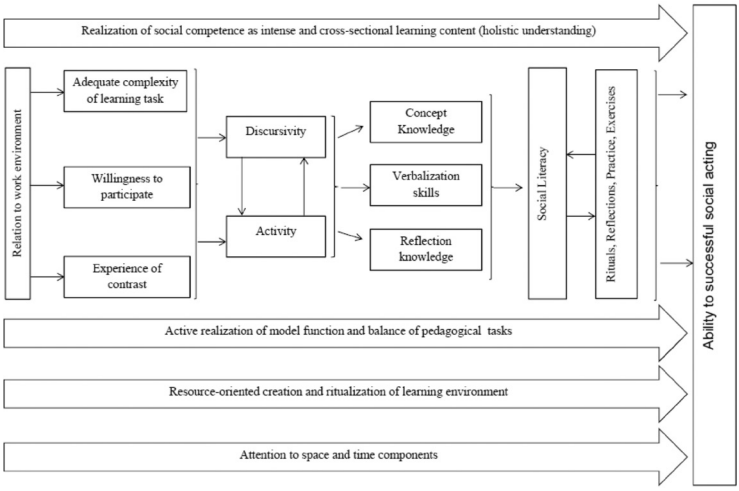
4.1 AN INTEGRATED MODEL OF FOSTERING SOCIAL COMPETENCE IN THE WERKSCHULE BREMEN

Fostering social competence for disadvantaged young people requires didactic specifics which could be identified and elaborated due the iterative structure of the study. The findings were braught together in an area-specific model to foster social competence in the Werkschule which is presented below (Fig. 3). The contents need a *clear relation to work or living environment*. To know, what has to be learned for which reason can give a purpose to the students and raise motivation, the basis for the *emergence of willingness to participate*. Work- and learning tasks have to be oriented in the abilities of the students to balance of support and regulation. Therefore, an *adequate degree of complexity* is necessary. Furthermore, everything that differs clearly from familiar aspects of school seems to be motivating, because it does not directly affect negative school experiences. The targeted production of the *experience of contrast* can be reached through irritation of the students by unexpected actions or remarkable changes of the learning environment. Also important is the change of perspectives on social competence of students: if social competence is seen through the narrow scope of positive behavior during class, resistance might appear, because this aspect often implements rigid standing on rules without understanding subjective triggers.

Moreover, students like to discuss their optinions and moral concepts. Within this study, they appeared to like participating in discussions that tangent topics of individual importance. Their teachers' as well as their peers' opinions are necessary projections surfaces and anchors for moral and value orientation

which itself is fundamental for social responsible actions. *Discursivity*, therefore, is seen as an important aspect in such fostering approaches. *Activity* facilitates the access to learning and positively influences the motivation to learn. Group-dynamic tasks and exercises related to communication and cooperation showed a positive effect. Both, discursivity and activity, are connected through a reciprocal relationship to account to the basical model of social information processing. Planning, conduction and reflection of actions belong together as learning aspects, if the ability to act is targeted.

Figure 3.
Area-specific model to fostering social competence in the Werkschule.
Source: own research.



The realization of work and learning tasks, supplemented by reflexive processes and topic-related discussions lead to *factual knowledge* (knowing and understanding varying aspects of the

learning content), the *ability to verbalize those aspects* (description and expression of mental states and connections between single aspects of factors which work together in social action contexts) as well as *reflection knowledge*. The findings showed that there was only rather poor knowledge and ability of the young people to initiate productive reflection processes. Due to that, reflection is seen as an inherent learning content. In particular, the intervention reached stundents with and without documented prior knowledge. Insofar, the concept succeeded in fostering language ability regarding social competence what is hereinafter called *social literacy*. It means the ability of the young people to receive stimuli of a social situation and transform them to Information (Straka & Macke, 2005). Not before young people understood what they receive they can go on considering adequate actions. All learning processes lead to increasing ability to social action, resp. social competence. Important supporting context factors are *time* (to develop stable changes in personality and individual possibilities for action), intensive work and learning units as well as the interdisziplinary integration of social competence in class (social competence as *intense and cross-sectional learning content*), a positive designed learning environment and, finally, the teachers' model function as chance and challenge in fostering issues.

5. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Concluding words apply to two aspects: practical output of the study and research desiderata. Following the existing requirements towards design-based research it is clear that each research

project must lead to a plactical output. This is consequent, for these types of research designs arise from practical problems and target the development of applicable solutions. Within this study, a didactic-methodologic concept was developed and tested. The final and revised version includes a theoretical foundation, learning goals, recommendations regarding didactical structure and the choice of methods and, moreover, empirical-based knowledge about how to implement the intervention and related factors that may lead to sustainable change. Two further steps seem to be important: firstly, the results of the study have to be published to the teachers. Secondly, the teaching staff might need further education on a team-based approach.

This leads to the next question which is not only important for the Werkschule, but for all educational contexts: How is the social competence of teaching staff constructed? Which aspects of social competence do teachers need and how strong is their need to further education?

Moreover, the construct of social literacy needs to be theoretically developed and proven as a possible pillar of basic education, next to literacy and numeracy. The neccessity of the ability to express inner experiences to reach emotional regulation is widely accepted (Hascher, 2005; Schonert-Reichl & Lawlor, 2010). It is also proven that successful emotional regulation effects learning motivation in a positive way (Pekrun & Schiefele, 1996). Emotion itself is discussed as referred to the construct of social intelligence (Kang, Day & Meara, 2006) which effects the cognitive aspect of emotional and social issues. Due to the close itrapersonal and interpersonal connection of emotional and social aspects it becomes clear that knowledge and language abilitiy in the field of social interactions are an important condition

to perceive, understand, plan and evaluate social actions. The ability to express one's mental state, situational targets and react linguistic adequatly represents an important part of social problem-solving which happens to be a core-element of the social competence discourse (Merrill et al., 2005). Next to linguistic issues arises the question of cultural aspects represented in specific understandings of social competence. The adequacy of acting must be seen in the context of interculturality which is becoming more and more important not only in the *Werkschule*. The discussion, if situational requirements are legitimate (i.e. in work environments, families, peers, school context, etc.) is of high relevance, due to the cultural diversity.

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A Case Study About the Innovative Approaches of a German Transplant in China: Make Up for Deficiencies in the Prevailing VET System

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Abstract: This study draws attention to how German transplants in China respond to localized shortages of skilled workers in a conurbation of German manufacturing enterprises near Shanghai, China. Deficiencies in the vocational education and training (VET) system and poaching of skilled workers by other enterprises are the two major challenges in the local labour market of this area. The focus of this study is to examine the innovative coping strategies of different types of enterprises that are applied in order to achieve these challenges. Methodologically, the study design is based on case study research conducted by elements of on-site expert interviews, documentary analysis and inspection of the shop-floors. Cultural historical activity theory by Engeström is used to analyse the innovative appraoches detected in the research field. The findings of this study show a range of innovative approaches within German enterprises. Depending on the needs and types of enterprises, we find linkages between the companies internal and the local external labour market as well as engagements with local institutions and forms of cooperations to meet their marketoriented requirements.

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Keywords: China; Vocational Education and Training; VET; German Transplants; Skill Shortages

1. PROBLEM STATEMENT

Over the past decades China has developed impressively in political, social and economic levels. From an economic point of view, due to lower labour costs that provided important local advantages in the mid 1990s, a large number of foreign invested companies moved their production plants to China. As a result, China gained the status as "elongated workbench" (Schwägermann, 2016, p. 166) and has become one of the leading destinations for foreign direct investment at the same time (The World Bank, 2016).

Today, Germany is one of the ten major investors and about 5.200 German companies are currently situated in China. But the situation has changed and lower labour costs are no longer one of the key advantages for foreign invested companies to produce in China. Instead, those companies operating in China have a high demand to achieve local adaption and innovation for their products to affect conditions of competition (German Chamber of Commerce, 2015). As a result, as evident in the case of the mechanical engineering sector, a growing number of German companies are pursuing in the field of research and development. This development is accompanied by an increasing demand for better-skilled workers who can take part in different stages of production processes and that are able to bring forward the improvement of product quality and productivity (Zhao, 2013; Deitmer et al., 2013; Gessler, 2017). But in this

respect, Chinas development from a social point of view is hindering. The situation on the labour market is difficult and a lack of workers in terms of both qualitative and quantitative is prevalent today (Li & Sheldon, 2014; van der Burgt et al., 2014; Pilz & Li, 2014; Zhao, 2013).

The definition of the term *shortages of skilled workers* are inclined towards Green, Machin and Wilkinson (1998) who view shortages as reflecting employers' difficulties in securing sufficient workers with appropriate skills. These shortages can either go along with employers having difficulties to fill job vacancies or with skill gaps within an employer's existing workforce. Li and Sheldon (2010) extend employee poaching by other employers as third consequence resulting from shortages of skilled workers. The quantitative lack is reflected by low numbers of graduates from vocational schools which is in turn deeply anchored in the Chinese culture (Zhao, 2013). Especially amongst parents, the academic track is dominating the upper educational system and great efforts are undertaken to intend academic careers for the parents mostly one child, leading to a low number of graduates from vocational schools (Barabasch, Huang, & Lawson, 2009).

The gap of skilled workers in quality however can be attributed to an imbalance of practical and theoretical training that is relevant both in vocational schools and academic tracks (Pilz & Li, 2014). Education in China clearly focuses on full-time schooling but work-related skills and knowledge are neglected tremendously (Deitmer et al., 2013). As consequence, this is manifested in a disconnection between the design of vocational school and academic track courses and practical employment needs (Pilz & Li, 2014). This results in a mismatch between the employees' skills-levels and expectations by the companies.

Zhao (2013) notes that in order to approach this problem, there is a substantial need for cooperations between Chinese companies and vocational schools and colleges in order to promote and standardise laws, regulations and operation mechanisms. Also from the governmental side, efforts are made to strenghten the vocational track which has been falling behind in the past (Deitmer et al., 2013). Laws and regulations given by government are however missing and the responsibility for vocational education is vague. Some Chinese companies even see the responsibility for vocational education and training (VET) not by them but by the government alone and are thus interested neither in the involvement of VET nor in cooperations with vocational institutions (Zhao, 2013).

It is precisely this field of unresolved tension in which German transplant companies[22] are operating. On the one hand there is a high demand for skilled workers in order to fulfil high product standards and to pursue research and development, but at the same time the labour market does not supply these workforce, neither in quality nor in quantity. It therefore requires a number of strategies and measures for firm-based qualification. "Workforce Skill Formation and Innovation at the Shop-floor Level in China", financed from central funds by the University of Bremen, is a three-year explorative project, whose object is to investigate the strategy and practice of skill formation in German firms at the shop-floor level in the international context of firms operating in the region of Shanghai, China (Gessler & Freund, 2015). This project builds the framework to investigate the central research question:

22 *Transplant companies* are companies that have set up facilites abroad. In this case, the target country is China.

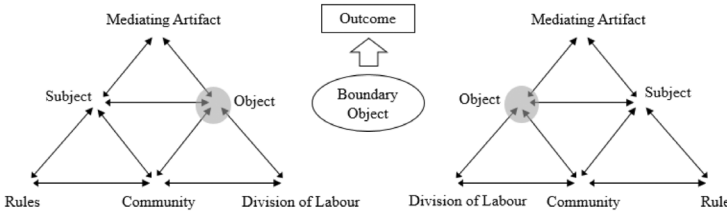
How do German firms with production site in China foster and assure the necessary skills level of their Chinese employees for production and innovation when a vocational education system according to the German model does not exist?

2. THEORETICAL APPROACH

Activity Theory research aims to analyse different types of activities as well as the learning and developing process of acting subjects who shape an activity by their actions (Geithner, 2012). One of the models that were developed in order to make an activity conceptually tangible is the model of *cultural historical activity theory on expansive learning* by Yrjö Engeström (1987). This theory builds the basic theory for a concept that has become an explicit part of Engeström's activity theory, the concept of *boundary object* (Akkermann & Bakker, 2011). This concept is constituted by *boundary* and *object* whereas boundaries can be seen as socio-cultural differences leading to discontinuity in action or interaction, prevalent however is a common purpose that is relevant for one another in a particular way (ebd.). Boundaries between groups are formed by common objects through flexibility and shared structure and serve as stuff of action (Star, 2010). Objects are those objects that:

> both inhabit several intersecting worlds and satisfy the informational requirements of each of them. . . . [They are] both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual site use (Star & Griesemeier 1999, p. 393).

Figure 1:
Boundary object as connection of two activity systems.
Based on Engeström, 1987, p. 78.



For this research paper, the concept of boundary object as extension of the cultural historical activity theory of expansive learning by Engeström (1987) is suggested as theoretical framework. Engeströms approach seems to be suitable as it considers the two-way relationship of working and learning as well as the connection of individual and collective development, whereas the concept of boundary object indicates how artifacts can fulfil a specific function in bridging intersecting practices.

3. METHODOLOGY

This exploratory research was conducted by *grounded theory* methodology which is a "qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon" (Strauss & Corbin, 1990, p. 24). This approach is well suited to investigate the above mentioned research question as it fulfils the requirement of a methodological approach that mitigates the uncertainties associated with international comparison studies. Considering the fact that the case study is undertaken in a new area of knowledge

where outcomes are difficult to predict, this approach offers the opportunity to construct a new theory through the analysis of data which were empirically gained. Furthermore, it differs from traditional models of research, in which an existing theoretical framework is used to examine whether or not the collected data does or does not apply to the phenomenon of the study.

Data collection was conducted between 2014 and 2016 in the autonomous city Suzhou, Jiangsu Province, in which in total around 17.000 foreign enterprises are to be found (BMBF, 2013). Within Suzhou we focused on two economically advanced areas with a local labour market perspective and a high concentration of German transplant companies.

The first research site is Suzhou Industrial Park (SIP) in which 5.000 foreign enterprises are located (BMBF, 2013). 25 per cent of these foreign enterprises have their headquarters in Europe and around 200 enterprises are German. A sector analysis that we conducted in 2014 shows that around 25 per cent of all German enterprises in SIP are assigned to the sector manufacture of machinery and equipment which makes up the largest proportion of all sectors and represent the focus of interest for our empirical approach. The second research site within Suzhou is Taicang German Industrial Park in which 1200 foreign transplant companies are to be found, around 220 of them are German owned. As well as in SIP we focused our data collection in Taicang on German transplant companies with sector in manufacture of machinery and equipment.

All German companies within this sector were contacted via e-mail. Those companies that expressed their willingness to be available for an interview by answering our e-mail were selected for the purpose of investigation.

Data were collected in four different German transplant companies situated in SIP as well as in four with production site in Taicang through expert interviews with CEOs and human resources and/or training managers. In these eight companies, in total 13 interviews with different expert persons were conducted. On average the interviews lasted around two hours. To achieve comparability, the interviews were conducted semi-structured and were recorded and transcribed for evaluation purposes. The data analysis procedure followed the grounded theory approach formulated by Strauss and Corbin (1996). In contrast to the classical grounded theory approach, originated by Glaser (1965) this advanced developed approach by Strauss and Corbin (1990) allows theoretical sensibility by analysing categories, codes and coding in a way of abductive reasoning. These different steps are repeated until it becomes possible to describe and explain the phenomenom that is to be researched. In this context, the attention is directed to the theory's suitablity as frame for the data collected. The positive outcome of this fluent exchange between theory and data is a reconceptualization, based on a crative leap.

4. RESULTS

First empirical findings allow to give answers to the following questions which set up the focus of this article:

- What do we learn about cooperations between German transplant companies and vocational schools built-up to solve the problem of skill shortages?
- What kind of linkages are prevalent between the compa-

nies internal and the local external labour market to meet the companies' marketoriented requirements?

Regarding all explored issues would go beyond the scope of this article. Therefore, for this research paper, we focus on two phenomenas which examine different perspectives of how German transplant companies try to foster and assure the necessary skills levels of their shop-floor level employees.

4.1 EXTERNAL PUBLIC COOPERATION

In Chinese provinces that have a huge demand of skilled labour and thus for vocational learning tracks, two reform concepts have emerged in the past years, *production schools* and *practice firms* (Deitmer et al., 2013). Whereas in production schools, production areas for training purposes are build-up within vocational schools, in practice firms artificial practice companies are set up, aiming to give insights into the working environment by simulation (ebd.). Although these two reform concepts are the results of successful initiatives made by vocational schools in cooperation with Chinese enterprises, these reform concepts cannot replace a system of dual VET (Gessler, 2017; Gessler & Howe, 2015). Deitmer et al. (2013) see the problems mainly in a distance that is too huge between vocational training and the job market and formulate the urgent need for the implementation of a systematic and well-structured vocational training programme which is executed in cooperation of both sides: companies and vocational schools.

The answer for such a concept might be given by a form of cooperation that was built-up by a German transplant company and a vocational school, both situated in German Indus-

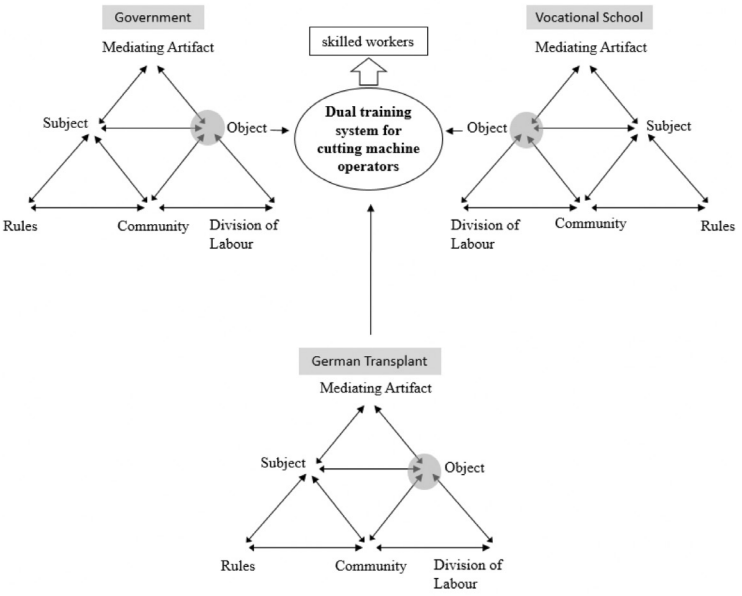
trial Park, Taicang as well as local government as third cooperation partner. The transplant company has its headquarter in Germany and decided to set up their production site in Taicang in 2003 as one of the first companies at all. This gave the company the status as market pioneer, contributing tremendously to the regions attractiveness and target for numberous German transplant companies that followed since the beginning of this production site. This company, representing a case in this study, is a family-owned enterprise with 500 employees, producing filling machines and packaging for beverages.

As particular challenge, in addition to the localized shortages of skilled workers in quality and quantity, this company has a continuous and high demand for qualified cutting machine operators. This target group is highly restricted on Taicangs local labour market as the demand for cutting machine operators exceeds the supply in this industrial park fundamentally and those operaters with job-experience are additionally often being poached by competitors.

As innovative recruiting and qualifying strategy, this company found its solution by establishing an external public cooperation in order to continously supply their demand for cutting machine operators graduates by a dual training system. It is the companies decision whose students are selected as apprentices in the dual training classes. In consideration of the societal and cultural background of the Chinese population, the company mainly chooses teenagers as apprentices that are rooted to the region of Taicang in order to prevent migration of those high skilled workers after graduation. The German transplant company and the local government build up a public cooperation in which the government gives financial support to vocational

schools. Those vocational schools in turn convey knowledge on a theoretical basis, whereas the practical transfer of knowledge is trained by and in the transplant company.

Figure 2:
External public cooperation imbedded as activity theory model.
Source: own illustration.



Imbedding the phenomenom of *external public cooperation* as activity theory model, it proves, that the dual training system for cutting machine operators functions as boundary object (see chapter 2: theoretical approach). The transplant company, as well as the local government and vocational school share the common objective of finding a solution to compensate the continously high demand for cutting machine operators. The

dual training system was built-up in cooperation of all subjects involved and can be classified as boundary object with *skilled workers* as outcome. Although the parties involved share the same objective, the intention and interest for cooperation differentiates from each other. The German transplant company initiated the cooperation as it continously requires shop-floor workers with suitable skills and practical, work-based experience that is highly restricted on the local labour market. Therefore, the German transplant company is privileged to conclude take-over agreements with trainees of those dual training classes.

Local government however has the intention of improving the situation on the whole local labour market by giving financial support to the vocational school. Graduates who are not taken over by this German transplant company are available for the labour market as highly skilled worker both theoretically and practically. Hence the phenomenom found can be described as a external public cooperation in apprenticeship that was built-up with the objective to foster the necessary skills level of Chinese shop-floor workers as a vocational education system according to the German model that has not been existing until that.

4.1 INTERNAL CROSS-BORDER COOPERATION

When companies operate in international context, the question comes up, how home and host country effects inluence the companies' human resources strategies and practices. This is especially relevant when transplant companies operate in countries that are geographically diverse, populous as target country, boasting ancient local traditions, and at the same time have uneven levels of recent capitalist development and are experi-

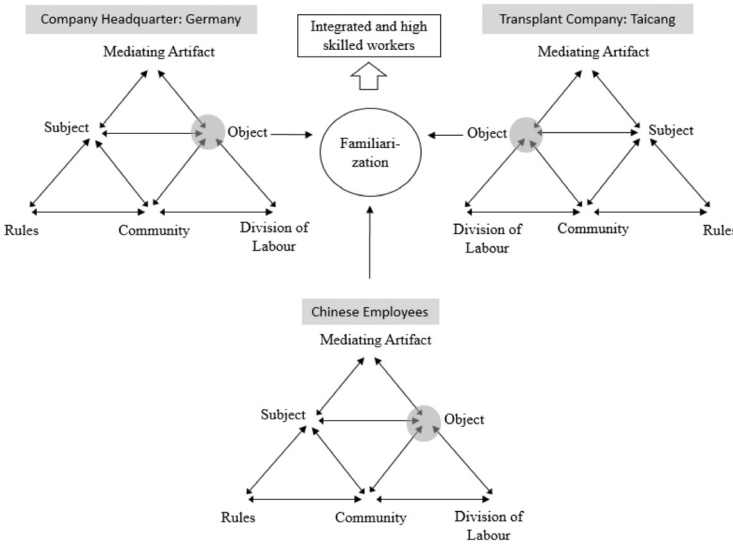
encing decentralization of governance (Li & Sheldon, 2010). These characteristics are valid for German transplant companies operating in China. Therefore, HRM strategies need to take account of local labour market effects of very different local political, cultural and institutional patterns.

With regard to those patterns, the German transplant company that acts as case in this study, implemented an *internal cross-border cooperation* as innovative recruiting channel. The respected company developed this recruiting channel after they suffered shortages of skilled workers over a longer period. The programme was designed in consideration of cultural incentives and values and is therefore implemented at the production sites in China exclusively.

The innovative recruiting strategy is set up by three steps. As first step, the company takes advantage of their headquarters' site in Germany that is a university town. Chinese engineering students doing their university study in Germany are offered university internships in the headquarter. This allows the company to get in contact with high skilled, young students. As second step, after those students graduated from University, the company offers those former trainees a contract in their headquarter in order to benefit from practical and theoretical knowledge gained during their university internship. Besides that, familiarization is strenghtened and company-specific cross-location knowledge is gained in a wider range. As third step, the company offers those Chinese employees a job in the production site in Taicang. This is an attractive offer for both, the employee with Chinese background and the company itself. On the one hand, the company benefits from high skilled workers that are immediately ready for operating in the productioin and at the

same time those employees have company-specific, cross-location knowledge. On the other hand, the company supports the Chinese employees' tendency to move back to China after gaining international experience that is favourable for a strong commitment between the company and employees.

Figure 3:
Internal cross-border cooperation, embedded as activity theory model.
Source: own illustration.



Imbedding the phenomenom of internal cross-border cooperation as activity theory model, it proves, that the company's headquarter as well as the transplant company in Taicang and the Chinese employee itself share the common objective that is *familiarization*. It thus functions as boundary object (see chapter 2: theoretical approach) which connects the three activity systems. The intention and interest differentiates from each other.

The company conceptualised and implemented the programme as it is its interest to find and hire technically high skilled manufacturing workers with cross-location knowledge. However, the Chinese employees interest is to gather work experience abroad and to return to their home country with attractive working conditions being familiar with the companies products and working processes.

Although the intentions and interests are different, the three parties are connected by their common objective familiarization which functions as boundary object. As result, the outcomes are *integrated and high skilled workers.*

Hence the phenomenom found can be described as innovative business-related strategy that was implemented with the objective to find, hire and bind high skilled Chinese workers in the companies' home country for the shop-floor in the host country.

5. CONCLUSION

The two phenomenoms presented in this research paper were selected as they are good examples of innovative strategies that were initiated by German transplant companies in China with the objective to foster and assure the necessary skills levels of their shop-floor workers for production. From this study we learn that cooperations are not only essential to develop and implement solutions to foster and train highly skilled shop-floor workers, but that cooperations are also necessary to assure those employees for a company.

The outcomes of those external and internal cooperations were constituted by imbedding those forms of cooperations into activity theory models and by identifying boundary objects.

For further research, a broader range of cooperative phenomenoms could and will be analysed according to this scheme. The phenomenoms presented are only two phenomens among many others that were implemented by German transplant companies that are acting in China; in a context, that is neither restricted nor pre-defined. Hence, this study contributes to a deeper understanding of local labour market effects influencing the human resources strategies and behaviour of German transplant companies operating in China. Exactly in this context there is both the need and the possibility for the implementation of innovative strategies.

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SECTION V:

VET, APPRENTICESHIP AND ADULT LEARNING

Apprentices Social Integration in the Work-Group and Reflection as Key Factors for a Successful Learning in VET

Christof Nägele*, Patsawee Rodcharoen

Abstract: For most companies, working teams play a crucial role in its success. It is therefore important that apprentices get integrated in the team. In this way, apprentices gain access to the shared knowledge and understanding of work-related practices, methods, challenges, and goals which is a base for individual learning and joint progress. Starting to work in a team means to learn about the explicit and implicit shared understanding of the team and adapt to it at the start. This is a demanding task, especially so in this case as the newcomers have little to no prior job-related knowledge and no experience in working in a team within a company. We will discuss the crucial role of the apprentices' social integration in a team as a mandatory condition to gain access to knowledge, social conventions and other resources. Positive social integration will partially depend on the apprentices' social skills and ability to reflect on the adjustment during organisational entry. The data of this study stem from an in-depth pilot study with a small group of apprentices (N = 31). High-quality VET depends on the teams and their ability to socially integrate the newcomer, as well as the apprentices' abil-

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ity to reflect on the adjustment process. This paper focusses on the role of the apprentice.

Keywords: quality of VET, social processes, reflexivity, learning

1. INTRODUCTION

The transition from school to work leads to significant changes in the adolescents' lives. Apprentices are employed by a training company which brings different challenges than being a pupil at a pre-vocational school. One implication is that the way to learn changes dramatically. An apprenticeship contract is a work contract that obliges the apprentice to work productively in the company alongside other employees and at the same time obliges the company to educate and train the apprentice. Learning at a workplace and at (pre-vocational) compulsory schools differ in many ways. For example, it is the professional obligation of any teacher to support all pupils in their learning, independent of her or his talent and motivation at school. Optimal learning environments should be provided to fit the status of a pupil's capacities and competences. In contrast, learning at the workplace in an apprenticeship relies to a much greater extent on the individual engagement and self-reflexivity of the learner. Also, social processes within the work team differ from those within a school class collective.

Successful adaptation in this context relies on the activities of the training company and predispositions and skills of the learning person. In this paper, we will focus mainly on the role of the apprentice who is required to understand the

specificities of learning at the workplace and new strategies needed for successful learning. Pre-vocational schools can make an impact on this transition by fostering skills to facilitate this process. Hence, after describing what constitute the changes in the new learning environment, the questions to be dealt with in the present paper are: a) "How can adolescents foster their workplace learning?", b) "How can companies and work teams support an apprentices learning?", and c) "How can schools help their pupils to be better prepared for learning at the workplace?".

We will report on a pilot study of apprentices' social integration during organisational entry in order to explore predictors of the apprentice's social integration during organizational entry and on how to support this process as a precondition for learning.

2. THEORY AND METHODS

2.1 THEORY

First, we will describe workplace learning. Second, we will discuss social integration as a key factor in workplace learning. Third, we will discuss the role of the adolescents, pre-vocational, compulsory schools as well as training companies in facilitating learning at work to support social integration. Fourth, we will give brief information on the transition from school to work in Switzerland.

Workplace Learning

What are the main characteristics of workplace learning? And how does workplace learning differ from learning at compulsory school in a pre-vocational setting? Workplace learning can be characterised as follows: First, socialisation and learning in an apprenticeship is situated in a real-life situation and is a social learning process (Wenger et al. 2002) with the apprentices being responsible to engage and contribute reliably to the work at hand. Second, the transmission of knowledge and skills from the insiders to the apprentice is grounded on a positive relationship with the workplace trainer and new colleagues (Masdonati & Lamamra, 2009). An apprentice will only get the information needed when the insiders accept she or he and when they are willing and able to share their expertise with the novice. Third, most workplace trainers state that they have a constructivist conception of learning. In practice, the trainers expect their apprentices to work self-reliant on demanding, complex and real tasks for clients from the beginning of the apprenticeship (Baeriswyl, Wandeler, & Oswald, 2006). Learning at the workplace is "learning-in-action" in an "action-in-practice"-context, and is both an individual and a social process (Illeris, 2003). If learning is understood as an active, continuous process, unfolding in a multitude of learning venues and with many learning opportunities as part of our daily lives (Ashton, 2004), it makes little sense to distinguish non-formal and formal learning. Learning and understanding arise from a reflected practice either at the vocational school or in an everyday work situation, as described by sociocultural theories (Lave & Wenger, 1991; Vygotsky, 1978). The sociocultural approach emphasises the importance of the context (Watson & Emery, 2010) but fails to explain individ-

ual and group level processes that mediate learning in specific contexts such as the workplace. In the sociocultural conception, learning is closely linked to interaction and participation in a meaningful context (Eberle, Stegmann, & Fischer, 2014). To describe, explain and understand learning at the workplace, we need to know not only about structures, norms, values and practices (Manuti, Pastore, Scardigno, Giancaspro, & Morciano, 2015), or social structures (Wenger, 2008). We also need to know how personal characteristics and individual psychological processes promote learning at the workplace.

Workplace learning can be seen through the lens of socio-constructivist theories. According to socio-constructivist learning theories, knowledge and skills are lodged within communities. Meaning and understanding are achieved through historically and culturally situated interactions and exchange among people. The construction of understanding relies on social processes with language as a means of exchange. Also, the truth is constructed in discourse within the community. And finally, there is the strong assumption that individual behaviours and learning are fully determined by the situation (Gergen, 2002; Gergen, 1985). Within this context, it is defined how things are done, interpreted, and also not to be done. The individual's learning is not of focal interest in social-constructivist theories. In socio-constructivist theories, the learner can only be active as part of the social system learn based on the premises given by the social system. Social-constructivism claims that learning is solely social, a position which is arguably hard to maintain by the look at the individual factors that are involved in learning. Learning at the workplace is both, a social and an individual process (Illeris, 2010). The active role of the learner is emphasised

in constructivist learning theories. The learner constructs her or his subjective representation of the social or objective reality. Both theories are hence essential landmarks to understand workplace learning. First, workplace learning is embedded in socially constructed real work-life situations. This defines how things are done. Second, the learner or the apprentice needs to actively construct her or his representation of the situation, in accordance with the representation of the workgroup. Participation per se does not guarantee to learn at work. For a successful learning at work, it seems crucial that theory and practice are tightly linked, even if these two elements are assigned to different learning venues (e.g., training company and vocational school) (Höpfner, 1991). Furthermore, learning involves not only overt activities but also cognitive processes (Hacker & Sachse, 2014). It is the continuous interplay of action and reflection in specific social situations that lead to learning at the workplace. In this way, individuals and groups develop personal and shared knowledge, skills and abilities. These activities and the reflection can be facilitated or hindered by the job design in the company, e.g., by allowing apprentices to develop own and divergent solutions for specific problems (Dehnbostel, Lindemann, & Ludwig, 2007; Nägele, 2013).

Function of Social Integration

Impaired social integration limits access to relevant knowledge. In this paper, the focus lies on learning in an apprenticeship. Nevertheless, we think that social integration also plays a crucial role in adult's workplace learning. We will argue for why social integration is a key factor in workplace learning and how newcomers only get access to knowledge and skills they need

for their learning if they succeed to get integrated by the insiders. The social integration of a newcomer affects positive outcomes such as satisfaction, commitment, the intention to stay and performance. The onboarding phase of the newcomers is a critical phase to make social integration work. As a newcomer, becoming accepted by insiders of a company is an important proximal outcome of the organisational socialisation, in addition to achieving role clarity or performance self-efficacy (confidence in one's abilities to do the job) (Bauer & Erdogan, 2012). Adjustment is a mutual process, involving both the newcomer and the insiders. If the activities and information seeking of a newcomer are backed up by efforts of the insiders to help them adjust, for example by offering feedback and support, there is a higher probability of a positive adjustment (Kammeyer-Mueller, Wanberg, Rubenstein, & Song, 2013). Strong interpersonal relationships help apprentices to better exploit their potentials (Roberts, Dutton, Spreitzer, Heaphy, & Quinn, 2005). Such relationships are built on trust, which can evolve when insiders show goodwill towards newcomers, rather than if they are treated as inexperienced newbies or as targets of bad put-ons (Schaubroeck, Peng, & Hannah, 2013).

Becoming socially accepted and integrated is especially critical for newcomers without prior organisational or work-related experiences, which is the case for apprentices. These newcomers lack a common frame of reference to evaluate their social and task performance at the workplace. Although they were trained to assess their knowledge, skills, and abilities in the compulsory school context from kindergarten up to grade 11, being educated and trained within an apprenticeship in a training company is an entirely new situation for them as the learning is different

and becomes tool and action related (Resnick, 1987). Also, it is embedded in a different social environment.

Apprentices social and personal competences become essential in the transition from school to work (Neuenschwander & Nägele, 2014). For this reason, training companies ask their apprentices for traditional virtues, as, e.g., being punctual, reliable, or adaptable (Stalder & Stricker, 2009; Stalder, 2002). These virtues and transferable competences are prerequisites for a positive social integration during organisational entry.

Supporting Social Integration

The social integration can be improved by measures affecting pre-entry variables, actions of the company and individual factors. In this paper, we will focus transferable skills developed at pre-vocational, compulsory school and the individual social self-reflexivity.

Pre-vocational school. Compulsory schools are already heavily engaged in coaching and supporting pupils in the transition from school to work on the upper secondary level (Nägele & Schneitter, 2016). However, the focus is on the pupils' vocational orientation and on finding a good fitting apprenticeship after school. As workplace learning relies on social processes, the school could further contribute by strengthening transferable competences needed for social integration. Arising questions are: What are the relevant transferable competences to support workplace learning through social integration? And how can these competences be trained within a learning environment in a school which differs significantly from the learning environment in a company? Although any adjustment to a new job situation also depends on pre-entry factors (Kammeyer-Mueller & Wanberg, 2003), a direct transfer of knowledge, skills or

attitudes from school to work seems to be not plausible (Nägele & Stalder, 2017a). Apprentices need to recontextualise their school-based-competences within the new work context (Taylor, Evans, & Pinsent-Johnson, 2010). Two facets seem important in this matter: Vocational orientation and the development of transferable skills.

Vocational Orientation. Usually, better fitting apprentices to the work and organisation tend to better adjust to the new situation, both in pace and magnitude (Erdogan & Bauer, 2005; Nägele & Neuenschwander, 2015). This signifies the meaning of the vocational orientation and -choice in the lower secondary level (Nägele & Schneitter, 2016) as perceived fit can be achieved during vocational orientation on the lower secondary level. Fit can contribute to a good start of the apprenticeship as learners are more motivated to do something which meets their interests. Nevertheless, the risk exists that apprentices with a high fit do not get ideally socially integrated into the workgroup (Nägele & Neuenschwander, 2016), which could be partially explained by missing learning opportunities within the workgroup.

Transferable Skills. Transferable skills can be technical and non-technical and help a person to act efficiently in different real-life situations in a new context. Non-technical transferable skills are, e.g., social skills or problem-solving skills. The development of these skills is part of the teaching content at the compulsory school. Important questions are, however, which skills are transferable and how they can be taught and trained to supply learners and students with the skills needed for their future employment (Nägele & Stalder, 2017a).

Training Company. The onboarding, socialisation and social integration are highly influential for the apprentice's acquisition of information about the company, learning, performance, satisfaction and/or commitment to the organisation and vocation (Saks, Gruman, Saks, & Gruman, 2012; Ostroff & Kozlowski, 1992; Maanen & Schein, 1978). It seems important that both the training companies and the new apprentices get to know one another through high-quality interactions (Korte, 2010; Wanous, Poland, Premack, & Davis, 1992). Despite the recognition that relationships with insiders facilitate socialisation, little is understood about this aspect of the socialisation process (Morrison, 2002). The perception of being supported by insiders has a direct positive effect on learning on the job, learning of work-group norms, and role innovation (attempts of the apprentice to adjust his/her role to the organisational demands). This effect is moderated by the organisational socialisation tactics of the training companies (Perrot et al., 2014). This is one way of how training companies can actively contribute to positive outcomes through their onboarding and socialisation tactics. Important factors that enable workplace learning are the type of work activity, support, instruction, as well as interaction. The learner can only be an active agent of her or his learning if the work allows for this kind of activity. Important aspects of the job design are, e.g., the scope of action, task identity (Dehnbostel, 2008; Sonntag & Stegmaier, 2007).

Apprentice's Self-Reflection. Reflexivity is the process of self and social questioning. People are asked to "stop and think"while stepping back from their momentary activities. Reflexivity can be either an individual or team-based collective process

(Edwards, Ranson, & Strain, 2002). Reflexivity is an inner communication to relate oneself to the context as well as the context to oneself and is, as such, a private activity (Archer, 2007). Reflexivity instructions can be very diverse and specific to the topic (Finlayson, 2015). Often, reflection starts with a description of the situation, followed by an interpretation of that situation and the development of measures to take to handle a similar situation in the future successfully.

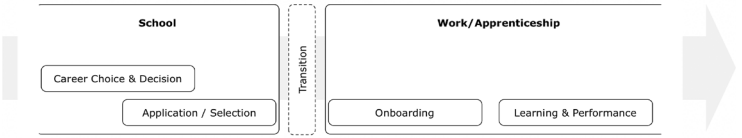
Task reflexivity refers to real tasks, and social reflexivity refers to social processes within the workgroup (Swift & West, 1998; Facchin, Tschan, Gurtner, Cohen, & Dupuis, 2006). The focus of reflecting on an apprentice's social integration lies therefore on social processes. Thus, one objective is to support the process of recontextualization of social skills acquired in the school context through a systematic and guided reflection to fit them to the new context. It is an intervention that aims at developing new competencies during organisational entry.

Transition from School to Work in Switzerland

Two third of the pupils continue their education on the upper secondary level directly either within vocational education and training (2013: 44%, www.bfs.admin.ch) or by attending a school-based education (2013: 27%). 95% of this group finish their education (2012: 72% in vocational education and training and 23% in general education). There is almost no chance for an adolescent in Switzerland to not attend further education and training on the upper secondary level, even if it is not at all mandatory by law to do so. There seems to be an unchallenged consensus that all adolescents need to complete upper secondary education. The transition from school to this further education is

prepared for on the lower secondary level (Nägele & Schneitter, 2016; Stalder & Nägele, 2011). The topics covered refer to "career choice and decision", and "application and selection". Vocational orientation on the lower secondary levels usually starts at grade 9 and lasts until grade 11. Schools and teachers are highly engaged in guiding their pupils in this process. This is an essential basis for the apprenticeship entry. The quality of the school-based vocational orientation impacts the onboarding, learning and performance of the apprentices (Nägele & Neuenschwander, 2014). The apprentices start their apprenticeship based on the competences mainly acquired at school. The key themes in the transition from school to work are outlined in Figure 1.

Figure 1.
The transition from school to work, adapted from (Nägele & Stalder, 2017b).



The transition from school to work is a normative transition that is prepared for at school. Most adolescents follow a vocational path by attending company based apprenticeship.

2.2 METHODS

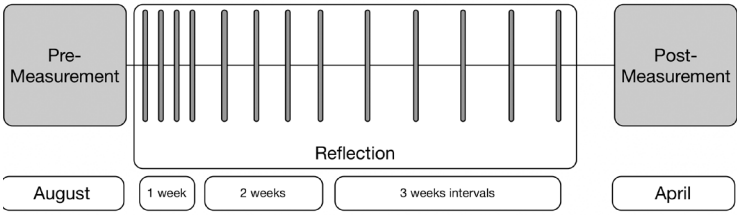
Pilot Study

Design and procedure. The pilot study intended to test the application of various instruments on transferable competences and to explore the feasibility of a procedure aimed to improve the

apprentice's social integration through induced self-reflection during the first eight months at work in a pre-/ posttest design (c.f., design in *Figure 2.*). Furthermore, it means to describe how participants accepted the reflexivity instruction and how these engaged in the weekly, two-weekly, and three-weekly invitation to reflect on their social integration.

The questionnaire was personalised web-based questionnaires. An invitation was sent to the work email address. Also, reminders were sent out regularly. A short questionnaire induced the reflection. The invitation to reflect was also sent by email, one day before the reflection should have been done at the end of a week of work.

Figure 2.
Design of the pilot study. The description of the weeks refers to the intervals between each social reflection sessions (= grey bars).



Participants. The pilot study was conducted with one group of apprentices (age +/- 17 years) within one company (construction business and poly mechanics, all male). In the beginning, 31 apprentices were asked to participate in the study. 24 initially agreed to take part and completed the entry questionnaire. During the eight months, however, only 12 stayed on track and regularly reflected as instructed. The apprentices

were at the beginning of their first of three to four years of apprenticeship. At the end of their first week after the company entry, the apprentices were informed of the project and were invited to participate and were free to opt out any time during the study.

Instruments

Transferable Skills – Social Skills. We adopted a self-assessment instrument developed within the school context (primary and lower secondary level) from Jurkowski and Hänze (2014), which is theoretically founded on work of Kanning (2002; 2003) and his instrument on measuring social competences in adults (Kanning, 2009). The focus of this instrument is on social competences that help to manage social interactions successfully and to establish high-quality social relationships (Rose-Krasnor, 1997). These people-related skills are vital in work settings (Greatbatch & Lewis, 2007). We adapted the items of Jurkowski and Hänze (2014) to fit the situation in an apprenticeship, basically by changing specific terms, e.g. "classmates" to "team members", or “class” to “workgroup” etc.

The 12 constructs in the questionnaire were perspective-taking, prosocial behaviour, openness, active listening, readiness to compromise, self-related social competence, finding friends, assertiveness, emotion regulation, the perception of others, self-control, and self-awareness (for descriptive statistics, see Table 1).

Table 1.
Descriptive statistics of social skills based on Jurkowski & Hänze (2014), entry measures

	N	Mean	Min	Max	SD
Perspective taking	23	4.06	3.00	5.00	.489
Prosocial behavior	23	4.19	3.33	5.00	.549
Tolerance	23	4.22	2.50	5.00	.720
Active listening	23	4.07	3.00	5.00	.609
Readiness to compromise	23	4.11	3.00	5.00	.583
Self-related social competence	22	3.82	3.00	5.00	.586
Finding friends	23	3.87	2.33	5.00	.804
Assertiveness	23	3.78	2.60	5.00	.549
Emotion regulation	23	2.94	1.83	5.00	.880
People perception	23	3.73	1.67	5.00	.687
Self-control	23	3.75	2.67	5.00	.544
Self-awareness	23	3.83	2.40	5.00	.795

Social Reflection. The social reflection is based on three questions: a) "How has the social integration progressed so far?", b) "What is the current state of your social integration?", and c) "How will the social situation develop within the next few days?". The questions remained the same during all eight months. The apprentices responded by typing text in an open, unlimited text field on either their mobile phone or other devices (e.g. personal computer, tablets).

Quality of Workplace Learning. Three indicators were used to describe the quality of workplace learning as a learning place: Learning opportunities (variability), task identity, and social support (Prümper, Hartmannsgruber, & Frese, 1995).

Table 2
Descriptive of quality of workplace learning, 8th month in apprenticeship

	N	Mean	Minimum	Maximum	SD
Variability/learning opportunities	12	4.19	3.67	5.00	.502
Task identity	12	4.08	3.00	5.00	.669
Social support	12	3.54	2.33	5.00	.656

Outcome Measures. Four measures were used to describe outcomes: Satisfaction with the apprenticeship, perceived fit with apprenticeship, occupational commitment, learning progress (Nägele & Neuenschwander, 2014).

Table 3
Descriptive statistics outcome measures, 8th month in apprenticeship

	N	Mean	Minimum	Maximum	SD
Satisfaction with apprenticeship	12	5.00	3.00	6.00	.900
Perceived fit apprenticeship	12	5.13	4.33	6.00	.599
Occupational commitment	12	4.36	3.25	6.00	.985
Organizational commitment	12	4.35	3.60	5.40	.633
Self-assessed learning progress	12	5.17	3.00	6.00	1.030

3. RESULTS AND DISCUSSION

3.1 PARTICIPATION

There were various reasons for dropouts. Some apprentices indicated that they had lost interest in the study, others missed one or two reflections and decided to opt out, and some apprentices dropped out from apprenticeship. Others dropped out without telling us the reason. We did not get direct negative feedback that there have been too many induced reflections in a short time but on the fact that the same questions were repeated all over again each time.

3.2 SOCIAL SKILLS

Although the sample size is rather small, there are some remarkable first results to support the development of further hypotheses.

We found almost no correlations between social skills at time 1, and the outcomes measured eight months later at time 2, except for organisational commitment (Table 4).

Table 4
Correlations between social skills, 1st week and outcome measures, 8th month

First week / + 8 months	Satisfaction apprentice-ship	Perceived fit apprentice-ship	Occupational commitment	Organizational commitment	Learning progress
Perspective taking	.	.	.	.	.
Prosocial Behavior	.	.	.	.688**	.
Openness	.	.	.		.

CONTINUED ON NEXT PAGE →

Active Listening	.	.	.	.548*	.
Readiness to compromise	.627*	.	.	.662**	.
Self-related social competence	.	.	.	.	.
Finding friends	.	.	.	.	.
Assertiveness	.	.	.	.	.
Emotion regulation	.	.	.	.	.
Perception of others	.	.	.	.	.
Self-control	.	.	.	.518*	.
Self-awareness	.	.	.	.	.

Note. All outcome measures 8 months after apprenticeship started, non-significant correlations are not shown, * $p < .05$, ** $p < .01$, $N = 12$.

The specific social skills that correlated with organisational commitment were prosocial behaviour, active listening, readiness to compromise and self-control. Taking the perspective of a workplace trainer, this might be an apprentice that shows interest, who is willing to accept instructions and is malleable and controlled in his actions.

We see that occupational commitment and organisational commitment cannot be predicted by the same set of variables. In a prior study, we have seen that occupational commitment depends to a great extent on the quality of the vocational choice and decision, whereas organisational commitment develops through social integration in the training company (Nägele & Neuenschwander, 2014). Based on results from the pilot study we hypothesise that only a very specific set of social skills will

have a direct effect on outcome measures and that the effect will be different for various outcomes.

We further looked at the correlations between social skills and workplace learning (Table 5) that is the variability, task identity and social support. All three aspects are important in workplace learning, as they set the stage for learning.

Table 5
Correlations social skills with quality of workplace learning

	Variability		Task identity		Social support	
	August	+ 8 months	August	+ 8 months	August	+ 8 months
Perspective taking	.	.	.481**	.567*	.	.614*
Prosocial behavior	.	.	.	.543*	.	.
Openness	.	.	.436*	.	.	.
Active listening	.	.	.	.676**	.	.632**
Readiness to compromise	.	.	.	.844**	.	.574*
Self-related social competence	.	.	.415*	.597*	.	.
Finding friends	.	.	.	.550*	.	.700**
Assertiveness	.	.	.	.	.	.555*
Emotion regulation	.	.	.	.	.	.
Perception of others	.	.	.	.	.	.524*
Self-control	.	.	.	.	.	.
Self-Awareness	.	.	.	.	.	.

Note. All measures of the quality of the workplace as learning venue were measured in the beginning, and after eight months in apprenticeship, non-significant correlations are not shown, all shown correlations are significant * $p < .05$, ** $p < .01$, $N = 12$.

Surprisingly, no correlations were found between social skills and variability, but there were correlations with task identity and social integration. Social skills and social support do not correlate at the beginning of apprenticeship, but some aspects of social skills do it after eight months such as perspective taking, active listening, readiness to compromise, finding friends, assertiveness, and perception of others. Interestingly, the set of social skills that are associated with task identity and social support were partly different. Prosocial behaviour and self-related social competences were correlated only with task identity, but not with social support. Also, assertiveness and perception of others were correlated only with social support but not with task identity. As only bivariate correlations were presented, the question of how these skills interact in predicting the quality of workplace learning requires further investigations. Based on these results we can hypothesise that different social skills will predict different aspects of workplace learning.

Lastly, we correlated the workplace quality items with the outcomes (Table 6). We found that variability was positively correlated with satisfaction, perceived fit and the learning progress. Task identity was correlated with satisfaction and organisational commitment. Social support was only correlated with satisfaction.

Table 6
Correlations quality of workplace learning with outcome measures, 8th month

	Satisfaction apprentice-ship	Perceived fit apprentice-ship	Vocational commit-ment	Organiza-tional com-mitment	Learning progress
Variability	.777**	.852**	.	.	.577*
Task identity	.768**	.	.	.569*	.
Social support	.622*	.	.	.	.

Note. Quality of workplace learning and outcome measures were assessed after 8 months in apprenticeship, non-significant correlations are not shown, * $p < .05$, ** $p < .01$, $N = 12$.

A major limitation of the presented results is the small number of participants in the study. It would be interesting to further investigate interactions and also the development over a longer period.

The presented results suggest a sequential process: Social skills seem to predict the perception of the workplace as a high-quality learning venue. The perception of the workplace as a learning venue seems to have a positive effect on socialisation outcomes. To describe these effects, a larger sample would be needed.

The presented results suggest that it is not social competence but specific facets of the social competence that affect social integration and workplace learning, or outcomes. And it is not necessarily the same set of factors that can serve as predictors.

3.3 SOCIAL SELF-REFLECTION

The aim was to induce social reflection. Consequently, we expected the apprentices to mainly reflect on social incidents (e.g., conflicts, a dispute with the colleague or workplace trainer).

However, we found that most reflections were task related. The task reflections were on performance issues and things related to (learning) tasks, like doing something new that the apprentice has never done before.

For an illustration, the reflection on the question "How are things going with the workplace trainer?" generated following statements (numbers indicated the sequence of the reflections during the eight months):

01 *Nothing special*
02 *It's only important that I get to work properly*
03 *The next few weeks we must learn to work with the file. Most likely, this will be a time where nothing special happens. But I will try to work even more accurately.*
04 *I want to have finished with fileing next week.*
05 *I just want to do my work conscientiously.*,
06 *I don't know. We will start a new task after holidays. Therefore, it is difficult to guess what will happen.*
07 *For me, the only thing that counts is that I make the probationary time.*
08 *I do not want to work so slowly but rather at full speed from the beginning.*
09 *I need to be more open.*
10 *I want to work a bit faster.*
11 *I will try to finish cleaning up as soon as possible. After that I have holidays, and after these, I start with a new topic*
12 *I just have to stay alert and work well. I have to boost my work quality again.*

Social content is only mentioned in reflection number 09, where the apprentice mentions that he needs to be more open.

The reflections were typically very short, even in the face of a

serious situation. One apprentice was at risk of dropping out from the apprenticeship. His reflection on the team reads as follows:

01 *I help others*
02 *I help a lot*
03 *All is going well*
04 *Rather good*
05 *Very good*
06 *It still makes me happy*
07 *I have realised that I do not want to continue this apprenticeship*
08 *Good*
09 *Again good. Wanted to cancel my apprenticeship. But I will continue, thanks to an internal internship in another division of the company.*

It is interesting to see that the risk of dropping out of an apprenticeship was not at all visible in the statements before reflection number 07. Then, the apprentice retrospectively mentioned the risk of contract cancellation. All this happened within a short period. The apprentice found a temporary placement in another division within the company, came back to his original apprenticeship place and continued with the apprenticeship. This is an example of fast changes that can only be registered if there is a constant and close observation of the apprentices.

We saw that the apprentices did not write that much in reflecting on their social integration. This might have several reasons. One was already mentioned above. The apprentices tend to reflect on task-specific aspects of their apprenticeship, and not on social aspects. Second, these apprentices are trained in an apprenticeship where manual work is important and where the written communication is based on a great part on schemas and

technical drawings. This is another kind of communication than we wanted them to do in reflecting on their social integration.

Another limitation became obvious in cross-reading the answers to the three questions on reflecting on the current state, on how it came that way, and on how it will develop, which the participants had to answer to separately for the workplace trainer and the team. Some apprentices ignored this distinction. A consequence might be to instruct the apprentices better or to allow the reflection in a free-form text field.

4. DISCUSSION

The transition from school to work is related to significant changes in the adolescents' lives. Despite the many changes, one thing, however, does not change. It is the expectation that an apprentice can and also get supported in their acquisition of knowledge and skills to shape her/his abilities to become competent in the selected occupations. Learning is such an important topic in both environments.

We argue that learning at the compulsory school on the lower secondary level and primary school is different from learning in vocational education and training, especially learning at the workplace in an apprenticeship. Learning is embedded differentially (e.g., class and peer-group at school vs mixed aged teams in a production environment as predominate environmental context), learning is organized and structured differentially (e.g., professional role of teacher and the need to teach all children at school vs learning embedded in a production process with the main focus in productivity), and also learning has different goals (developing a broad range of personal competences defined by didactics vs developing personal competences needed to fulfil job require-

ments). We model social integration as a key factor in workplace learning, as it is a precondition as well as a consequence of learning. Transferable competences, especially social competences, become important in the transition as these skills are tools that an apprentice has at her or his disposal to facilitate her or his social integration in the workgroup and to shape the relationship with the workplace trainer. As the development of social skills is very much bound to specific situations, the assessment of social competences is always an assessment of individual and groups' social competence within a certain context. We argue for the need to get a closer look at the development of transferable competences on the lower secondary level. This should start with the development of a model of social competences assumedly needed in an apprenticeship. Most likely, this attempt would not be very fruitful, probably leading to a list of countless trainable social competences, and thus adding to the substantial number of lists that already exist. We think that the question needs to be more precisely what kind of transferable skills are needed to support learning in vocational education and training? What would be needed is a work task analysis to specify skills needed in specific contexts. In this paper, we relied on a list of social skills with a focus on supporting the shaping of beneficial social interactions and to establishing high-quality social relationships. We have seen that these skills correlate with different aspects that describe a high-quality workplace learning. Again, this leads us to conclude that a differential description of social skills is needed to describe how they are linked to different aspects of learning at the workplace and further desirable outcomes.

Of course, there it is also crucial that companies invest in selection processes, onboarding strategies, that learning is appreciated in the company and that given job designs allow learn-

ing to occur. In this paper, we looked at three aspects of the job design which facilitate learning: Variability/learning opportunities, task identity and social support.

Based on the limited data available from the pilot study, and in addition to it our research on the development of organizational and occupational commitment (Nägele & Neuenschwander, 2014), and the development of the social integration and relationship with the workplace trainer (Nägele & Neuenschwander, 2016), we come up to propose a model in which specific transferable skills acquired at school (upper secondary level, primary school) can have an impact on learning at the workplace through social integration. We should have a closer look at what specific transferable, especially social, skills have an effect on specific aspects of workplace learning. First, we would need workplace learning task analyses to identify the skills needed. Then, we would need to find ways to train these specific skills in an environment (compulsory school), which is, regarding how learning occurs, different form vocational education and training.

Another possibility to support learning in vocational education and training is through intraindividual processes such as self-reflective processes. In this paper, we focused on an instruction to reflect on the social integration as a pre-requisite for learning at the workplace. We saw that the instructions work and that the feedback of those that stayed on track during the eight months was mainly positive, concerning the form and content of the reflection. Also, we observed that the apprentices autonomously started to reflect on task-related and not on social processes which did not meet our expectations. We have also seen that the apprentices do not write much on their reflections. We can speculate about several reasons (e.g., sector-specific use of written communication, poor introspective abilities, poor capa-

bilities to monitor the social situation, or simply nothing noteworthy happened). To us, this is a hint to think about other strategies to induce and to protocol the apprentice's reflection (e.g., voice recordings, pictures, videos). We also need to think about how to induce the best reflection: Is it suitable at all to start with a reflection on social processes or should we first induce a task reflection? Further, as it seems difficult to disentangle the effects of the team and the workplace trainer, reflection could be focusing on both at the same time.

Overall, we conclude that it is worth the effort to follow apprentices for eight months and to ask them to reflect on their work and their interaction with the workplace trainer and team. Also, we demonstrate that some specific social skills correlate with the quality of workplace learning and that the quality of workplace learning correlates positively with outcomes (e.g., satisfaction, commitment).

Adolescents can foster their workplace learning through social integration and self-reflection. Social integration relies on specific social skills of the apprentice. Companies can support workplace learning through their onboarding strategies, socialisation tactics, team structures and job design. Compulsory, pre-vocational schools can help to prepare workplace learning through the vocational orientation, development of specific social skills, and also by instructing the pupils in how to self-reflect.

5. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

We are currently looking for support to run this studies with an extended sample, aiming at identifying relevant transferable skills that support workplace learning through social integration and to strengthening the apprentices in their self-reflective capacities.

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Apprentices' Adaption and Innovation Styles in Relation to Dimensions of Workplaces as Learning Environments

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Abstract: Previous research has shown that workplaces vary as learning environments, some providing opportunities for developing expertise, while others restrict the possibilities of learning. Workplace as learning environment (WLE) survey was designed to identify the aspects of the workplace that contribute to offering more expansive working environments. In order to examine learner factors, we use the Adaption-Innovation theory, which is premised on the idea that individuals can be placed on a continuum ranging from an extremely adaptive to an extremely innovative style. Cognitive style is distinguished from cognitive level (ability to successfully solve problems) and both styles are creative but in different ways. For the purpose of this study, a self-report version of Kirton Adaption-Innovation (KAI) survey was created. In order to survey the person-environment fit, participants responded to each item on two scales, first one measuring their own cognitive style, and the second one the style of their workplace. Based on a survey addressed to vocational students

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and a sub-sample of apprentices (N=305), this study aims at answering following research questions: 1) How do apprentices locate on a continuum of cognitive style ranging from adaption to innovation?, 2) How the dimensions of WLE are related to KAI score and dimensions?, 3) How the person-environment fit is related to WLE dimensions? The survey data is analysed with non-parametric frequentistic and non-frequentistic methods due to discrete measurement level of variables.

Keywords: apprenticeship, cognitive style, workplace learning, learning environments, survey.

1. INTRODUCTION

In recent decades, apprenticeships and work-based learning have been promoted in the context of vocational education and training (e.g., European Commission, 2015). Simultaneously, workplaces have been acknowledged as learning environments, and interest in workplace learning has grown due to rapid changes that affect both working life and wider society (Illeris, 2003; Tynjälä, 2008), for example, through automatization (Nokelainen, Nevalainen, & Niemi, 2017). In the field of workplace learning, sociocultural theories consider learning as ongoing individual as well as social processes of participation that are shaped by social, organisational, cultural and other contextual factors (Hager, 2013). Tynjälä's (2013) 3-P model of workplace learning acknowledges this sociocultural environment as a context that defines the possibilities and constraints of workplace learning. Per the model, there are three basic components in the learning phenomenon: the presage, the process and the prod-

uct. The *presage* component includes both learning context and learner factors. However, these factors do not affect the learning process directly; rather, they do so through the learner's interpretation of all factors. The *process* component encompasses learning activities that include participation, collaboration and interaction. Finally, the *product* component includes diverse learning outcomes (Tynjälä, 2013). In this study, we are especially interested in the presage component.

Workplaces have been characterised as learning environments based on their affordances and opportunities for learning (Billett, 2001). Similarly, these opportunities, including work organisation, conditions and practices, can be considered structural aspects that either facilitate or hinder learning (Ellström, 2011; Ellström, Ekholm, & Ellström, 2008). Previous research has shown that workplaces vary as learning environments. Ideally, they can be enabling if they support either the questioning of existing routines and the development of new problem-solving approaches or restriction if they prefer to comply with routines and practices (Ellström, 2011). In the context of apprenticeship training, Fuller and Unwin (2003, 2004) have shown that some workplaces provide expansive opportunities for developing expertise, while others restrict the possibilities for learning. Nevertheless, it is important to acknowledge that certain learner factors, such as previous experience, knowledge and understanding of learning opportunities, engagement in activities and motivation, affect one's ability to both identify and utilise available learning conditions (Ellström et al., 2008; Tynjälä, 2013). Similarly, Billett (2002a, 2002b) noted that, even though participation in social practices is regulated by workplace affordances, the learner can eventually choose whether or not to engage in the learning process.

In this study, the aim is to examine relationships between a learner's cognitive style (adaption-innovation (AI)) (Kirton, 1976) and how the workplace is experienced as a learning environment (Fuller & Unwin, 2003). Operationalisation of these two concepts in a survey context is firstly based on the idea that individuals can be classified according to their cognitive style and secondly on the idea that workplaces can be classified as either expansive or restrictive learning environments. Additionally, we examine the fit between apprentices and their workplaces. We begin by explaining the concepts and then present the empirical results in the context of a Finnish apprenticeship training programme. We conclude with a discussion and recommendations for further research.

2. THEORY

Based on Fuller and Unwin's (2003, 2004) expansive-restrictive framework and Eraut's (2000, 2004) work, James and Holmes (2012) designed the Workplace as a Learning Environment (WLE) survey to identify aspects of the workplace that offer more expansive working environments and thereby provide better opportunities for developing skills and knowledge. The seven areas to which the learner should be granted access and which are assumed to be related to expansive working environments include the following: (a) participation and understanding of the workplace (Lave & Wenger, 1991), (b) task performance (task variety), (c) access to learning resources (e.g. mentors, other workers, materials and qualifications), (d) judgement, decision-making, problem-solving and reflection, (e) experience, task transition and career progression, (f) status as both a

worker and a learner and (g) organisational development. Fuller and Unwin's (2003) framework is related to the sociocultural perspective that connects learning to organisational conditions and practices (Ellström, 2011); however, learner factors influence learning in the workplace through interpretation of those factors (e.g. Billett, 2001; Felstead, Gallie, Green, & Inanc, 2015; Tynjälä, 2013).

This study focuses on individuals' cognitive styles, which are stable and preferred cognitive approaches to creativity, problem-solving and decision-making processes (Chan, 1996; Kirton, 1976, 1980, 2003). Kirton's Adaption-Innovation theory (KAI) (1976, 1980, 2003) purports that each approach is creative and solves problems. Determining how people solve problems happens through placing an individual on a continuum, ranging from an extremely adaptive to an extremely innovative style. Cognitive style is distinguished from cognitive level (ability to successfully solve problems), and adaptive and innovative styles are both creative but in different ways (Chan, 1996), suggesting that both adaptors and innovators have their own strengths and weaknesses, which can be either useful or harmful to organisations (Kirton, 1980). The KAI survey comprises three sub-scales: (a) sufficiency of originality, (b) efficiency and (c) rule/group conformity (Kirton, 2003). Adaptors prefer to both operate within agreed paradigms and to create change by improving on the existing structure to do things better. They have a tendency to develop ideas that are easily applicable to the situation. They also favour staying in groups by maintaining cohesion through following accepted methods and solving problems in a disciplined, predictable manner (Chan, 1996; Kirton, 1994, 2003). Contrarily, inno-

vators prefer to do things differently by breaking away from existing frameworks. They are associated with originality of ideas and less concern for efficiency and rule and/or group conformity. Innovators may either ignore the rules or invent their own because they prefer to remain individualistic and to drive change by altering the existing paradigm via the creation of new ideas (Chan, 1996; Kirton, 1994). Even though each person has a stable, preferred style, it is possible to act according to an opposite style as a coping mechanism. However, when people are under pressure, they prefer their natural style (Kirton, 1994, 2003). It is assumed that people select jobs and environments in which the work demands match their preferred style (Foxall & Hackett, 1994). Chan (1996) suggested that, in some settings, an adaptive and/or innovative person is likely to perform better than others, and he refers to a cognitive misfit as one aspect of person-environment (PE) fit. Notably, Jablokow and Booth (2006) found that individuals exhibited more creativity when in an environment that matched their cognitive style.

PE fit theory suggests that a good fit between employees and their organisation promotes motivation, job satisfaction and better performance (Kristof-Brown & Billsberry, 2012). Conversely, a misfit may lead to job-related strain and reduced job performance (Chilton, Hardgrave, & Armstrong, 2005; Yu, 2009). Because most people seek happiness and try to avoid stressful situations, they often alter their behaviour and/or aspects of their work environment to achieve PE fit (Nye, Su, Rounds, & Drasgow, 2012). In this study, we used the KAI score to investigate subjective PE fit (interplay of internal and external factors, see Yu, 2012) via participants' reports on both themselves and their environment.

For the purpose of this study, three research questions were formulated:

1 Where are apprentices on a continuum of cognitive style, ranging from adaption to innovation?
2 How are the dimensions of WLE related to KAI scores and dimensions?
3 How is person-environment fit related to WLE dimensions?

3. METHODS AND DATA

The data were collected during December 2014–January 2015 from Finnish students through an online survey that was distributed to vocational institutions. Although 1,559 students responded, this study focused on a sub-sample of 305 apprentices who answered a section of the survey that relates to cognitive style and workplaces as learning environments. Data were gathered using self-reporting measures that were administered on a single occasion. Of the 305 respondents, 233 (76.4%) were women, 72 (23.6%) were men and their age ranged from 16 to 64 years ($M = 40.4$, $SD = 10.4$). Although most of the participants came from the Southern Finland, their age distribution was similar to population distribution (Statistics Finland, 2015).

SURVEY MEASURES

WLE Survey. The WLE (James & Holmes, 2012) survey includes 21 items on a 5-point self-rating response scale (1 = totally disagree; 5 = totally agree). The survey addresses seven main areas that are related to expansive learning environments (sample statements in parenthesis):

1 *Participation and understanding of the workplace* ('I understand the goals and aims of the workplace').
2 *Task perform*ance ('I use a range of skills in my work').
3 *Access to resources to help learning* ('I have a mentor/coach at work').
4 *Judgment, decision making, problem solving and reflection* ('I have time to reflect on my work').
5 *Experience, task transition and career progression* ('I give time to work through tasks to develop my skills and knowledge').
6 *Status as both a worker and a learner* ('I am recognised as a learner in the workplace').
7 *Organisational development* ('The business' goals consider my goals').

KAI Survey. The KAI (Kirton 1976, 1980) survey consists of 32 items and uses a 5-point self-rating response scale (1 = totally disagree; 5 = totally agree), which offers a theoretical range of 32–160 and a theoretical mean of 96. Low scores (between 60 and 90) indicate styles towards the adaptive end of the continuum, and high scores (between 110 and 140) indicate styles towards the innovative end. Different studies that have been undertaken in different countries have yielded stable general population norms, with an observed range of 45–146 being normally distributed amongst a mean of approximately 95 (Chan, 1996). Per Armstrong, Cools, and Sadler-Smith (2012), KAI (1976) theory states that cognitive style is independent of culture, which suggests that, for example, occupational groups in different nations should have similar general findings, despite contradictions and ambiguities in empirical findings (e.g. Bago-

zzi & Foxall, 1995). KAI survey includes following three factors (sample statements in parenthesis):

1 *Proliferation of originality* (SO) ('I generate ideas', 'I like to create something new instead of improving something that already exists' and 'I need the stimulation of frequent change').
2 *Efficiency* (E) ('I master all details painstakingly' and 'I like routine work').
3 *Rule/group conformity* (R) ('I fit readily into the system' and 'I get along well with authorities') (Bagozzi & Foxall, 1995; Kirton, 1994).

For the purpose of the current study, we created a self-reporting version of the KAI survey based on a pilot interview study. Participants responded to each item on two scales: the first measured their own AI style (e.g. 'I proliferate ideas'), and the second measured the style of their workplace (e.g. 'My workplace encourages the proliferation of ideas'). Puccio, Talbot, and Joniak (2000) adjusted the KAI survey in a similar way to assess PE fit through modifying the original items so that individuals would respond from three different perspectives to assess not only style preferences but also the work environment along the AI continuum.

The survey data were analysed with both non-parametric frequentistic (RQs 1 and 2: descriptive statistics, correlational analysis) and non-frequentistic methods (RQ 3: Bayesian Classification Modelling, see Nokelainen, Silander, Ruohotie, & Tirri, 2007) due to a discrete measurement level of variables. In this study, we used an analysis tool based on Bayesian computation

that allows for automatic inference of the model structure from the data (Myllymäki, Silander, Tirri, & Uronen, 2002).

4. ANALYSIS AND RESULTS

WHERE ARE APPRENTICES ON A CONTINUUM OF COGNITIVE STYLE, RANGING FROM ADAPTION TO INNOVATION?

Per Im and Min (2013), many studies have shown good psychometric properties for the 32-item KAI survey. The KAI scores for large general populations followed a normal distribution, with a mean close to 95 (females = 91; males = 98) and standard deviation of 17 (Jablokow, 2011). The KAI score distributions for individuals and their workplaces were close to normal: skewness = .209 (*SE* = .140) and -.174 (*SE* = .140); kurtosis = .137 (*SE* = .278) and 1.212 (*SE* = .278), respectively. In line with earlier studies, the mean KAI scores in our female-dominated sample were 92.8 (range from 61 to 119, *SD* = 9.880) and 90.4 (range from 50 to 124, *SD* = 10.176) for their workplaces. Notably, small standard deviations for both scores may result from using KAI theory on a self-rating form.

HOW ARE THE DIMENSIONS OF WLE RELATED TO THE KAI SCORE AND DIMENSIONS?

In the second phase of the analysis, we calculated non-parametric correlations (Spearman's rho) between WLE dimensions and the apprentices' individual KAI scores (Table 1). The results showed that adaptive apprentices found more learning resources in their workplaces [$r(338) = -.248, p<.001$] than innovative individuals

as well as that adaptive apprentices felt that they gained holistic work experience, had more opportunities to develop their work-related skills and were more aware of their career opportunities than innovative apprentices [$r(338) = -.134, p = .019$].

Table 1
Non-Parametric Correlations Between Apprentices' (N=305) WLE Dimensions and KAI Scores

Measure	WLE 1	WLE 2	WLE 3	WLE 4	WLE 5	WLE 6	WLE 7	KAI score
WLE 1. Participating in and understanding your workplace	-							
WLE 2. Performing work tasks	.711**	-						
WLE 3. Resources available to help you learn your work tasks	.476**	.546**	-					
WLE 4. Judgement, decision making, problem solving and reflection	.545**	.601**	.461**	-				
WLE 5. Experience, tasks and career progression	.474**	.467**	.597**	.531**	-			
WLE 6. Status as both a worker and a learner	.424**	.462**	.365**	.397**	.441**	-		
WLE 7. Organisational development	.463**	.411**	.430**	.388**	.367**	.372**	-	
KAI score	-.032	-.014	-.248**	.047	-.134*	.042	.023	-

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

Further examination of correlations between seven WLE and three KAI dimensions revealed that all WLE dimensions correlated statistically significantly positively with the first KAI dimension ('Proliferation of originality'). This indicates that

apprentices who self-assessed themselves as producers of original ideas considered their working environment more expansive than restrictive (r range from .367 – 463, p<.01). Two other KAI dimensions ('Efficiency' and 'Rule/group conformity') had negative and statistically significant correlations with the first five WLE dimensions. Because the ratings of these two dimensions are reversed for the KAI score, this finding suggests that both efficiency-oriented and safety-conscious apprentices considered their workplaces expansive, except in the dimensions of encouragement (WLE dimension 6) and how organisational goals affect their own goals (WLE dimension 7) (Table 2).

Table 2

Non-Parametric Correlations Between WLE and KAI Dimensions

Measure	WLE 1	WLE 2	WLE 3	WLE 4	WLE 5	WLE 6	WLE 7	KAI 1	KAI 2	KAI 3
WLE 1. Participating in and understanding your workplace	-									
WLE 2. Performing work tasks	.711**	-								
WLE 3. Resources available to help you learn your work tasks	.476**	.546**	-							
WLE 4. Judgement, decision making, problem solving and reflection	.545**	.601**	.461**	-						
WLE 5. Experience, tasks and career progression	.474**	.467**	.597**	.531**	-					
WLE 6. Status as both a worker and a learner	.424**	.462**	.365**	.397**	.441**	-				
WLE 7. Organisational development	.463**	.411**	.430**	.388**	.367**	.372**	-			
KAI 1. Proliferation of originality	.359**	.462**	.196**	.442**	.289**	.268**	.284**	-		
KAI 2. Efficiency 1	-.222**	-.317**	-.259**	-.237**	-.236**	-.084	-.072	-.315**	-	
KAI 3. Rule/group conformity 1	-.212**	-.237**	-.389**	-.141*	-.304**	-.115*	-.162**	-.096	.465**	-

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

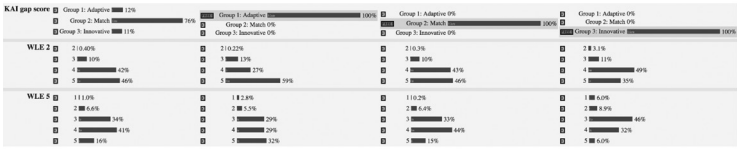
Note. [1] Reverse scoring: Low values dictate high 'Efficiency' and 'Rule/group conformity'.

HOW IS THE PERSON-ENVIRONMENT FIT RELATED TO WLE DIMENSIONS?

In the third phase of the analysis, participants were categorised into three groups based on their self-rated difference between individual and workplace KAI scores (M = 2.45, SD = 9.402, ranging from -28 to 46) to reflect person-environment fit. Because the KAI gap score followed normal distribution, we used standard deviations to define participants' group membership. The first group (n = 37) contained apprentices who felt that they were more adaptive than the expectations of their workplace (KAI gap scores of more than -2 SD from the mean, ranging from -28 to -7). The second group (n = 234) showed matches in AI between individuals and organisations (KAI gap score value ranging from -8 to 12). The third group (n = 34) contained apprentices who were more innovative than their organisations (KAI gap scores higher than 2 SD from the mean, ranging from 13 to 46).

Bayesian classification analysis was performed using KAI gap score (with three classes, based on the aforementioned groups) as the class variable and seven WLE dimensions as predictor variables (Figure 1). Only two dimensions (WLE 2 'Performing work tasks' and WLE 5 'Experience, tasks and career progression') were selected as predictors of KAI gap score values. Results relating to the second WLE dimension showed that apprentices who believed that they were more adaptive than their workplace (group 1) performed well on complex tasks, utilised a wide range of skills and collaborated successfully with others in their workplace. Results relating to the fifth WLE dimension showed that group 1 apprentices also had workplaces that provided a versatile work experience, a manageable workload, time for personal professional development and career development opportunities.

Figure 1. Bayesian classification modelling of KAI gap score as class variable and WLE dimensions as predictors.



5. DISCUSSION AND CONCLUSIONS

This study's results show that adaptive apprentices found more learning resources in their workplaces than innovative apprentices. Subsequently, adaptive apprentices felt that they gained holistic work experience, had more opportunities to develop their work-related skills and were more aware of their career opportunities than innovative apprentices. This finding is in line with earlier research, which suggests that innovative individuals may seek unique solutions and be more detached from their surroundings (Chan, 2000). Although both innovation and innovative behaviours have been promoted in organisations in recent decades, Kirton (2003) has emphasised the recognition of each person's capability to solve problems and that one cognitive style is not better than another. Notably, apprentices who assessed themselves as able to produce original ideas also felt that their working environment was more expansive than restrictive.

The results also show that expansive workplaces allow experimentation and paradigm breaking (instead of only efficiency, precision, reliability and agreement with the group). Recent changes in educational policies in Finland have aimed at shifting vocational education and training from vocational schools to authentic workplaces. For this reason, it is even more import-

ant to understand what kinds of workplaces offer high quality learning environments and how workplaces can prevent employees from dropping out. Most of the studied apprentices felt that their individual cognitive style matched the cognitive style of their organisation. Most person-environment fit theories suggest that individuals prefer and look for environments that are compatible with their own characteristics (Nye et al., 2012). Per our results, apprentices who described themselves as more adaptive than their workplace (a) performed well in complex tasks, utilised a wide range of skills and collaborated successfully with others (WLE 2 'Performing work tasks') and (b) had versatile work experience, manageable workloads, time to develop themselves professionally and career development opportunities (WLE 5 'Experience, tasks and career progression').

Although the differences between different vocational fields were not examined in this study, previous research has suggested that, for example, in sales and marketing, an innovative cognitive style is most common (e.g. Cools, Van den Broeck, & Bouckenooghe, 2009; Foxall & Hackett, 1994). It would be interesting to direct future studies towards analyses between different vocational fields. Limitations regarding the characteristics of the self-reported data should also be noticed (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

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Adult Education and Vocational Training in Italy: Outstanding Issues

Chiara Biasin*

Abstract: Data from the Program for the International Assessment of Adult Competencies (PIAAC-OCSE) show that Italian Adults' level in literacy, numeracy and problem-solving ability is the lowest one between the 24 countries participating in the survey. These data, elaborated in a national report by the Italian Institute for the Development of Vocational Training of Workers (ISFOL, 2014), indicate two major issues: firstly, a general lack of participation in formal learning activities after completion of compulsory studies, then a low need for Vocational Training and Adult Education among Adults from 16 to 65 years.

Starting from these evidences, this paper discusses the reasons underlying this negative situation. According to an historical point of view, the aim is to highlight delays in Vocational Training policies and stress structural weaknesses in Italian Adult Education System. Only by means a broad rethinking of the meaning and of the role of Adult and Vocational Education at all levels (institutional, social, educational, etc.) Italian people can understand and realize to full access the emancipative and transformative potential of Training and Education in Adult life.

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Keywords: Adult Education, Vocational Training, Low skilled Adults, Adult Competences

1. INTRODUCTION

Adult Education and Vocational Training are considered as key issues in promoting Lifelong learning. These are crucial elements in developing citizenship, equality, tolerance and employability (OECD, 2012; EC, 2016). Learning and high competence levels also appear to affect a nation's economic competitiveness internationally, reducing social inequalities. An increasing demand to update skills and knowledge over the life span contributes to enable potential workers to stay in the labour market improving their positions, and offers new opportunities to increase their competences (Kilpi-Jakonen et al., 2014; Triventi e Barone, 2014). But Adult Education and Training is also considered a human right, that acts as a booster for freedom and for development of individuals (Tomasevski, 2001, 10). Its mandate is to contribute in dignifying individuals, in fostering their fulfilment for positive social relationships, and a healthy life-style. Unesco has emphasized that the aim of Adult Education and Learning is to equip people with capabilities to exercise their rights and to better accomplish their destinies (Unesco, 2015, 8). This is why Unesco recommendations are addressed to the national governments, so that they can take the necessary measures directly targeted on adults. Inclusive, integrated, and lifelong policies can secure human rights and democracy for all individuals and societies (Biesta, 2006).

The lack of basic skills is an obvious drawback for the individual involved but it also exposes a problem of central importance

for the impact it generates on a nation's education and training system, in its workplaces, and in the dynamics of civil society (Milana et al, 2016). PIAAC Survey and International Reports have shown that investment in the education and training of adults can be a primary strategy toward overcoming the great challenges of unemployment, social disintegration, lawlessness, and poverty (EC, 2016). In these international data-sets, Italy's under-average scoring thus indicates a great concern about adult competences in its population.

This paper begins with a brief overview of the International Survey on Adult Skills. Data indicate low levels of acquired proficiency in Italy's adult population. Results from the other 24 participating countries are sometimes significantly higher. It appears clear that educational and training processes for adults is to be improved. We take a closer look to the Italian PIAAC data, with a discussion of the results on literacy and numeracy scores. We assume that these two are indicators of the lack in competence which reduce citizens' active contribution and responsible participation in society and also hamper the adult's personal and professional development along their whole life. Rooting on a brief historical outline, our analysis focuses on low skilled adults, and in particular on social, economical and educational implications for the country. Our conclusions about the Italian adult and vocational education draw attention to the national situation which needs to be seriously modified both with cultural measures and public investments in order to change these negative trends.

2. THE SURVEY PIAAC-OECD

Results for the survey *Programme for the International Assessment of Adult Competencies* are in. Promoted by the Organization for Economic Cooperation and Development (OECD, 2013), 24 countries participated in 2011-2012. In Italy, the survey was made by ISFOL (now INAPP), the national research institute in the fields of learning, labor, and social policies. The collected data allows evaluation of the efficacy of instruction and learning as it relates to key competencies, to employability, and to the market for labor.

The PIAAC survey revolves around adult and vocational competences in basic skills which focus on literacy, numeracy, and problem solving. PIAAC focus on these three and claims, in particular, that these are essential because strictly linked to everyday adults' life and job contexts. The "traditional" three competences in today's technologically advanced environment have changed the former definitions so they describe the basic skills required by XXI century workers and individuals.

As an *Information Processing Skill,* literacy is defined as a continuum of abilities, strategies and knowledge that arise from the capacity to read and write and to appropriately and effectively use socio-cultural, technological, and communication instruments, that have become a fundamental component in the access, management, integration, and evaluation of information, for the building of knowledge expertise and to communicate with others (ISFOL, 2014, 22). Literacy and numeracy now go beyond the minimum capacity of knowing how to read, write and count. This "contemporary" literacy reveals its centrality both in the social-economic and personal perspectives. In today's world, lit-

eracy allows an active contribution and responsible participation in society as a citizen. For the individual, modern literacy is the capacity to develop, and to maintain, interests, attitudes, abilities, and motivation connected to personal improvement during the whole of life's path. "Contemporary" numeracy must also cross the old threshold of understanding and being able to work with numbers. Here it is conceived as the capacity to enter, to utilize and to communicate mathematical information and ideas in confronting and managing problems of mathematical nature in the diverse situations of adult life (ISFOL, 2014, 24).

In order to know the percentage of adults who possess sufficient competence to accompany them successfully through everyday activities and work, 6 levels of proficiency were established based on a scale running from 0 to 500 points. The range from 276 to 325 permits adults to insert themselves in a positive and active manner in various social, profession and personal situations. This range defines Level 3. Level 1 contains the illiterate. People in Level 2 show some "old-fashioned" literacy and numeracy but not sufficient to operate in a fully-involved way in today's ever-changing world.

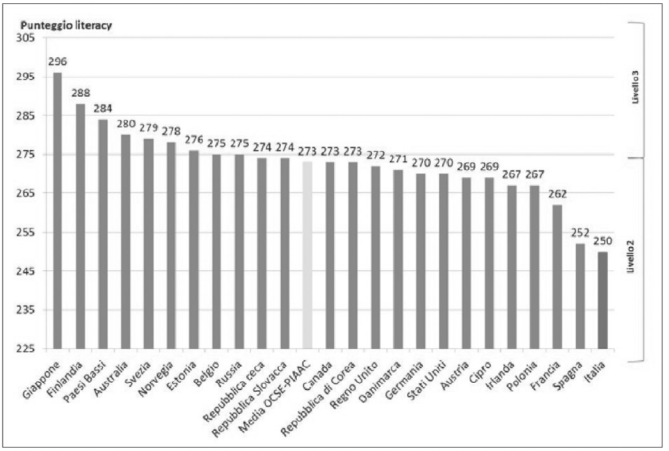
Some methodological aspects of PIAAC data have been criticized such as response rate, statistical sampling design, competences thresholds attributed, differences in adult life conditions in the various countries, 16-65 year of age as thresholds for adult working, missing relevant dimensions related to acting competence (as motivation, self-efficacy, social and cultural intelligence). In any case, the survey permits to highlight some tendencies on the level of adults' expertise. The PIAAC data cannot be read according to a deterministic and causal interpretation (ISFOL, 2014, 32), but are very useful because, from a

comparative point of view, they show both the national and the international situation on adult and vocational competences.

3. ITALY'S RESULTS IN THE SURVEY ON ADULT COMPETENCES

The synthesized data shows Italy in last position, 24th of 24, in literacy competence. The median point score of working age Italians in the survey (from 16 to 65 year is the range considered) is 250 points. The median average of all OECD countries in the survey is 23 points higher at the Level 2 (but even at 273 points the overall average remains at Literacy Level 2). With 29 points more than Italy, Sweden moves into Level 3. Finland is there too, scoring 38 points higher than Italy, and Japan is 46 points ahead [Figure 1].

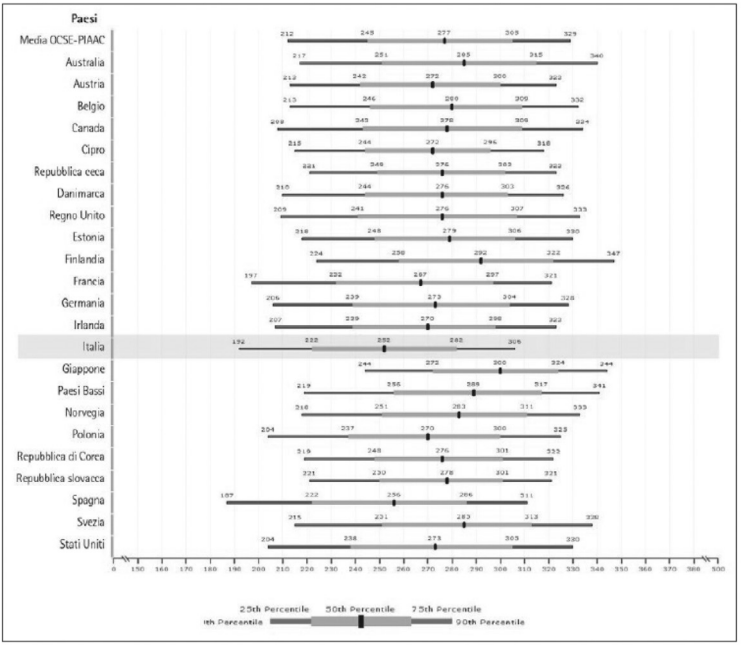
Figure 1.
Median average in literacy (16-65 years) OECD-PIAAC countries



(ISFOL, 2014, 72)

This shows that an Italian adult – Level 2 – can make inferences at low levels, can integrate and organize information of low complexity, but will not understand long, complex, discontinuous texts, nor be able to select information from it to make correct inferences. Figure 2 shows average scores of the participating countries compared by differences in percentile values. Here, Italy's low scores show little variability in their distribution between population.

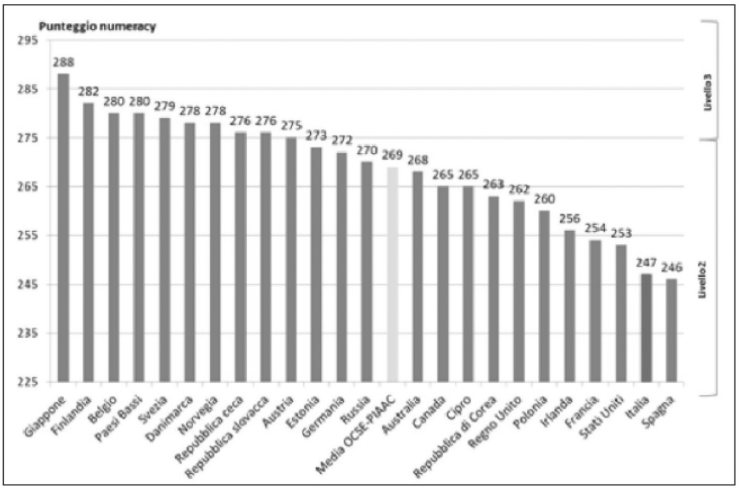
Figure 2.
Average between 5th and 95th percentile in literacy
OECD-PIAAC countries



(ISFOL, 2014, 73)

The differential between the 95th and the 5th percentile is 146 points, while Sweden and USA have a large variability and Japan shows little variation in the distribution between the population level (but in a higher score level than Italy!). The numeracy data is not great for Italy either. At 269, the average score of 24 sits 22 points ahead Italy's 247 – but last place goes to Spain in this Level 2. At 279 Sweden enters Level 3. Japan comes first again with 288 points [Figure 3].

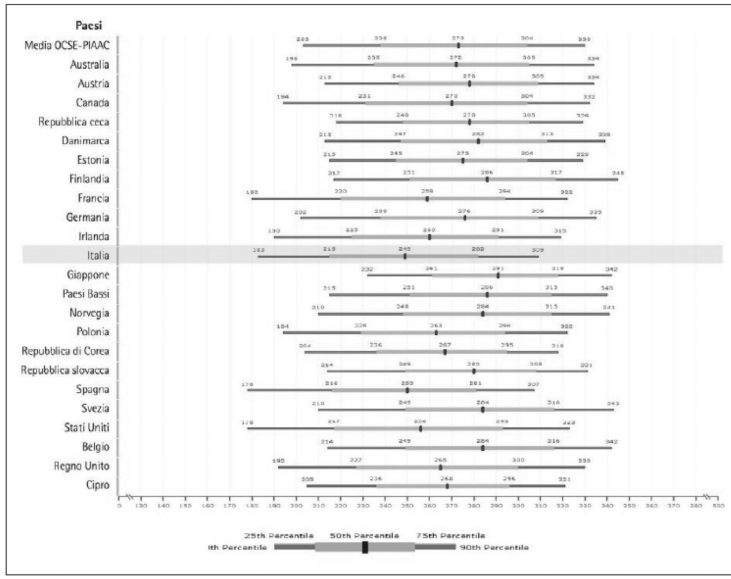
Figure 3.
Median average in numeracy (16–65 years) OECD-PIAAC countries



(ISFOL, 2014, 75)

The distribution of competence in numeracy [Figure 4] shows 163 points separating the 95th and 5th percentile for Italy. Japan's scores are closer with a difference of 143. The United States shows the greatest diversity with a 188-point separation.

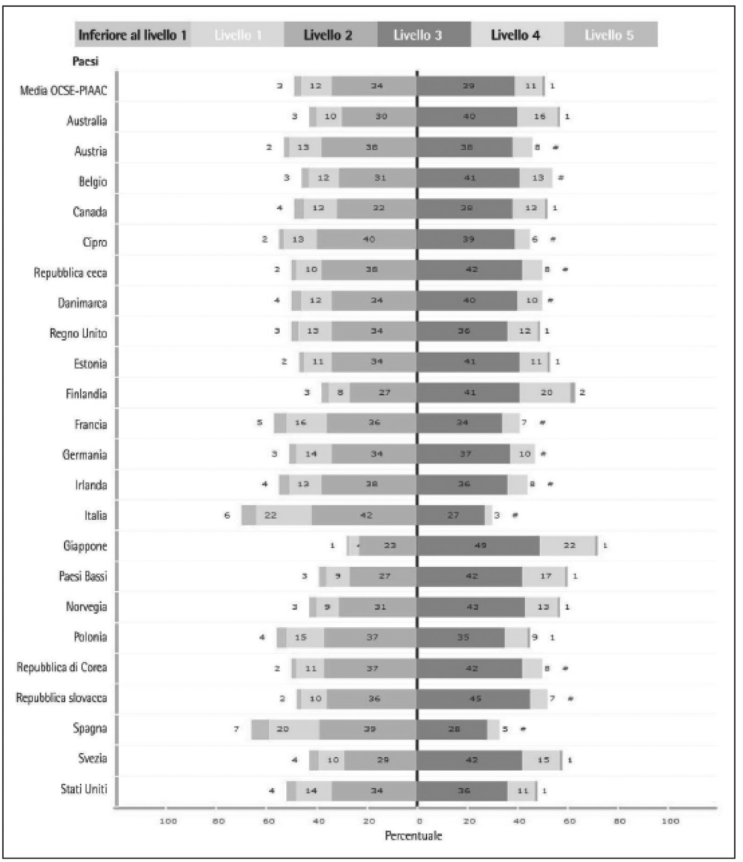
Figure 4.
Average between 5th and 95th percentile in numeracy
OECD-PIAAC countries



(ISFOL, 2014, 76)

At Figure 5, the distribution of levels of competence can be compared between the various countries. In Italy, 70% of the survey takers scores in Level 2 or lower, with 42% in Level 2, with 22% score in Level 1, and 6% Below Literacy Level 1. In contrast, Japan shows 72% of the survey population in the higher levels with 49% scoring in Level 3, with 22% in Level 4, and 1% in level 5. Other countries with majorities in the 3,4,5 higher levels are Finland and Sweden with 63% and 59% respectively. In Italy, only 30% reach the higher levels with 27% in Level 3, 3% in Level 4, and no percentage in Level 5. Of the 24 participating countries, only Spain has similarly poor results.

Figure 5.
Literacy levels – OECD-PIAAC countries



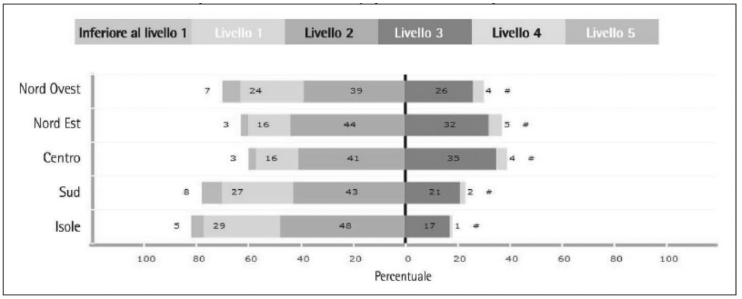
(ISFOL, 2014, 78)

Staying within the Italian group of survey participants, levels of performance distributed unequally, and with noteworthy levels of variability. As age goes up, average scores in literacy go down. In the oldest cohort of 55 to 65 year olds, 75% show capabilities only at Level 2 and lower. In the youngest cohorts

reverse with 75% of those with 16–24 years scoring in Level 3. A great difference in levels of schooling seems apparent in the last 40 years, and in fact many in the younger group are still students. The 25–34 cohort shows the largest internal variability with 145 points between their 5th and 95th percentile. This group contains few students, and no retirees and is all fully-, partially-, or unemployed and the wide range in scores is attributable to the differing vocational competences held by those with low, medium or high skill jobs (ISFOL, 2014, 89–90). Comparisons with the OECD median literacy averages expose real problems in the Italian situation: what look like high results achieved by Italians 16–24 cohort can be compared to the group 55–65 of the OECD average with the worst results; the Italian group between 35 and 44 years is below the average of the OECD average for 25–34 cohort.

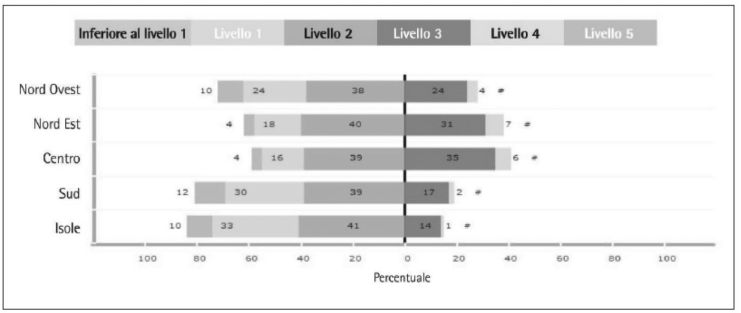
Geographic results detail great variations between five macro-regions of Italy: the North West, the North East, the Center, the South, and the Islands. Totalizing the higher levels 3+4+5 Italy's Center and North East show the best literacy results with 39.3% of population in each area included [Figure 6]. In the North West 36.8% make Level 3 or higher. In the South, 22.1%. On the Islands, 18%. In numeracy, figures are similar [Figure 7].

Figure 6.
Literacy levels in Italian five macro-regions



(ISFOL, 2104, 70)

Figure 7.
Numeracy levels in Italian five macro-regions



(ISFOL, 2104, 70)

Regional differences between young and old are also large. The 55–65 cohorts are always the lowest performers but over 53% of them test at Level 1 or below in the South, while the North East shows 29% at Level 1 or below. The combined younger cohorts, 16–35 years, consistently score highest with 8.4% of them reach-

ing Level 4 Literacy in the North East, with 10.5% reaching Level 4 in the North West, with 2.2% reaching Level 4 in the South, and 1.9% reaching Level 4 on the Island (ISFOL, 2014, 91).

The PIAAC-OECD survey confirms a relation between adult competencies and the sociocultural background. Regional averages in literacy rise in step with the number of years parents attended school. As the number of books owned in the home during the adolescence of survey respondents rises, so do their literacy scores. The greatest differences show up between respondents who have at least one parent who is a university graduate and respondents whose parents have primary school education, or less. Amongst Italians from less-educated families, 16% reach Level 3 literacy. This number is unimpressive with the OECD average at 25% (ISFOL, 2103, 104). Looking at the labor statistics, the employed have an average literacy score in Level 3 while the unemployed and inactive average into Level 2 or lower. Data from PIAAC-OECD survey show that Italy is a country with three main internal variances, strictly embedded with adult and vocational competences. Firstly, the youngest are the higher skilled Italians because of the extension of schooling. But, this relation between competence and age population requires a specific contextualization. In fact, the young ones are mostly unemployed or are dealing with a situation of extreme weakness and precariousness in the labor market. The consequences are paradoxical: the higher level of competences is ineffective to access to many professions, to participate in public life, with real implications in the way individuals live. One of these main effects is, for instance, the migration of Italian PhD students, who demand position at Universities abroad which is unavailable in their own country (Biasin, 2017).

Secondly, elderly cohort of Italian population, mostly workers or retired, hold a low skilled profile. The level of competences in literacy and numeracy reveals their incapability to appropriately and effectively live in a technologically advanced environment. Clearly, this impacts with the final part of their life-course, especially in decision making, in problem solving, in accessing and in processing information. This low level of older ones shows also how little vocational competences and training experiences have influenced professional and everyday lives of elderly ones. Until a few decades ago, Vocational Training have produced little effects on the Italian social mobility or in the job market.

Finally, the level in competence is differently gained in five macro-regions of the country. The "old" division of Italy in three main areas, North, Center and South-Islands, endures at local level despite the globalized word, societies and economies. In the areas of greatest industrialization, that are also the areas of greatest internal migration, there are the highest scores in adult and vocational competences. This fact can explain regional differences in competences level, surveyed by PIAAC-OSCE specifically in job contexts.

The PIAAC data have pointed out both the importance of Italian educational policies focused on competences and the need to revise the training system. These are key issues to deal with to change Italian status quo not only in the international surveys but also in the real lives of the population.

4. LOW SKILLED ADULTS IN THE ITALIAN FORMAL EDUCATION SYSTEM

Although the PIAAC-OECD survey detected below average scores in Italy, the country did improve in comparison to previous international studies (OECD, 2000; 2005; Kirsh, 2001; Satherley et al., 2008). Higher scores are being reached by the youngest (16–25) cohort. The female population also shows an increase in the general level of competences. Nonetheless, shortcomings in Italy's education and training system remain evident. The ISTAT Report of 2015 underlines low levels of skills. Amongst people from 15 to 65 years of age, only 35.6% possess a high school diploma. In this age group, 12.7% progress to a university degree. Gender numbers in both groups significantly favour women. More than half of the Italian population has obtained primary and middle school certificates. Again, great differences exist between the age cohorts. In the youngest group illiteracy is limited at 1.6% while 59.5% is the illiteracy rate among adults 64 year olds and more. Large regional differences show that the level of education of the youngest is rising. However, there is a very large gap between the rising levels of youthful excellence and their employment opportunities. ISTAT (2015) data indicate that the percentage of the young unemployed (15–24) is 37,9% with a 16-point gap compared to the EU average.

A substantial segment of Italian adults has no continuing-training courses available in their territory. This is the group that suffers since the last decade of the global economic crisis and the changes in Italy's social and health protection system (Eurostat, 2016). The survey shows that Italy has an aging popu-

lation and declining birth rates; immigration is increasing, especially concerning unaccompanied children. There is a high rate of asylum seekers who are unable to read and to speak the Italian language. The national authorities are concerned with these data although the mainstream media do not fully broadcast them or chooses to publish the least troublesome data. So overall reaction in the country remains weak maybe because the general population is quite unaware of the real situation. An explanation to this reaction is probably due to the history of the Italian Education System and also in Italian policies concerning Vocational Training. To make things more difficult is also the fact that there are two different ministries (and administrations) involved: one for education, one for training. That is why the connection between Adult Training and Continuing Education is not easy and immediate. Historical perspective can help to understand better the reasons of this separation.

Before the Kingdom of Italy became a reality, collective figures on literacy did not exist. The first survey was taken in 1861, the same year of the creation of the Kingdom of Italy. The survey found illiteracy endemic with 61% of men and 78% of women so ignorant in writing that they were unable to sign on any document, including marriage certificates which they could not even read. The strategy to change this situation was the enlargement of the formal school system, and the focus was only on children (not on adults). In 1877 the Coppino Act makes schooling obligatory in Italy (Vigo, 2107). Three years of schooling is now required for both young and adults. In 1904, this obligatory period is extended to five years with the Law of Minister Orlando.

After Mussolini becomes Prime Minister in 1922, his fascist government declares war on illiteracy writing 5 acts the King

signs between December 1922 and October 1923. The structural conflict between General Education and Vocational Education and Training can be pinpointed in the school reform developed by philosopher Giovanni Gentile and is still known as the Gentile Reform. Schooling is now required to age 14. After 5 years of universal primary school, instruction splits – one group goes on to vocational training/education – one group continues academics in middle school. This reform remains unchanged for decades, and became the specific feature of the formal Education System. Despite the traditional model of the Renaissance with the rise of the workshops of inventors or earliest scientists (e.g. Leonardo da Vinci), the Gentile Reform separates theory and practice, introducing a social/class division and also an intellectual categorization from those is engaged in (classical) studies and those involved in vocational or practical experiences. For decades, perhaps from the Kingdom's founding, Italy's bureaucrats and policy makers have seen the Italian school system as the only place for knowledge acquisition, and the only tool for social and cultural integration of the young separated from practical and vocational contexts. Vocational Education and Training is considered suitable for students who have a low cultural, social, and economical status or for those who are rejected from the general education structures and can only obtain manual skills.

At the end of WWII, the Kingdom of Italy ceases to exist. The Constitution of the Republic of Italy is approved in 1948. Article 34 establishes 8 years of compulsory – and free – academic education for all children. The Gentile split into Vocational Schools and Academic Schools is delayed until after middle school is completed. So, Training continues to remain opposite and conflicting (Bertagna, 2006) to General Education which is related

to academia, to the intellectual preparation of high skilled professionals or to personal fulfilment. In 1951, a survey reveals that 30% of Italy's population is still illiterate. Though this number seems high, it also demonstrates that 90 years after Italy becomes a country, the nation has reduced its illiteracy rate to 30%. And, unlike 1861, literacy now requires much more than knowing enough letters to write your name. Instead of total illiteracy in 61% and 78% of the populous, 70% of men and women are now able to both read and write. Anyway, rates of literacy start to increase specifically for the young ones because of measures concerning the mandatory school and facilitating the "mass schooling". In fact, in 1963, compulsory education was extended to 8 years. That meand that after 5 years of primary school, 3 years of middle school were provided everyone, even those who usually chose, after the primary school, an initial vocational training (*avviamento professionale*). In 1969, university was extended for all students to all faculties and this open access was no long the priviledge of the *liceo classico* students.

In 1973, after some time of struggle, metalworkers succeeded in gaining a national contract. The "150 Hours" clause was part of this contract, and was extended to all union contracts, and then becoming a national decree. The 150 Hours guarantees the right of working adults to improve their education using the 150 hours distributing them over three years. Many used the hours to get their primary or middle school certificates (Gallina, 2006). It appears the 150 hours did downwardly affect the illiteracy rate. With this non-governmental measure Education and Training become a people's right and also proves that Education and Training can be matching in vocational contexts improving the professionality of adults. In Turin, from the Seventies and during the

Eighties, two non-gevermental and non-formal institutions were founded by groups of adults. These were actively committed in trade unions, associations of volunteers, political parties and no profit organizations. The Popular University (1975) and the Universities of the Third Age – Senior Citizens (1982) aimed, from a bottom-up movement, to stress the civic attention on adults as political, social and educational subjects. Popular universities have focalised on emancipative goals in order to transform the adults from mere workforce to social actors having responsibility in the communities. The Universities of the Third Age have developed the same aims with a major emphasis on cultural and socializing aspects related to the well being of older adults. These universities are still continuing and represent the most important form of non formal organisation of adult learning, based on voluntary participation, and are spread with a large geographical variation in the national territory.

Census data from 1991 shows illiteracy down to 15% of Italy's population. And the decline continues with functional illiteracy (Level 1 and below) falling from 15% in 1991 to 5% in 1998 and those having Level 2 literacy increases 7.8 percentage points over to the 34.5%[23] .

Only in 1997, the Permanent Territorial Centres for Education and Training of Adults (CTP) were created by Ministry of Education to promote specifically adult literacy and adult training. The CTP were formed as state institutions whose education and training perspective were to be life-long and life-wide learning focused on adults. The CTP objectives were: organizing integrated programs of vocational education and training; devel-

23 http: //seriestoriche.istat.it

oping continuing training programs; offering business-school counselling along with other guidance and information. In practice, the main activity of CTP quickly became the organization of language courses providing English courses for Native Italians, and functional literacy to both native Italian and the growing population of immigrant adults. In 2012, the CTP were transformed into Provincial Centres for Education of Adults (CPIA) (Cornacchia, 2013; Marescotti, 2014), currently part of the Formal Education System explicitly dedicated to adults. From 2014, the main CPIAs' aim is the commitment in increasing the qualification level of Italian adults. CPIA's Adult Education Courses are organized on two levels: one – vocational and language courses for adults learning the Italian language; two – academic courses allowing adults to complete Italy's compulsory education requirements by acquiring a primary (ISCED 2 level) and secondary school (ISCED 3 level) certificate. Today CPIA courses take place nation-wide, offered even in prisons. Right now, CPIA's primary student base is foreign adults needing sufficient literacy in Italian language to obtain a residence card. Most CPIA students start with very low levels of prior academic education, and total illiteracy in a language which is very different from their native one. So, a new form of illiteracy is now characterizing the country, affecting the high rate of adults who are recently immigrated to Italy.

Recently, the school reform called "The Good School" (2015) and the reform of the labour market called "Jobs Act" (2014–2015) have implemented a new legal framework deleting the structural approach of the Gentile Reform. The persistence of two separated paths is now mitigated by the change of perspective, more pragmatic than ideological. High unemploye-

ment rates lead students to choose Vocational Education and Training, searching for more specialized skills and shorter time-study than General Education. The latter is now perceived as too far from real life and not suitable to the insertion in the labour market. In a different way from decades ago, Education and Training, Culture and Practical Abilities still remain in opposition. A dual system is now designed in Italy. School and work are strictly associated to integrate education, training and employment, reinforcing apprenticeship. Apprenticeship links the learning pathways of Education and Training system with IVET pathways, trying to reduce the gap between the labour market. Apprenticeship is dedicated to young people aged 15–29 to reach a certificate of higher technical specialisation (IFTS), a professional qualification, an upper secondary diploma. It also concerns young adults aged 18–29 who are able to reach higher education degrees, higher non academics VET (ITS) diploma or a PhD "in apprenticeship" in Universities.

5. CONCLUSIONS

Since its formation as a nation, Italy has shown consistent progress in reducing illiteracy through increasing education of the young. Opportunities for adults to improve their education really began in 1973 with the Metalworkers contract that included the 150 Hours. This was a moment when non-governmental adults established continuing education by their own hands-on efforts (Tota, 2014). In Italy today real opportunities for adults to truly improve their education remain few, but recently some measures have been implemented. In the last decades, International documents and European measures have pushed and financed

most of the initiatives, projects (FSE, PON, Erasmus+, etc.) and activities for adult education and vocational training in the country. In 2014, Provincial Centres for Education of Adults (CPIA) were created to promote adult literacy and adult training amongst the population. CPIA is introduced as a new part of the formal Education System, with specific organization and its own management of teaching pathways. The aim is education and training for adults and young adults. The objective is to help them achieve a higher level in education or training and help immigrates to learn Italian language.

For a long time, higher echelons of education (the Universities) have been closed to adults who did not graduate from the higher academic schools and immediately continue into university. The possibility of an adult in Italy returning to school and acquiring a university diploma – while working full time – is not usual but now exists and is facilitated with online universities. Starting from school year 2015–2016, compulsory school and work are linked by training (*alternanza*) is running. A student can choose different types: apprenticeship, hosting enterprise as a learning venue, virtual training enterprise. In the last years of upper secondary school, school-work transition is boosted with 400 hours (technical and vocational schools) or with 200 hours (general pathways or *licei*) matched with education courses. Young adults can increase employment opportunities and enhance competence levels without perceiving vocational training as inferior or reparative than traditional school education. According to a lifelong and life-wide perpective, the implementation of specific measures reinforcing adult education and vocational training have been taken, although they have started with a considerable delay if compared with many OECD countries.

Formal adult education remains a marginal phenomenon, with very limited social and institutional investments (Barbieri et al., 2014, 344). The scarcity of public attention, and policies dedicated, hinders the return to education or the implementation of work-related and lifelong training. A series of factors hampering Italy's ability to improve this situation such as the high young unemployment rate and the incidence of the long-term unemployment, low economic growth, increase in social costs, and strong labour marked segmentation.

A dual movement of immigrating foreign nationals and emigrating Italian nationals is now characterizing Italy. It sets new issues for adult education and vocational training. If this phenomenon continues, it is highly possible literacy figures in Italy will stop rising and begin reversing. The new challenge will be more difficult: How can Italy educate its rulers to a level of literacy and numeracy enabling them to understand the real needs of the population? How can Italian policies improve adults' level of competence in vocational training fostering continuous improvement of professional qualifications in a labour market facing a constant rising of unemployment rate? How can population appreciate adult and lifelong learning if the basic learning is still not assured to all?

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Re-Educating Adults Through Work: Jobcoach Fostering Informal Learning

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Abstract: This paper is the follow up of another presented to this conference in 2015, 'personal development and competence building in work integration companies'. I presented then our methodological strategy, and I am now able to present results based upon qualitative research. Our results show a variety of approaches towards reeducational practices of adults stigmatized with different features (migrant or ethnic origin, gender violence, long term unemployment, addictions), differential ways of addressing the strengthtening of key and social competences. We have found far less systematic approaches than we might expect in contexts like work integration enterprises, yet we have identified informal learning and support practices where the occupational contexts (recycling, catering, laundry) play a relevant role, but also where the organizational arrangements (of the companies and their networks) are able to result into differential successful practices. We will show a couple of cases, the organization being the case, that will allow us to discuss theories of workplace learning (Malloch et al., 2011), based upon empirical research using Eraut's notion of learning trajectories, in the search to provide tools to companies researched for their enhancement of workplace learning.

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Keywords: workplace learning, learning trajectories, social inclusion.

1. INTRODUCTION

This paper is part of the dissemination of results of fieldwork research we have conducted within our current research[24], between 2015 (July) and 2016 (November). The paper focuses in educational and accompanying processes that happen in Work Integration Enterprises as well as in the contents that are learnt in those companies. We are assessing to what extent we may describe their functioning as learning oriented organizations. We also intend to make our contribution to help specifying their social and educational value, their impact upon personal development and employability, beyond the very fact that they provide an employment.

The following are the most relevant features of work integration enterprises (WISE hereafter): First, they hire three types of workers, to whom they attribute different roles, whatever the occupational area of the WISE. Workers under processes of social inclusion, that are hired to improve their employability; production staff, in charge of the occupational training of the newcomers; accompanying staff, in charge of the employability diagnosis as well as the design and follow-up of the individual learning plan of workers under integration processes. Second, for the latter, WISEs are transition platforms into the ordinary labor market, and therefore their contracts can only last up to three years. Before entering the WISE, these were unemployed

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people, usually either long term unemployed or older than 45; young people abandoned by the youth protection system once they reach 18 years of age; people with addictions to drugs or alcohol; ex-offenders; women victims of gender violence; and other users of the social services.

Third, the individual learning plan is the object or legal reason of the contract, it is oriented towards the development of professional competences as well as social and personal ones, both job-specific and transferrable to other working context. This plan becomes an annex of the contract, and has to be supervised by the Social Services as well as the Employment Services of the region. The individualization of this plan is one of its main characteristics and, consequently, it is agreed by the integration worker, the accompanying worker as well as the production worker in charge.

2. THEORY AND METHODS

A. THEORY

The educational and accompanying work that WISEs provide will be analyzed following the work by Eraut (2007, 2009, 2012) and ourselves (Marhuenda et al. 2010; Marhuenda and Bonavía, 2011; Marhuenda and Navas, 2013), adopting the notion of *learning trajectories*, as they have proved useful to approach learning processes in adult life.

In this section, we will list the hypothesis that guide our research according to the literature we have used. We can group them around two areas, one regarding the companies as organizations, the second one regarding the training processes that happen within them.

These companies pay special attention to the individual learning plans, that they have to register in written form, in order to submit them to the Social and Employment Services. Workers in WISEs are conscious about the purpose that they have, and they become active agents of their own processes, with an increasing autonomy as they improve their employability. They are also aware of the limited duration of their contract; in a similar way to the awareness that production and accompanying workers have about their educational roles. We also expect a certain collective professional knowledge shared by workers that goes beyond the cultural values of the organization and the personal styles of the workers themselves. We expect accompanying workers to play an active role in the first and the final stage of the individual learning plan; while the majority of it will be basically in hands of the production worker, sharing daily work and experience with the integration workers. We also expect the company to arrange its decisions around the individual learning plans.

Regarding training processes, we expect most of them to be rather informal, as most WISEs are small companies and most of the education happens in the workplace (Cedefop, 2015). Most of the assessment is also informal, very specific, and it will rarely be recorded. As Ashton et al. (2008, 20–21) put it, '*in small enterprises, assessing skill needs or training needs analysis is done in a number of ways, with 'observation' being the most commonly used method. Employers and managers often work in close contact with employees, and in the process, they can observe how jobs are executed. Where they notice deviations from set standards of work practices, corrective action can be implemented (…) If relationships are more formal, then counseling may be provided and/or disciplinary action taken (…). Evaluation is another area in which*

observation is the most common method used due to the close interpersonal relations found in small enterprises (…) The focus of the evaluation by the owners was on the impact of training on the job (…) They did not look for any longer-term link between training and business performance'.

Most of the learning will be tacit and hard to elicit, not only in the case of integration workers, often also in the case of production workers, with no specific educational background. In some occupations there will be a chance to address the individual learning plans towards accreditation (Chisvert and Córdoba, 2017) of acknowledged qualifications (cooking, industrial laundry) while in others this will not be possible for the lack of corresponding qualification (recycling occupations). In most companies, integration workers will be in different stages of their individual learning plans, which implies differences in terms of responsibilities as well as, perhaps, pedagogical relations. Personal autonomy (Faedei and Aeress, 2014) is the core around which the educational process is built, and also the key towards successful access into the ordinary labor market. Therefore, as a summary, WISEs may be considered transition platforms or *expansive educational environments* (Evans et al., 2006).

We can therefore take for granted that WISEs do not only provide an employment opportunity for those hard to employ, but they also have the aim to equip them with a structure and an education, where employment is the center but personal emancipation in adult life as full citizens is the goal, no matter how hard this is to achieve with people who have suffered severe exclusionary processes, like homeless or long-term inprisoned adults.

B. METHODS

Ours is a longitudinal study: We attempt to follow up learning and training processes along the development of their individual learning plan. Therefore, we have agreed a series of visits to companies in periods varying between 6 months and one year, to observe and interview workers and their relations, to identify challenges, progress and obstacles to learning as well. Every time we conduct field visits to try to reach between 2 and 4 integration workers, in different stages of their processes.

So far we have conducted our research in 7 regions, in a total of 12 companies, and we have reached out to 46 integration workers, as is shown in table I. In every visit, we observe a full working day of every integration worker, and we interview him/her as well as the accompanying and production workers the following day. Participation in the research has been previously agreed.

Table I. Distribution of fieldwork visits by January 2017.

Region	**Occupational field**	**1st visit**	**2nd visit**	**Total integration workers**
Asturias	Recycling	October 2015	October 2016	3
Bask country	Recycling	January 2016	January 2017	5
Bask country	Restaurant	February 2016	February 2016	5
Madrid	Industrial laundry	December 2015	November 2016	3
Castilla La Mancha	**Restaurant**	**March 2016**	**October 2016**	**6**

CONTINUED ON NEXT PAGE →

Valencia	Recycling	July 2015	July 2016	6
Valencia	Recycling	March 2016	October 2016	3
Valencia	Recycling	January 2016	January 2017	4
Valencia	Recycling	October 2015	October 2016	2
Valencia	Domestic care	October 2015	October 2016	2
Catalonia	Recycling	November 2016		4
Andalusia	Domestic care	November 2016		3
Total number of workers				**46**

All companies and their workers have been properly instructed on the whole research procedure, so they are aware of the long-term commitment that we demand. This includes all confidentiality procedures and documentation, upon previous approval of the ethics committee of the University of Valencia in conducting research with human beings[25] and to which all researchers in the other 5 participating universities comply. An agreement has been duly signed with all participating companies regarding access to information and personal documentation for the purpose of this research, an agreement that also is signed by all workers that are voluntarily taking part in it. Before the visit, we have gathered updated information on the company, the agreement of workers to take part in the research, documentation on their itineraries, aims and actions involved, the description of

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the workplace if there is such a document, as well as any other information like the official qualification, if it applies.

We agree with accompanying workers and the management the most appropriate moment to conduct fieldwork. Interviews are conducted after observation has taken place, though some parts of it may have already happened along observation, if the circumstances advise so. Interviews are semistructured: most of their content is prepared before hand, and there are different scripts for the different stages of the worker along his/her individual itinerary. There are, however, questions that can only be formulated upon observation of work performance.

Along the observation we take notes and occasionally also photographs as well as videos of procedures, routinary actions, working environment, sequenes of work or particular situations that may advise so, always after permission of the workers involved. Interviews are recorded if the worker allows so, even if we do not produce transcripts of them, but to get more accurate information for our report, in order to confirm interpretations, find out explanations, clarify procedures, etc. that are relevant for the learning processes of the worker. We also find out about the most relevant aspects in the progress of the worker in the past months or that have happened since the previous visit.

The information gathered in observation and interviews is combined with that coming out of the personal files of the workers in the company (mainly the employability assessment as well as the individual learning plan) and individual reports are written upon each visit. These reports are assessed and ammended by another researcher in order to guarantee the appropriate use of indicators and to validate the report, which is in fact a first analysis, to be taken into account with the rest of reports. Before

the next visit, we report to the accompanying worker a brief overall analysis of the former visit, usually in written form, to be shared with all workers if appropriate, while we ask for validation of such report.

The main difficulties we have found in our fieldwork have been the following: First, delays and cancelations of visits due to unforeseen events. Second, adjustments of visits to moments when the workload of the company is manageable, in order not to interfere in the production process. Third, delays in the production of documentation and information relevant to prepare the visit. Finally, we have also found the rejection of one worker to be intereviewed after being observed.

3. RESULTS

We will introduce here information upon two of the recycling companies, one located in Asturias, one in Valencia, that will serve us for the basis of discussion.

The company in Asturias has been promoted by a Trust which has recycling companies in other regions in the country. It is the first one established as such, and one of the best known in the sector, though not the largest one.

All integration workers but one are older than 45, and their expectation to reenter the ordinary labor market is low for one of them, older than 60. They are adults with personal and family problems, that have come across circumstances that altered their life and that went through deterioration then rehabilitation processes. All of them have previous work experience in several occupational areas, and most of them have accomplished taskts with more responsibility than the one they hold in the

WISE. One of them perceives himself as a mere worker, not in need of any support (although the assessment of accompanying and production worker is in disagreement with this perception), while the other integration workers value the worth of the personal, emotional and social support that they receive from their colleagues.

There are other WISEs in the same occupational field in the region, for which they are both cooperating partners as well as competitors. The manager has taken decisions that have not been shared by accompanying and production workers, like firing one of the integration workers. Accompanying worker is responsible for training and active employment search in the Trust and is overworked, a reason why she sometimes is delayed in reporting on the integration workers. The production worker has both experience and educational background, and considers himself a trainer and educator, a role he performs in a rigorous and professional manner.

The company in Valencia has just registered as a WISE, after more than 20 years as a self-managed association formed by formerly unemployed people. Like the other one, it works in the area of recycling and it has a couple of second-hand shops. The same worker acts as accompanying and production worker, and she performs her work with enthusiasm and professional criteria, in a rigorous and well documented way. There are two other workers playing the role of production workers, with work experience in these processes but no educational background.

Emphasis on educational processes has been observed in this company, varying from work performance to promotion of basic literacy as weel as social support (assistance provided in managing everyday life problems like housing or health as

well as with personal and family problems, be they legal, with social services or with relatives). There is also an explicit will to raise consciousness on social problems and to actively engage in social participation at the local level. The promotion of a good working atmosphere is also intended in the planning of certain activities as well as on the engagement in leisure activities. All integration workers are women, one of them worked for another WISE some years ago, and she is a young person with no greater expectations neither upon her own career nor training, she conducts a secure life with no major engagements. The other women are over 40 and both have suffered gender violence in their families; both have teenagers they have to look after.

The accompanying worker is a young woman who lives in the area, the same as al integration workers. One of the production workers was a founder of the association 23 years ago. Both production and accompanying workers have personal experience as trainers in their position as well as in different activities like yoga, while the accompanying worker has also educational background.

ADULT PROFILES

We have identified three different profiles of integration workers in these companies, all of which refer to a changing profile since 2008, when the financial crisis started hitting hard on employment, which brought about large unemployment rates among people that had a long learning trajectory. Some companies may have used this circumstance to offer employment to people who needs a job but who would be able to work in the labor market, who do not need any sort of support, and who are, however,

productive people that contribute to increased competitiveness in the WISE.

One of them can be hardly identified as a worker under process of integration: Due to his age, his expectation is that of living on the dole after reaching retiring age once he finishes his contract in the WISE. The factors that have an impact upon his vulnerability are being addressed in the company, and the educational and support work is proving to be valuable, but the chances this man has in order to find a job in the ordinary labor market are very scarce. In this sense, the individual learning plan with this worker tries to cover different personal and social skills, addressing both dimensions of personal structuring of everyday life, hygiene habits as well as relational competences, while trying to instill in him the effort to avoid legal problems, like obtaining his driving license. Readiness to work is out of doubt, but there is room to improve productivity, tidiness and proper accomplishment of goals. The expectation of transition into the ordinary labor market is experienced with fear and and as some sort of punishment, which indicates consciousness on the difficulties of the labor market.

The second one is that of middle aged women, with the clear expectation to enter the ordinary labor market, as well as a consciousness that the jobs they have in the WISE have to be 'emptied' so that other women like them may have access to them. These women get both work and personal support, and their goal is to achieve a full and autonomous life. They feel both acknowledged and grateful for the chance they have and for the work and support that the WISEs are making with them, for the trust in their work performance when they are given new responsibilities, or when they are asked to support newcomers in the company.

This proves to be a form of empowerment that helps counteract the low self-esteem that women who have suffered abuse or gender violence often have, and it comes together with their will to work, to perform, to show they are able by themselves, to feel strong, to share their abilities with the people around them and with society as well. All of these is in contrast with the fears they still have, the lack of literacy skills and of proper educational background (which will be covered by attendance to adult education institutions); and with the expecatation to take charge of their own lives and to be responsible for them and their children too.

PROGRESS

In the two cases we are analyzing, we have only found successful cases, where integration workers have accomplished most of the goals they set for themselves and have left the WISE upon completion of their itinerary or because they wanted to jump into the ordinary labor market before the end of their contract with the WISE.

ROLES

Accompanying and production functions are clearly delimited in the Handbook on Accompanyment (FAEDEI/AER-ESS, 2014) but this is not always the case in everyday practice, which happens to be far more complex, richer and probably not so idealistic, sometimes also not so desirable. The pattern set by that reference publication is an utopical standard rather than a description of real WISEs. Accompanying role is sub-

ject to resistance and even rejection in several cases. Often, the older the integration workers (even more in the case of males), the more reluctant they feel to be supported by accompanying workers. On the contrary, when it comes to production workers, their support is often welcome, they act as models for people and they are given the authority that sometimes accompanying workers lack. This so so in a way that production workers may perform accompanying roles that exceed their legal functions, but they are the people in the condition and with the ability to do so, and this is never a problem for the management of the companies.

In one of our companies, production worker and accompanying worker, jobcoach and lifecoach, are performed by two different people. In this case, the accompanying worker also performs some other tasks, for the company but also for the institution promoting the WISE, which results in a loose accompaniment. A relevant factor to distinguish to what extent the accompaniment work is properly develop is the location of the job of the worker in charge, be it in the same premises than integration workers or not. This is relevant for it allows for frequent contact with the workers, for chances to get feedback from production workers, for opportunities to perform some work alongside the integration workers. In a sense, accompanying workers may be perceived as insiders or outsiders to the process by integration workers, hence allowing for further opportunities to intervene or not.

The more duties the accompanying worker must perform for the promoting institution, the higher the dispersion they express when it comes to accomplish their role alongside integration workers. Among these collateral duties, we have found management of training plans, writing memos and reports, par-

ticipation in networks, guidance workshops and intermediation practices, all of which hinders the appropriate performance of their social and educational support in the company. In both companies, the management is aware of these duties and serves the needs of their coaches, well aware of their difficulties but also of the relevance of these positions.

Nevertheless, beyond the conditions under which these roles are performed, we have identified different forms of performing it that are related both to personal features of the worker in charge as to the demands of accompaniment and production.

CASE 1 – PRODUCTION WORKER

Case 1 has a long professional experience, as well as a declared educational call, which brings him to take part in complex distance training processes which content has nothing to do with the support they provide in the WISE.

He performs as jobcoach in different occupations within the company (warehouse and driver, not in the shops that the company has). Most of the support he is able to provide relies upon personal relations, side by side with the integration workers with whom they carry on their everyday production or service provision.

Among his activities, he trains, corrects, allows the integration worker to make mistakes, helps them reasoning, gives them responsibilities or holds them accountable for their work. He accomplishes all of these being patient and discrete. Dialogue and spoken word is a key dimension in this accompanying performance, which he plans according to the possibilities offered by production needs.

CASE 2 – PRODUCTION WORKER

Case two is a young worker with only limited professional experience, which she has combined with specialized training, including university degree related to the production she perfoms in the WISE. She is also involved in educational work out of the WISE, assisting young students in their secondary and university studies. These have given her a long experience in educational support.

This worker was raised and still lives nowadays in the same neighborhood where the WISE is located and in which several workers also live, which provides her with a very good contextual knowledge and understanding of the living conditions of the workers she is in charge of. In her daily work, she supervises her workers, both by her presence in the same space that they are occupying but also via cellphone contact, as she has arranged a WhatsApp group in which they can communicate and keep contact, both in case of need as well as in order to remind them she is available to support them and to show them that she really cares. She has done so in a manner that all integration workers are happy to be members of that group and they participate actively and with great enthusiasm in it. This has become a very good tool to motivate and support constantly her co-workers, which has become evident in all the observations we have conducted in the company, even if they run the rist to fall into too private issues, for the strong emotional involvement of the members of the group. This production workers performs in an accompanying work when she argues and says out loud the reasons behind her decisions, in a way that sometimes might hinder

participation of the integration workers, not letting them make mistakes. This may be the case to avoid great disturbances (issues related to housing, social service support or legal assistance) as well as to favor the education of their children.

ASSESSMENT

We have already indicated we have not had the chance to attend to first-hand evaluation sessions among accompanying, production and integration workers. We have observed some evaluation practices as they happen on everyday work performance, mainly by production workers, always as punctual examples. But in our interviews with all actors we tried to research upon how evaluation is performed and whether it is in a formative way or not.

And we have found that evaluation happens in an informal way, as is also the case for so much of the learning in WISEs. Training, accompaniment, evaluation, all of them happen around the axis of production, of daily work performance, with the result that evaluation si rather incidental than planned, and it is hard to identify registered evidence from it, as we might have expected, structured evaluation, due to the intentional educational features of WISEs. This applies both to evaluation that shows progress as well as for the cases of unsuccessful trajectories, where there are problems that do not allow for appropriate continuation of the integration contract. Evaluation often happens when and where things happened, whenever it is demanded; it is immediate rather than delayed, be it to praise or to amend performance and its circumstances. Therefore, most of the evaluation is conducted by production workers rather than by accompanying roles, except when both roles are performed by

the same person or within the same physical location. Training and educational guidelines upon evaluation are therefore often in hands of jobcoaches.

There are hardly elements that are conducive to reflection processes upon professional practice, upon the work environment, upon one's own management of the individual learning plan. Integration workers are invited to reflect as a punctual strategy that we have identified in both cases, while we guess that in other companies it is rather the accompanying or production worker who reflect instead of the integration worker, even if they share their reflections.

It is therefore not strange that there is so little attention paid to evaluation, the same as formative processes are also loosely structured, far more than we might have imagined. Perhaps, the lack of structure is an appropriate tool, instead of the will to have people under constant surveillance and control, even *schooling* trends of these educational processes.

4. ANALYSIS

Informal learning as it happens in WISEs helps enhancening the education of adults with integration contracts. Progress is possible thanks to the development of competencies in occupational, personal and social domains, and here we will refer to the interpretations of the most relevant areas in our analysis, that of the learning trajectories.

We can conclude that the different learning trajectories have different weight in the attention that they receive in work integration companies:

Task performance is the learning trajectory most easily identified and the one around almost all interventions are shaped,

whatever the stage of the development of the itinerary one fins him/herself in. The speed a person reaches in his/her performance is a crucial element both in processes where almost no qualification is required (recycling) as well as in those where there is more pressure upon prices and times due to the market competition (laundry). In restauration, working in teams is one of the aspects that are fostered to a major extent, given that good quality service depends upon a collective arrangement of work, no matter whether all workers share time and location or whether they work in shifts.

Personal development is one of the main goals of accompanying work that WISEs take charge of, and it is the axis of the individual learning plan. Among the different categories of knowledge that shape personal development, self-evaluation is one of the most complex ones, and it is closely linked to awareness and understanding both of the context and situation as well as of the values of the organization.

Furthermore, there are other types of knowledge of personal development, like handling emotions and relations, as well as social skills, that no matter how simple they are, may be practiced in the workplace on a daily basis. Learning trajectories in the domain of awareness and understanding, together with those related to role performance, have been harder to identify in our fieldwork. Our assumption is that this has been so for the fact that the stress that WISEs put on it is not as intense as the effort they put upon task performance and personal development. Accompanying workers seem to have greater responsibility upon personal development, awareness and understanding; while jobcoaches supervise the development of task and role performance, as well as working in teams.

The possibility to have an impact upon each of the trajectories is subject to the intervention of jobcoaches rather than to accompanying workers, and it is the area of awareness and understanding the one where the effort of accompanying workers should be greater, also the one where a closer cooperation among both roles should happen.

5. DISCUSSION

In order to discuss our results, we turn back to our initial assumptions and hypothesis, that we may group again in two different sections, one on the companies as organizations, the second one on their training practices.

Regarding the organization of Work Integration Enterprises, we may say the following:

WISEs provide more opportunities for integration into work than for social inclusion in a wider sense. Individual learning plans, at least as they are devised and registered, are not a tool used as often and as accurately as it should happen, for which they do not become a reference milestone neither in production nor in accompanying work of the coaches.

WISEs do not perform a periodical and detailed written log of the agreements and variations in the itineraries, and this is due to the overload of work of accompanying workers, while jobcoaches are not to be hold responsible for this. Too many integration workers do not raise the consciousness of participating in an itinerary, for which his/her agreement to the goals and actions set is sometimes doubtful. This is a clear area for improvement in the support provided by WISEs as proper learning environments.

Nevertheless, integration workers are thankful to the opportunities provided by the companies, as well as by the institutions promoting them, even in those cases where they are not aware of the specific process they develop with them, or if they do not consider themselves as the main actors in their own itineraries. This is an obstacle in the development of greater autonomy.

Workers with integration contracts are in most cases aware of the limited duration of their contracts, even if some companies have sometimes offered the chance to remain in the company with ordinary contracts by the end of the integration period. This being an understandable practice, it is not the same as the chances we have identified where the WISE offers an integration contract to someone who in fact does not need any form of personal or work support, but just a contract, for having worked in another WISE before the current one.

Not all production workers are clear about their role as reference models or jobcoaches for integration workers. Accompanying workers have no doubts about what is expected from them, but production workers sometimes reject their function and act as if they worked in ordinary companies, not WISEs. Working conditions have an impact upon these circumstances, for the high pressure that workers in WISEs suffer in order to hold them productive and competitive enough. Accompanying workers, on their side, would thank the chance to devote more time to the performance of this role. Both accompanying as production workers have developed a shared expertise based upon experience and practice; but they lack specific common background and training that contributes to identification of clear roles and tasks. Continuing education is a need that we have identified.

These two roles do not weigh the same in the process of social inclusion. Production workers have a greater control upon this process than accompanying workers do and this is so even in the welcoming phase, even if it is the latter that are in charge of the process and who are responsible to define the individual learning plan. Transition from the WISE into the ordinary labor market is the least developed and professionalized stage in the companies, and as a result of it has turned into the hardest process that production and accompanying workers have to perform. Social Services and Employment Services tend to stay aside all processes once the WISE has hired the integration worker, as if employment by itself was a good enough measure to accomplish full inclusionary processes. Their involvement is highly appreciated by the companies. The stages in the integration process (welcoming, consolidating employability competencies and transition into the ordinary labor market) do not have a clear effect upon the organization of the company and the decisions taken around the very itinerary or individual learning plan. The most relevant phase is the welcoming one, that can be expanded in time, and decisions in this stage are taken not only upon work but also on side elements like enrolling in adult education courses, personal work with the integration worker on his/her own expectations, even if the follow-up is not as systematic as we expected.

When it comes to training and educational processes within the work integration enterprises, we may come to the following controversies:

Most of the training processes are linked to task performance and they are informal. Formal training activities happen in specific stages and are often short-term.

Assessment is also informal, momentarily and is not registered, not as frequently as it should, not in a written manner. Therefore, most of the work performed by production and accompanying workers in their support of the integration workers has to rely upon their impressions and memory rather than upon evidences gathered and subject to contrast with the integration worker.

Professional knowledge of production workers is very varied, while accompanying workers show a generic common knowledge base that is hidden behind certain sense of guilt for not being able to perform their work as they are capable and would like to. Several production workers have received specific training for the jobcoaching function that they perform, or at least they show a clear call towards educational work, in the interest of the integration workers they have to support.

Accreditation of knowledge acquired through experience is not a common practice, only attempted in a loose way in the occupational field of restauration.

The three stages that shape the invidual learning plan do not act as a sequenced curriculum guideline. There is no evidence of different pedagogical relations with integration workers; decisions taken by production and accompanying workers have to do with the capacity shown to work autonomously, with certain disregard of the formal stage in which the person finds him/herself.

There is no evidence of systematic efforts addressed to fostering personal autonomy in integration workers, neither a long term planning that might facilitate their entry into the ordinary labor market, hence leaving the secure and stable environment of the WISE.

Therefore, we may consider work integration companies as limited learning platforms, where itineraries have more to do with the fact of having a job than with the training received on the job. Accompanying practices, be they developed by accompanying workers or jobcoaches, exist and support personal processes, but inclusion is achieved through the active involvement of the workers themselves. The most important contribution of WISEs is equipping unemployed people with a job lasting up to three years; all other support provided is helpful and even when considered as the consequence of a systematic and intentional support, autonomy is the result of the personal development of the worker.

6. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

With the evidence and results we have found, the interpretation that our framework allos us and the discussion we have explained above, we cannot state that work integration enterprises are strong transition platforms. The two cases we have shown in more detail run in this direction, but they fall behind their expectations to act as educational environments, work and production come before learning and education. Furthermore, in some other companies where we have conducted research, this has shown that they prolongue the integration contracts even when educational processes are not possible any longer or no extra effort is put into them, hence not fulfilling the learning expectations that integration workers might have.

Perhaps we have been to ambitious or too naïve in our research design, it may be the case that we have not been able

to identify the relevant information to adequately answer our research questions, perhaps we have not been able to identify areas of improvement for our companies to increase their educational potential and their ability to foster inclusionary processes. Perhaps we need to pay more attention to the specific competencies develop, to the processes of assessment of employability or to hidden follow-up practices.

We have not been able to identify specific actions oriented to formal vocational training or to accredited training of competencies as integral elements of the individualized learning plans with integration workers. We have not been able to identify enough evidence of processes leading to the development of critical thinking or able to raise awareness of the current context and the personal circumstances, articulated around an emancipatory or empowering effort that these companies intend to achieve with their workers. Therefore, we end up our contribution with the following suggestions to improve our research: First, to conduct research with integration workers upon finalization of their contracts, in order to grasp their itineraries and their learning pathways. Second, to pay attention to the chances offered by the regional administrations regarding accreditation of knowledge in those occupational fields where examination processes are open. Third, to research upon the role of formal adult education in those cases where integration workers have enrolled. Fourth, to look in closer detail to the teams formed by accompanying and production workers, instead of analyzing them as individuals that work together, and to see to what extent it is the pairs/teams they form, rather than the individual performance, what constitutes an effective support behavior. In our current research, we are trying to iden-

tify positive examples of educators, of learning processes as well as of organizational practices.

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Upper Secondary VET in Sweden With Focus on Apprenticeship and Workplace-Based Education: Past, Present and the Journey Ahead

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Abstract: The purpose of this chapter is to present the workplace-based learning that takes place within the publicly funded VET in Sweden at the upper secondary education level. More than an overall background of upper secondary vocational education particular attention is given to the relationship between school-based and work place-based training (apprenticeship), on one side, and how the cooperation between educational suppliers and working life partners is shaped, on the other. In our time of accelerated globalization, where the current and the future status of VET is a priority issue in the discussion agenda of national and international educational policy bodies, it seems that among other challenges the connection between school and working life is urgently important, and a crucial quality dimension of the provided vocational programs. The presentation ends up with some reflections on the future of VET in Sweden with tentative proposals for policy considerations and actions.

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1. WORKPLACE-BASED EDUCATION – INTRODUCTORY THEORETICAL NOTES

The context within which learning takes place is characterized by its special didactics. Each learning situation follows its own curriculum and specific methodological approaches. Content and organization are governed by a series of factors that frame the learning process and define the educational ideals (and ambitions) strength and range (Lundgren 1972).

The so-called traditional teaching has for centuries been formed and cemented with governing rules and structures. The size of classrooms, the perception of what is central knowledge and what subjects it belongs to, "the general pattern of school organization", designating according to John Dewey (1938/97) the relations of pupils to one another and to the teachers etc., have created a specific organization of teaching practices that have guided the work of generations of teachers. Tyack and Tobin (1994) call that kind of standardized organization of teaching for "the grammar of schooling". By the grammar of schooling we mean the regular structures and rules that organize the work of instruction. Here we have in mind, for example, standardized organizational practices in dividing time and space, classifying students and allocating them to classrooms, and splintering knowledge into subjects (see a.a, p. 454).

In classrooms, life is organized by teachers who usually instruct, monitor and control students using textbooks. In the history of schooling there have been attempts to challenge some

of the rules that constitute the grammar of schooling by, for example, using time, space and numbers of students in more flexible ways, to carry out teaching outside the walls, to merge specialized subjects in new core courses, and to create teacher teams to deviate from the principle of one isolated teacher in a self-contained classroom. The logic of reproduction (reproduction of culture) is prevailing in classrooms: of knowledge, of behavioural patterns, beliefs and attitudes, which are expected to facilitate an individual's functional integration in society and working life. When instruction and learning take place outside the school classroom, e.g. a workplace, as is common within vocational training, then a different logic prevails: the production logic (production of goods). Unlike the theoretical school subjects, such as mother tongue, mathematics and history, vocational subjects are struggling with a conflict between society's demands on developing general skills, on one hand, and the working life's different views on what vocation-specific skills that should be prioritized and how they would be acquired, on the other hand (Höghielm 2001).

The challenge for all vocational education is to find a balance between the conflicting demands that are imposed on VET, due to its hybrid existence in both a school- and work-based environment culture, as it is stated by policy documents and curriculums. In traditional school-based VET, the practice of a vocation is arranged as simulated real-work-place activity. Following the grammar of schooling, this didactical approach appears to emphasize formal education and verbal instruction from a teacher to a student. As a counterpoint, another approach is put forward in the form of workplace-based training, as an integral part of the formal education, which under-

lines the importance of learning that is grounded on the student's own experience. The experiential (vocational) learning is based on doing and occurs in authentic work environments, where the students are involved in practical action while participating in a working community. Thus, it is the environment itself, or the context of work with its particular resources, social relations, local work culture etc. (cf Kirsh 2001), which determines whether a person acquires the necessary vocational skills. Both of the mentioned approaches have their limitations. The former approach leads to transmission of basically theoretical, decontextualized knowledge, with difficulties in putting them to practical situations. The latter – due to their attachment to specific situations – provides a theoretically limited understanding and learning. Furthermore, it is argued that these approaches are to various degrees rooted among teachers who are teaching traditional academic subjects and those teaching a vocational subject (Höghielm 2001, p. 72).

However, VET needs to consider that every profession is characterized by its professional culture and professional praxis that follow particular rules or procedures (professional traditions), and those cannot be conveyed in a "schoolish" manner but they are transmitted through direct participation in vocational practice. Ultimately, knowledge is the outcome of something that people experience in a practical activity, displayed in specific situations. Knowledge is something successively acquired in a social context (Wenger, 1998). As far as professional competencies are concerned they are composed of knowledge, skills and attitudes in relation to a certain professional context with its specific culture and practices. Nevertheless, all these assumptions would be meaningful if they rest on a pedagogical/phil-

osophical foundation that connects purpose, methods and content with respect to the experiences of the learner, e.g. an apprentice, in a business environment where battles between the past and the present shapes the future. Therefore, understanding the logics of schooling and of working life as different ways of practicing "education" will presumably create conditions for bridging the gap between them and improve the quality of VET. In the following account we will follow more closely how VET has been related to these two concepts of education and training, using official documents, such as state investigations, government bills and regulations, and scholarly texts.

2. AN OUTLINE OF VET IN UPPER SECONDARY SCHOOL IN SWEDEN

Every country's vocational education is conditioned by its economic, political and cultural development. In Sweden, the view regarding the aim and role of VET has historically fluctuated between provision of general skills, on one hand, and occupational skills on the other (CEDEFOP 2012). Another characteristic of the Swedish VET is the relatively strong commitment and participation of the working life organizations in the design and implementation of vocational training. However, vocational education has over time assumed various guises. In the past, vocational training after compulsory school was mainly provided at workplaces as a typical apprentice-master relation. The novice learned the practical trade or craft and the associated conduct rules under a master's supervision at work.

The emergence of industrialization demanded a specialized labour force for an increasingly rationalized production process,

which made it difficult to provide training in the workplace like before, not least for safety reasons. A government bill in 1918 (see SOU 2008:27, p. 196) proposed the establishment of vocational youth schools (praktiska ungdomsskolor), which together with apprenticeship schools (lärlingsskolor) and technical vocational schools (tekniska fackskolor) became part of the state education policy. Since then, VET has gradually become more school-based, expected to meet the needs of both vocational skills and basic citizenship competencies.

A major investigation committee was launched 1937 (SOU 1939:14) to suggest qualitative (updated content), and quantitative (access to appropriate facilities and equipment) improvements, for the municipal system of engineering schools (verkstadsskolor) that failed to meet the demand of well-educated labourers, as well as the rural areas' needs of vocational training. Well-equipped engineering schools, according to the committee's proposals could offer skill development through rich opportunities for productive work. The steering Board of these schools consisted of representatives of the local government and partners from the working life (employers and employees).

In 1940 a new agency was constituted by the labour market organizations – Arbetsmarknadsorganisationernas yrkesutbildningskommitté (AY-committee) – with the purpose to investigate and make proposals to the labour partners on how the apprenticeship education could be effectively organised. Vocational education, according to AY- committee, was to meet the industry's need for skilled labour through apprenticeship. This would be achieved through education in the workplace, supplemented by theoretical instruction in private or municipal schools, and based on negotiated agreement between the parties

rather than regulation by law. At the local level, the AY-committee co-ordinated industry-specific apprenticeship committees, with the task to follow up the demand for skilled workers, and proposed state measures to meet that demand. The AY-committee wanted to create a very close relationship between work and school and therefore advocated a combination of school-based education and practical work in companies.

In 1944, a new state agency was established, the Royal National Board for Vocational Education (Kungliga överstyrelsen för yrkesutbildning, KÖY), to increase and coordinate the vocational education in the country, and to involve the labour market organizations more in the planning and implementation of VET. It should be emphasized here that the representatives of the labour market organizations were in majority in the KÖY's board. KÖY collaborated closely with various vocational boards in the labour market (yrkesråd) and professional trade councils (branschernas yrkesnämnder) and provided information, advices and recommendations regarding organizational and curricular matters.

In the post-war era the School Commission of 1946 (SOU 1948:27) stated, in its main report, that VET was insufficient in size and unevenly distributed across the country. It also found that vocational education disadvantaged women and to a large extend focused on industrial activities and crafts. The Commission proposed an extension of compulsory school attendance to nine years of which the last year would be designed as a preparatory training for the majority of students (about 70 percent of the graduating class, 15 years olds), with practical work experience combined with general subjects.

The Commission's proposals were further elaborated by an

expert group, which considered in its analysis the fact that vocational training in workplaces had gradually become more difficult, due to the increased pace of work, a technical specialization, complicated and expensive equipment and thereby an increasing risk for accidents at work. The bill that was adopted in 1955 (see SOU 2008:27, p. 199) advocated an expansion of municipally run VET financed with state funds. As a result, the school-based VET expanded during the subsequent 15 years and the number of students increased threefold. To sum up, the period from mid 1950s are characterized by a wide expansion of VET, which was part of a general expansion of education in society. During that time vocational education was transformed (in Sweden) from a relatively marginal position within the educational system – vocational education was rather perceived as part of the labour market – to a central educational policy matter. The state funding with significantly increased government subsidies certainly contributed to multiply the number of vocational schools in the country (Nylund 2013; Håkansson & Nilsson 2013; Olofsson 2010).

In 1963, a year after the 9-year compulsory school introduction, a VET preparatory Committee (Yrkesutbildningsberedningen, SOU 1963:3) was appointed, with the commission to propose measures to address the need for VET to the same extent as theoretical programs. VET would also include care and service areas. In order to ensure an up to date vocational education the Committee considered a continuous upgrading of curricula and increased funds for modern equipment, as well as a stronger collaboration with the social partners. The vocational part of the education was emphasized, which meant that more focus was put on cooperation, planning and problem-solving skills than

plain manual skills. It was also suggested that three school forms (the Gymnasium, the Trade School[26] and the Vocational School) would transform to an organisationally cohesive and centrally coordinated upper secondary school (Gymnasieskolan), with respect to objectives, planning and resource use.

In 1970 VET became integrated in the upper secondary school in the shape of programs that lasted for two years, and included an increased amount of theoretical subjects. The changes in vocational education followed a general trend in the extensive reformation of the education system. There was a clear commitment to avoid "dead ends" in the system offering opportunities for VET students to access higher levels of the education system. The 1971 reform[27] integrated the vocational lines (programs) in the upper secondary school and formally equated them with the more theoretical lines that could provide access to higher education. As a consequence of treating VET equally with other theoretical lines in upper secondary school education, decreased the contacts and cooperation with the labour market significantly. Thus, VET became more school based than vocational education used to be before the reform (see Nilsson 2013).

With the introduction of the new National Curriculum for the integrated secondary schools (Lgy70), VET came to be organized in 14 lines, 2-years each, divided into specialised branches.

26 Trade School (Fackskola) – a school form that was based on elementary school grade nine and operated between the years 1962-1971, offering three 2-years long programs; economic, social and technological. Trade School was more practical than Gymnasium, but more theoretical than at that time operating Yrkesskola (Vocational school). The latter was a voluntary form of vocational schooling in Sweden, from the 1800s to 1971, based on 6 or 7 years' elementary school (folkskola).

27 The decision was taken in May, 1970, and came into effect from July 1, 1971.

They were sectorial lines, which focused on the second year on specific professions within a sector. As regards the content of the VET-programs the vocational subjects were sharply decreased. For that reason, a two years VET program was perceived as a started, and absolutely not finished, vocational training. Completed training was supposed to occur at a work place in conjunction with employment after secondary school. In order to complete a vocational education, the vocational schools and the social partners would agree to set up "completion training contracts". However, this proved to work only in a limited number of enterprises and organisations. The difficulty in achieving sectorial agreements prompted proposals by a Working Group (ÖGY), appointed to review the secondary school VET, to experiment with three-year vocational secondary education during the period 1988/89-90/91.

On the basis of ÖGYs suggestions (SOU 1986:2; SOU 1986:3), the government bill (Prop. 1987/88:102) proposed guidelines for a three-year trial and development period, regarding vocational tracks/lines in upper secondary schools with elements of workplace-based education (arbetsplatsförlagd utbildning, APU), amounting to 10 percent of a track's total volume, during the first and second year, and 60 percent in the third year. The purpose of the APU was to make the training more realistic and facilitate students' transition into employment after graduation. This was a great change comparing to existing programs, where the work experience component covered only about 6 percent of the total amount of each program. Moreover, APU would follow a syllabus and the student would have access to a trained supervisor in the workplace. The content of the syllabus for the workplace-based training was determined by the

National Board of Education in consultation with school principals and central vocational/professional councils (centrala yrkesnämnder). The school- and work-based elements in the three-year programs would be assigned in accordance to what contributed to better learning results. Although the school principals were responsible for the acquisition of APU places, the proposal encouraged close cooperation with the local professional councils, which were expected to have a substantial influence. In case APU places could not be obtained the training continued to be school-based, where students were offered alternative courses as compensation for unperformed APU.

In 1991 a new reform laid the foundation for a three-year vocational upper secondary education (Prop. 1990/91:85). VET would be course-based and give a general basis for further studies in higher education. All national programs should also contain a common core of compulsory subjects and provide eligibility for further studies at the post-secondary and university level. These common subjects occupy about 30 percent of the total instructional time[28]. Additionally, the content included specific subjects for the various programs as well as space for individual choices. A course-based upper secondary school was meant to contribute to greater flexibility than the previous track structure. Fourteen

28 For students with a vocational diploma, to obtain basic eligibility for higher education, was required to have passing grades in certain courses in Swedish/Swedish as a second language, English and Mathematics (general requirements). Also specific entry requirements were needed to access some higher education courses or programs. For example, engineering courses required that a student had successfully completed a higher level of mathematics.

national vocational programs were established[29] with the aim of providing a sound basis for professional activities within a broad vocational field, while the completion of the vocational training would take place in the workplace. Collaboration with working life was considered of vital interest, and it was expected that labour partners should actively participate in the shaping of the secondary VET. By extending the upper secondary vocational education with a third year, mainly with theoretical orientation, the gap between theoretical and vocational study programs was reduced and, at the same time, the direct link between vocational education and the labour market was weakened. The VET-programs were nearly 85 percent school-based and contained at least 15 percent training in a workplace outside the school (APU). The school principal decided how the distribution of the APU would be made over the three school years and was responsible for finding workplaces willing to receive the students. The training at work should be planned and implemented on the basis of the current program curriculum and instruction goals. It would also be under the guidance of a qualified tutor/supervisor available at the work place. The school should ensure that the supervisors possessed the qualifications required for the task. If tutors were lacking qualifications the school was obliged to organize training for them. The school was also responsible for the supervision of students during the workplace training and controlled that it was used as a regular employment (Prop 1990/91:85, p. 102).

29 The 1991 reform was aimed to radically change the whole upper secondary school and comprised the introduction of 17 3-year national educational programs, of which 14 were vocational (Child Recreation, Building and Construction, Electricity Engineering, Energy, Vehicle Engineering, Business and Administration, Handicraft, Hotel and Restaurant, Industrial, Natural Resource, Food, Media) (Persson Thurnqvist & Hallqvist 2014).

In the early 2000s there was a lack of labour force in many occupations with a secondary level education. Even though the demand for vocationally trained people within such areas as health care, construction industry, engineering industry, transport, hotel and restaurant, service and crafts was high, the need for general competencies increased steadily. Not only abilities such as to read, write and count (the three Rs – reading, writing and arithmetic) belonged to general competencies, but also communication skills, learning skills, problem solving skills, accountability, etc. (cf. EC 2007). The possession of fundamental basic skills was considered more important than early professional specialization, and more productive in the long term. A parliamentary committee, titled "Eight pathways to knowledge – a new structure for upper secondary school" (SOU 2002: 120), was assigned to submit proposals for a future design of the upper secondary school. The Committee's opinion was that the structure of upper secondary school from 1991 was still valid, with the exception of the knowledge mission, which had to be changed in favour of more broad, general knowledge. The challenge for the Committee's proposal was to design a program structure, which combined the demands of broader skills by the working life with the expectations of a vocational training, preparing for employability in certain occupational areas.

The subsequent bill (Prop. 2003/04:140) proposed a basic vocational education in upper secondary schools that would give both general key qualifications, and provide specialist knowledge. Concerning workplace-based training the bill proposed that the concept of APU (workplace education) would be replaced by the concept of APL (workplace-based learning). The reason was the shift that took place in educational thinking which led to a focus

on individual learning needs rather than on teaching. All students in secondary schools should gain insight into working life conditions and tasks. Vocational students should also get at least 15 weeks[30] of training in a workplace, and more students should be given the opportunity to do an internship in another country.

VET FOR EMPLOYMENT AND LIFELONG LEARNING

The government bill (Prop. 2003/04:140) also justified its proposals with reference to changes in the business sector, as well as to the commitment of making upper secondary school education a good preparation for young people, who will be active in society and working life to the middle of the 21th century. The pace of change in the future, it was argued, is likely to be consistently high and in this perspective, it is important that all young people can acquire a good basic knowledge and insight so as to constantly learn new things. In such a context it was considered that a broader education provides a better preparation for lifelong learning. The most specialized training was expected to take place after secondary school, in post-secondary education or employment. Additionally, a wide initial education was anticipated to offer more choices in the future. Another objective of the VET reform was to increase the quality of European vocational education and to promote labour mobility within the EU, in accordance with the Copenhagen declaration, which was adopted in 2002 by 31 European Countries. An important part of the work was to promote openness and transparency of

30 The wording "at least 15 weeks" does not imply any upper limit. It is entirely possible for schools to offer more time for APL with good quality.

Member States' system of vocational education at the basic level, and make it easier to recognize professional competencies and qualifications between countries (SOU 2002: 120).

The introduction of a course oriented upper secondary school resulted in 17 programs composed of a variety of courses. The advantage of such a system is that students get the opportunity to select courses, which can make them more motivated to study. An analysis of the reform undertaken by the Swedish National Agency of education (Skolverket), noted: "The concentration on the course caused the reform to be defined by its operationally smallest part. Thus, the big picture and the purpose of the reform were lost" (a.a., p. 22). The Committee's conclusion was that upper secondary education would become more coherent with a new structure, which should entail a further development of upper secondary school, based on a principle of successive electives. The reason for a structure with successive elections was to offer students a better basis for their study choices and in this way prevents program changes due to incorrect choice.

The subsequent government bill (Prop. 2003/04:140), introduced a common diploma (degree, exam) for the existing secondary school program structure that was maintained, in which course grades would be replaced by subject grades. In the meantime, the conservative government that took office after the elections in September 2006, suspended the implementation of the decided changes and appointed a new Inquiry Committee with the mandate to investigate the introduction of three degrees instead of one: a theoretical exam that leads to higher education, a vocational exam that provides in-depth vocational skills, and an apprenticeship exam for students who prefer to learn a profession in the workplace than in school

(see directives to the Committee in SOU 2008:27, Annex 1). The government justified the appointment of the new Inquiry Committee on the grounds that all the upper school courses had become more or less homogeneous with few differences between the various programs. All pupils at national and specially designed programs, according to the Governments position were at the time being obliged to study a certain number of courses to gain the basic eligibility to higher education, regardless of the students' goals, talents and interests. It was also claimed that many programs with vocationally-oriented subjects had become too theoretical, with too little space for vocational subjects and, to some extent, not adapted to the labour market needs and requirements.

The analysis was also shared by the appointed inquirer in the final Committee report (SOU 2008:27):

> I would like to point out the difficulty today in defining what an upper secondary educational programme is. They can vary almost indefinitely. Upper secondary education is formally defined as comprising 17 national programmes, but this is not the entire picture. According to the National Agency for Education, there are about 9 000 local courses and a large number of local branches. Within the Industry Programme alone, there are about 200 local branches and other programmes also have many variants.
>
> (...) There are also programmes that combine vocationally oriented and study oriented programmes, perceived by many to be confusing.
>
> (...) There are also many students (12 percent) who switch programmes during their first year at upper secondary school.

> Receivers (universities, companies and organisations, etc.) of students from this diversified upper secondary system find it difficult to assess the student's capabilities and it does not make it any easier for students to get their first job after school. Receivers have also criticised the education for not being on the adequate level. This may well be the reason why working life representatives have involved themselves in the issue of access to education and its design. The development of Technical Colleges (Teknikcollege) and Healthcare Colleges (Vård- och omsorgscollege) is a case in point. Representatives of the higher education sector have also criticised the prior knowledge of students. (p. 55)

3. THE 2011 UPPER SECONDARY EDUCATION REFORM

The aforementioned Committee's reasoning and proposals for a new structure of upper secondary education were eventually adopted in the Government Bill 2008/09:199 and, after being approved, the first students in the new upper secondary school were enrolled in autumn 2011.

Upper secondary schools today (2017) offer 18 national programs, of which 12 are vocational programs that provide a foundation for working life and further vocational education, and 6 preparatory programs for higher education. Students in vocational programmes can attend a school-based education (skolförlagd utbildning) or an apprenticeship education (lärlingsutbildning). The latter is considered as an alternative to the former. The difference between the two vocational routes is that students who choose the apprenticeship route have a significantly larger part

of their education located in a workplace[31]. With the reform, and contrary to what was in force until 2011, the right-wing government changed the regulations so that not all vocational programs automatically would provide eligibility for higher education. Thereafter, for a vocational degree to allow access to higher education it required passing grades in the same courses as in the other higher education preparatory programs, i.e. Swedish or Swedish as second language, English and Mathematics (see Table 1):

Table 1:
Requirements for vocational diploma without and with basic eligibility for university studies (Skolverket 2012, p. 21)

Requirements to obtain a vocational diploma	**Requirements to obtain a diploma for admission to higher education**
Students should have grades for the education covering 2 500 credits, of which passing grades provide 2 250 credits. In the passing grades, the following courses are required: · Swedish or Swedish as a second language 1 · English 5 · Mathematics 1a · Foundation courses of 400 credits In addition, a pass in the diploma project is required.	Students should have grades for the education covering 2 500 credits, of which passing grades provide 2 250 credits. In the passing grades, the following courses are required: · Swedish or Swedish as a second language 1, 2 and 3 · English 5 and 6 · Mathematics 1b or 1c In addition, a pass in the diploma project is required.

31 Apprenticeship education was run on a trial basis during the period 2008–2013 and from autumn 2011was introduced as a permanent selectable vocational program option.

In line with the new program design, vocational students who wish to acquire eligibility for university studies must actively select the subjects needed, in addition to those included in their vocational program. The government's motive for differentiating the vocational programs from the others was to enhance their quality and strengthen the students' vocational skills. For that purpose, the space in the curriculum for vocational subjects was augmented in the interest of providing competencies and skills that lead to employability and self-employment, as well as laying the foundation for further studies, for example to Higher Vocational Education in Sweden (Yrkeshögskolan) (Prop. 2008/09:199). As stated by figures from the National Agency, today fewer young people choose a vocational program in upper secondary school. The proportion of a cohort has declined from 37 percent 2008 to 27 percent 2013, despite reports from trade unions that many employers are prepared to sign employment contract after graduation (Skolvärlden 2015)

It is argued that one reason for the decline after 2010 may be the 2011 reform, according to which vocational education no longer provides eligibility for higher education, due to the fact that general academic competence in vocational programs was removed and instead became an option. Although it is possible to obtain eligibility by studying complementary subjects, few students do so. Some students are reluctant to seek a vocational program if they are not normally being qualified to continue study at a college or university after completing the program. Furthermore, every fifth student, as a mapping from the Schools Inspectorate (Skolinspektionen) revealed, have not been offered or do not know whether they have been offered to obtain eligibility for higher education (see DN 2014).

In this section we wish to highlight the vocational education's relation to working life with emphasis on the practical elements of the training that takes place in a work place outside the school environment. In order to further consider these issues a return to some of the general issues with education today is warranted at the outset in the next section.

4. WORKPLACE EDUCATION AND APPRENTICESHIP EDUCATION IN UPPER SECONDARY VOCATIONAL PROGRAMS

As the matter of quality in VET is deemed important, priority is given in WBL to the transition from school to working life and to the matching between content of VET and required qualifications by the labour market. Above all, WBL and apprenticeship education are presented as the solution to the challenges labour markets are facing in throughout Europe (Ecorys, IES and IRS, 2013, p.1).

Secondary education, whether academic or vocationally oriented, is supposed to fulfil a range of objectives: preparing the students for the demands of a socially and technically complex society, for entering into working life and, not least, to meeting their needs for self-realization and personal development. It's not easy to meet these goals within the framework of an education which has to reconcile the interests of various stakeholders. Education, as primarily a state responsibility, is expected to raise the citizens' general knowledge and skills and also meet the requirements for skilled labour force, through vocational training. In principle, this is done in school institutions since it has proved to be a very effective way.

Generally speaking, education enhances the potential for new learning, new knowledge and skills that provide opportunities for growth and sustainable development. Education is expected to have positive effects on almost all human performances and their impact on society, economy and culture. However, this actualizes a discussion about the content and organization of educational activities, including VET, which are best suited to optimize the development of the competent and skilful citizen (cf. Olofsson 2007).

In Sweden, as in many other similar countries, almost all students from compulsory education continue to secondary education. Meanwhile the upper secondary programs tend to be broader with more elements of general theoretical and academic subjects. The trend towards broader education programs was also stressed by the fact that fewer students today choose vocational oriented programs. The proportion of vocational oriented education in Sweden was significantly higher in the early 1980s, where more than 70 percent of lower secondary school graduates chose vocational programs in upper secondary school. Today, the proportion is reversed, and vocational programs are facing severe problems with high levels of drop outs (Olofsson & Wadensjö, 2006). The statistics speak for themselves, telling that individuals who have not completed upper secondary education are facing significantly higher rates of unemployment. Researchers argue that, along with criminality, non-completion of secondary school is emerging to be an important risk factor for unemployment, which can be counteracted by education (see Olofsson, 2014). Projections for the future labour market predict a growing shortage of upper secondary educated workers in several professional sectors. Vocational training will therefore

play an important role in meeting the demands for well-trained labour force and mitigate the consequences of an increasingly aging population on public finances.

There is currently a strong focus on vocational education and training in Europe. This is to be understood in the context of both high unemployment among young people and in relation to productivity, competitiveness and competence provision. In the summer of 2013, the unemployment rate for youth job-seekers aged 15-24 in the EU was over 23% (Eurofound, 2014). Although it has decreased since then to less than 19% in 2016, the youth unemployment rate is still very high, with peaks of more than 40% in several countries (European Commission, 2018; Statista, 2018). Long-term youth unemployment is still at record highs and more than double the overall unemployment rate. Worldwide, youth unemployment figures have not changed significantly over the last decade and they are not expected to improve in the next few years. It may also be considered as a problem that high youth unemployment co-exists with increased difficulties in filling vacancies, which raises questions of whether it exists labour market mismatches, inadequate skills provision, limited geographic mobility or other inadequate conditions (a.a.).

How to combat unemployment is a highly political issue. The report from European Foundation for the Improvement of Living and Working Conditions (Eurofound 2014) concluded that countries with a higher integration of school and work, where education provides young people with the knowledge and skills that are demanded in the labour market, e.g. through apprenticeship programs or work-based learning (WBL), in combination with an active labour market policy, display a smoother and

quicker transition from school to work. In the next section the Swedish apprenticeship system is discussed in the light of the overall VET.

5. REMARKS ON THE HISTORY OF APPRENTICESHIP IN THE SWEDISH CONTEXT

The most famous apprenticeship model is the one that took place in the old guild system. Before the abolition of guilds in 1846, apprenticeship was the normal training form for craftsmanship. Since then, the Swedish VET model, mainly school-based and publicly funded, is characterized by relatively small elements of apprenticeship. Some milestones in the history of vocational education are highlighted here to explore how apprenticeship and workplace learning was organized in the past.

Special vocational schools in Sweden were established in the early 1900s in the wake of the industrial breakthrough. Since the school-based VET system was built out in close cooperation with the social partners, apprenticeship has existed as a marginalized form of vocational training in Sweden. Traditionally, the concept of apprenticeship was closely affiliated with employment and has been regulated through collective agreements. The concept of apprenticeship at the upper secondary VET (gymnasial lärlingsutbildning) even encompasses training in workplaces without an employment relationship, internship, workplace-based education (arbetsplatsförlagd utbildning, APU) and learning at work (lärande i arbetslivet, LIA).

The first modern reform on vocational education was adopted in 1918 by which municipalities would establish "practical youth schools" (Praktiska ungdomsskolor) with state financial sup-

port. This was also the first time the state takes a more comprehensive organizational and financial responsibility for VET in Sweden. The practical schools were apprenticeship and/or vocational schools with a focus on industry, crafts, trade and home economics. Apprentice schools would offer an elementary theoretical vocational education. A prerequisite for admission in the practical schools was that the student had a job and that the education would take place during the students' free time, e.g. evenings and Sundays, and was perceived as a supplement to the actual training that usually occurred in the workplace.

With the complementary reform in 1921, a new vocational school form was introduced, called engineering schools (verkstadsskolor). These schools required no employment conditions for participation besides an age limit of 13 and completed 6-years primary school (folkskolan). The engineering schools offered full-time vocational education, separated from workplace and apprenticeship employment. Of interest here is to mention that behind the proposal, concerning engineering schools, was a mistrust of apprenticeship as an efficient way of vocational education. The proposal stressed that apprentices often were used as cheap labour force, more than it was justifiable by the actual teaching task, and qualified supervision was lacking (see Olofsson & Wadensjö 2006, p. 25).

The student volumes in the different vocational schools remained very small and this can partly be explained by the fact that they were not compulsory. The most probable reason may be the worsening labor market situation after the First World War, which was followed by a harsh deflationary crisis with increasing youth unemployment. There was no government funding to businesses for apprenticeships with exception of a limited grant

for master craftsmen who received apprentices. During the high unemployment of the1920s and '30s, the demand for apprentices was low and the partners in the labour market could not agree on the conditions about apprenticeship. Calls for statutory regulation of apprenticeships were raised without result. However, and in conjunction with the historical negotiations between Swedish Employers Association, SAF, and the Swedish Workers Confederation, LO, it was agreed that vocational education would be regulated by collective sectoral agreements. According to the agreement, specific vocational boards (yrkesråd) were established, consisting of stakeholder representatives to monitor the implementation of the agreements and the maintenance of the VET quality. In special training contracts the apprentices' rights and obligations were specified and, in the companies, appointed trade representatives shielded the apprentices' interests. Vocational education, e.g. in municipal-run vocational schools, was seen at that time almost as a complement to apprenticeships in companies. Yet, the collectively regulated apprenticeship training had a limited size[32] and the social partners became eventually increasingly oriented towards the public and school-based vocational education (SOU 2008:27).

A new phase in the reformation of VET started in the early 1950s with the task to review VET, adapting it into the structure of the current reforms for the compulsory education (SOU 1954:11). Although the Vocational Education Experts Committee of that time (Yrkesutbildningssakkunniga) proposed increased funding for VET, which was approved by the Parlia-

32 A study from the mid-1940s found that only about 5 percent of the workers in the industry had a formal vocational training (see Olausson & Wadensjö, 2006, p. 27).

ment, it regarded apprenticeship training primarily as a concern for traditional craftsmanship and construction professions. For other vocations, school-based full-time education was considered, in vocational and engineering schools, as a regular educational solution. Neither were there any attempts undertaken to standardize apprenticeship and vocational education to achieve equivalence. In a sense, the experts contributed to further centralization of the Swedish VET model under strong government control.

When the two-year vocational programs were introduced at the beginning of 1970s as a part of a coordinated upper secondary school, they were intended to "provide broad orientation and for a certain professional sector generally useful basic knowledge". Because of that the programs did not provide enough space for the specialization or work routine required by a particular profession. In order for a biennial vocational program to be considered as fully completed and adapted to the demands of working life, it was suggested that further training was required in cooperation between the school and the business sector. It was also assumed that this final complementary education (färdigutbildning) should be offered to a certain extent by a vocational school (SOU 1966:3, p. 122). For that purpose, a majority of the Swedish Trade Union Confederation's 24 affiliated unions signed so called "completion agreements" with the employers concerning apprenticeships. Although the demand for apprenticeships was immense, the number of state-financed apprenticeships decreased gradually.

In the beginning of 1980s the government decided to promote upper secondary apprenticeship on a trial basis that resembled a traditional apprenticeship with shared ownership between

schools and businesses. A young person who had completed primary school and was employed could apply for an apprenticeship, regulated on the basis of an individual syllabus developed in collaboration between the school, the employer and the trade union. The apprenticeship also incorporated school-based education that the municipal School Board was responsible for. In total, the pilot program during the 1980s covered approximately 3000 apprentices, most of them within the construction sector (SOU 2008:27, p. 209). From 1992/93 the apprenticeship training was connected to the individual program (Ds 1998:27), but its scope was limited due to a weak interest from partner organizations, lack of state subsidies and the fact that it was not an ordinary program option.

6. PHASES AND ASPECTS OF APPRENTICESHIP: WORK-BASED EDUCATION (APU) AND LEARNING IN WORKING LIFE (LIA)

The traditional apprenticeship at upper secondary school level was one of the ways to develop new forms of cooperation between school and work. The aim was to improve the workplace components of the training. ÖGY's proposal for three-year vocational programs (see section 2 in this article) advocated that at least 10 percent of instruction time during the first two years, and 60 percent during the third, would be in a workplace (SOU 1986:2). ÖGY's proposals formed the basis of a trial period with a three-year training program in 1988-1991, with special funds to facilitate the administration of the workplace-based training and compensation for participating companies for additional costs and loss of production. Evaluations and follow-up studies showed

that students generally considered work placement as a positive experience. They also found considerable variations in the various sectors, partly due to differences in educational traditions and cooperation between partner organizations. On the basis of the pilot experiences, the new high school programs were introduced from 1994 with at least 15 weeks of APU included in each of them. Though, an evaluation after a couple of years showed a number of shortcomings with the implementation of APU, such as that APU did not achieve its desired volume or quality since approximately 60 percent of the students in vocational programs had an APU of 15 weeks; the rest had fewer weeks or none at all. Difficulties were also reported regarding to connections between the APU and the school-based teaching, including low interaction between supervisors in enterprises and vocational teachers (SOU 1996:1; SOU 1997:107).

The review also noted shortcomings in understanding of the educational role of the workplace considering that APU would rest on curriculum-based learning objectives, reflecting the close cooperation between schools and businesses. The poor outcomes from the trial led to a new experimental implementation of apprenticeship during the period 1997-2000 (SFS 1997:762; SOU 1997:1) with the intention to make the pilot program regular after 2000. Program committees (programråd) composed of representatives from schools and social partners would help to formulate specific goals for the apprenticeship training, design training contracts and procure apprentices.

But neither this time the outcomes were encouraging, and when the trial period was over, the government could point out that the action had been too limited due to lack of interest of the students, the industry associations, and the small compa-

nies who felt that the compensatory allowance was insufficient. The same year (2000), a new three-year trial called Workplace Learning (LIA) was suggested where about a third of the program duration, equivalent to 30 weeks, would consist of workplace-based training. A special course syllabus for learning at work was introduced with the objective that "the student should be able to perform occurring tasks in a professional field ". It was also stated that a number of competencies, such as creativity, problem solving, reflection, communication skills and ability to take initiative, would also be promoted. The experiences gained from LIA would form the basis of today's apprenticeship training model, briefly discussed in the concluding section bellow.

7. WORKPLACE-BASED LEARNING AND APPRENTICESHIP EDUCATION IN SWEDEN AFTER THE 2011-REFORM & CONCLUSIONS

As already mentioned earlier, the current program structure of the upper secondary VET was introduced 2011 /Gy2011-reform/ (Skolverket 2012; SOU 2008:27). The same year even the teacher education was reformed including the Vocational Teacher Education Program. Just like before, the main motive for the Gy 2011-reform was to better adapt upper secondary education to the changing conditions and requirements in working life (see Henning Loeb & Korp 2012). There was also another, more political reason, for reforming upper secondary school. The conservative four-party coalition went to the polls 2006 with the slogan "work-first" and won the election.

Employment as a leading principle has characterized politics since then, with implications for VET. Key issues for the con-

servative government that eventually affected the construction of VET, as depicted in the Gy2011-reform, had been:

- Education-to-job matching and VET with labour market relevance.
- The transition to the labour market.
- "Not everyone wants to become an academic" (!)
- More vocational subjects and less general topics and thus no longer automatically basic eligibility for higher education.
- Apprenticeships (50% APL) etc.

The government's decision to lower the requirements for upper secondary vocational education, which no longer automatically provide eligibility to study at university level, and the talk about vocational programs as a resort for "school-tired" students have had an effect. Since 2008, the interest of youngsters to attend secondary vocational education has dropped from more than 35 percent of first-year students to 26 per cent of first-year students in 2014. However, the decreasing trend seems to have stagnated in the last two years, and preliminary statistics show even a percentage increase of applicants for vocational programs. (Skolvärlden 2015; Skolverket 2016; 2017). Recently, the Social Democratic Government announced its intention to amend the law so that the upper secondary school's vocational programs by default will give eligibility for higher education – without reducing the time for the vocational subjects in the curriculum. Unlike what applies today, students will be able to drop the subjects that are required for higher education (Regeringskansliet 2017).

Although the demand for highly educated persons is high, VET still remains a subordinate system, struggling with quality and confidence concerning what competencies and non-academic professional qualifications it might endorse. Theoretical education is still prioritized in the field of vocational education, both by the policy makers and the student population, despite ambitious attempts to reform VET.

Sweden's formal school education faces the challenge of successfully providing relevant skills and competencies for the working life. From an apprenticeship perspective, it is assumed that effective learning in a workplace requires the apprentice to be involved and active in the community where the newly gained knowledge is practiced. Group dynamics in the workplace and the interaction between different actors – tutors, instructors, apprenticeship and work teams – facilitate learning.

Vocational programs have been criticized for not being sufficiently connected to the requirements of the working life, due to limited internships and learning at work places. Weak commitment and involvement of the labour partners, as well as the tensions between the different cultures that exist in school and at work, are not beneficial conditions for the quality and status of VET.

It is actually a paradox that society does not invest more in vocational education in order to live up to the high demands of today's labour market of both theoretical and practical knowledge. Vocational qualifications are not obtained solely through theoretical studies, but also acquired through workplace-based learning that has to be an indispensable component in all vocational programs. Ultimately, there is no reason to perceive vocational education and training as an inferior sort of education,

considering the competencies, skills and knowledge the society today expects of its citizens. In fact, it is a matter of social justice and equity to equip every member of the society for a sustainable life in harmony with others and the environment.

The insight that workplace-based learning is strengthening the relevance of the vocational programs and the participants' employability has been evident from the historical account. Nowadays, learning at the workplace is considered an important part of upper secondary vocational education but the quality of it is not so impressive. The Swedish Schools Inspectorate found in its evaluation the quality of APL and the apprenticeship education to be low. Among the quality shortcomings listed are:

a low aspirations of the reviewed schools,
b teachers missing to visit their students during their work placement because they are scheduled at the school,
c unclear assessment criteria of the students APL,
d dissatisfied supervisors in the workplace, who asking for improved support from the school and better prepared apprentices before their placement (Skolinspektionen 2011).

Research in VET needs to be supported. Solid research findings will hopefully provide a knowledgeable foundation for development and innovation for a sustainable working life and society. If vocational education is to be an engine for economic and cultural well-being, i.e. a societal concern, all stakeholders need to get involved and cooperate in different ways and at different levels, because vocational education is a matter of virtuous preparation of young people entering the labour market and to forming the future.

Workplace-based learning is important for the quality of the skills and competencies needed for "a world worth living in". In the lifelong journey of VET, we need to learn from each other, and from different education systems that are embedded in particular historical, economic, social and political contexts. We cannot import structures from other countries VET systems. But we can always learn something about us when studying other countries and reflect on their experiences.

Talking about skills and competencies is important but an uncritical adaptation of that discourse without a reflexive attitude hardly fosters free and innovative minds.

> My generation had it easy. We got to "find" a job.
> But, more than ever, our kids will have to "invent" a job.
> (Thomas L. Friedman)

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SECTION VI:

METHODOLOGICAL ISSUES, COMPANY RESEARCH AND RESERCH ON EMOTIONAL CAPITAL

'Begleitforschung' as Mediator Between Action-Oriented Learning and Digital Change: On the Role of *Accompanying Research* and *Training Interventions* in the Learning Layers Construction Pilot

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Abstract: The paper examines the contribution of *accompanying research* to *innovations in workplace learning* in the recently completed EU-funded Learning Layers project (2012–2016). The aim of the project was to promote the use of digital media, web resources and mobile devices as support for learning in the context of work. The paper gives a picture of the interrelations between participative co-design of digital tools (in which the project engaged trainers and apprentices of the training centre Bau-ABC Rostrup). In this context the accompanying research team was supporting the co-design process and involved in the training activities. The accompanying researchers explored the possibilities to enhance the culture of *action-oriented learning* and *self-organised learning* (mainstreamed in Bau-ABC) with the introduction of digital media and web tools. By the end of the project the integrative toolset "Learning Toolbox" (LTB) was pilot tested by Bau-ABC trainers in their training projects. The paper presents a secondary analysis on the interim reports

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and final deliverables of the Learning Layers construction pilot. Then it compares the findings of the Learning Layers project with the ones of other German researchers with earlier pilot projects in vocational schools and adapts their frameworks to the context of the Learning Layers project.

Keywords: Digital media, Vocational education and training**,** Apprentice training, Construction pilot, Action-oriented learning.

1. INTRODUCTION

This paper has the task to re-examine the experiences and achievements of the EU-funded research & development project Learning Layers (2012–2016). The project had the task to promote the use of digital media, web tools and mobile technologies as support for learning in the context of work. The project focused on two pilot sectors (in different regions) – healthcare sector (West England) and construction sector (North Germany). The transnational project consortium involved technical partners (focused on infrastructure development and software development) of research partners (involved in the sectoral pilots and evaluation studies) and application partners (representing the organisations in the two sectors). The aim of the project was to introduce new software designs that can be used by the application partners *and* other small and medium enterprises in the sectors.

Altogether the aim of the project was to scale up innovations in using digital media and web tools to support learning in the context of work.

Already in the beginning of the project the work was divided between the two pilot sectors and parallel design ideas. The work in the construction pilot was mainly shaped in the light of design ideas put forward by the application partner organisation Bau-ABC Rostrup (intermediate training centre of construction industries and trades – later on referred to as Bau-ABC). The process dynamic was characterised by participative R&D dialogue and as an iterative co-design and tool development process. From the pedagogic point of view it is essential to note that the training activities of Bau-ABC are structured as weekly or two-weekly project periods in the training centre and that Bau-ABC has a strong commitment to action-oriented learning. From this perspective the construction pilot sought to support the training and learning culture of Bau-ABC with different project activities (co-design, training interventions and pilot testing of digital tools).

In the light of the above the paper examines the following questions:

1 In what ways has the research approach of the construction pilot – defined as *accompanying research* – positioned itself to support the culture of action-oriented learning in the project activities? How can this be traced to a conceptual and methodological background (in the past) and to an adapted research strategy?
2 In what ways have different project activities – co-design, *training interventions* and pilot testing of digital tools – been guided by principles of action-oriented learning? How has this been manifest in different phase of the project?

3 What kind of achievements have been observed during the process and identified in the evaluation studies regarding the adoption and use of new digital tools to support a culture of *action-oriented learning* in Bau-ABC? To what extent can this be interpreted as digital change or transformation in training and learning practices?

4 In what ways can the approach and the results of the Construction pilot be related to earlier work of accompanying researchers in similar pilot projects in vocational education – with focus on *promoting the culture of self-organised learning* and introduction of *digital media to vocational learning*? How can such comparisons contribute to knowledge development on potentials and limits of such innovation projects (in general) *and* on the sustainability such innovations (in the organisations involved in the pilots)?

2. THE RESEARCH APPROACH – BACKGROUND, THEORIES AND METHODOLOGIES

As has been indicated above, the research team of the Construction pilot (led by ITB) positioned itself as 'accompanying researchers'. With this concept the ITB-team made reference to prior ITB research experience in two major innovation programmes and to a longer German tradition in pilot projects (*Modellversuche*) in the field of vocational education and training (VET). Below I present some remarks on the conceptual and methodological background of accompanying research (*Begleitforschung*) in these contexts. Then I will shift the emphasis to the newer research & development context (and the different

nature of interventions) in the Learning Layers project and its Construction pilot. Based on this background and transition to newer boundary conditions I discuss the role of background theories and research methodologies in the accompanying research approach adopted in the Construction pilot.

2.1 CONCEPTUAL & METHODOLOGICAL BACKGROUND AND TRANSITION TO NEWER R&D CONTEXT

As has been indicated above, use of accompanying research (*Begleitforschung*) has a long history in the context of pilot projects (*Modellversuche*) in the German dual system of VET. Regarding pilot projects in workplace-based training (*Wirtschaftsmodellversuche*), the use of an independent scientific accompaniment (Wissenschaftliche Begleitung) was a precondition for investing public funding for innovation projects in private companies (that were responsible for training). Regarding school-based pilot projects, they could at best reach the level of necessary funding when being supported by the joint commission of the Federal Government and the Federal States for educational planning and research support (*Bund-Länder Kommission für Bildungsplanung und Forschungsförderung* – BLK). However, the traditional pilot projects were individual projects with a specific pilot concepts and accompanying research design (see Sloane 1992 and Benteler et al. 1995).

Parallel to this tradition of single pilot projects a somewhat more integrative approach of pilot projects was developed in federal and regional innovation programmes on work and technology. In this context it is worthwhile to note that ITB was

in charge of the Bremen regional innovation programme on Work and Technology (*Landesprogramm Arbeit und Technik*) in the years 1990-1996. This programme had already a two-layer structure with project-specific accompanying research and with programme-wide evaluation and monitoring measures (see Deitmer 2004). In a similar way ITB was in charge of research support for the BLK-led innovation programme on new learning concepts in dual VET (*Neue Lernkonzepte in der dualen Berufsausbildung*). In this programme the local or regional pilot projects were linked to each other via joint evaluation and monitoring measures, including thematic studies across the programme. In this way the programme coordination unit was in the position to highlight the overarching theme – the implementation of the new curricula and learning designs – and to provide systematic overviews across the programme (see Deitmer et al. 2004).

As a contrast to the previous examples, the project design in the Learning Layers was different in many respects. Firstly, the project consortium was set up to promote the development and use of digital media and web tools for workplace-based learning in different sectors and organisational contexts. In this respect neither the context of VET (as in the separate pilot projects (*Modellversuche)* or the programme for New learning concepts in VET) nor the innovative shaping of production technologies and work processes (as in the Bremen regional programme for Work and Technology). Therefore, the project concept was more generic and the R&D processes in the pilot sectors were to be guided by the design ideas to be shaped and revised in consortium-wide Design Conferences (scheduled at the beginning of Year 1 and Year 3 of the life-cycle of the project). In this

respect the Construction pilot started to evolve as a relatively autonomous pilot project from the Year 2 onwards (see section 3 below). This all had consequences for the shaping of the research approach of the accompanying research team in the Construction pilot (see Kämäräinen et al. 2014).

2.2 SHAPING THE ACCOMPANYING RESEARCH APPROACH FOR THE CONSTRUCTION PILOT

In the light of the above the ITB-led research team in the Construction pilot positioned itself as *accompanying research* team. The tasks of the research team were the following:

a To support the application partner organisations in introducing digital media and web tools into their contexts of work – in particular into workplace-based learning. With Bau-ABC this required the twofold attention on apprentice training projects in the training centre *and* on the use of digital media and web tools in the companies.
b To mediate between the tool developers and the application partner organisations to make transparent the needs, interests and requirements of the users and to help the developers to find appropriate design frameworks. With the work in Bau-ABC this required attention to the use of such tools by trainers, apprentices and companies.
c To support the engagement of different parties in a joint process and to maintain knowledge sharing and project communication between all parties. With Bau-ABC this required attention to a core team of trainers (more intensively involved in the project activities) and with the rest of the training staff (to be kept up to date).

d To maintain project reporting in the Construction pilot as process documentation and as support for reflection and rethinking in the course of action. With the context of construction work and apprentice training this required revisiting of several background theories (e.g on 'work process knowledge' (*Arbeitsprozesswissen*) and on 'action-oriented learning' (*Handlungsorientiertes Lernen*).

Concerning the *interaction of research contributions* and *user engagement* the approach of the Construction pilot can at best be characterised as *'Participative R&D dialogue'*. Concerning the manifold mediating roles of the research team its contribution can at best be characterised as *'Agile accompanying research'*. Concerning the contribution of the research team to knowledge development on the relatively open innovation process it is worthwhile to note that it was not based on programme-related working hypotheses or theory-driven research hypotheses. Instead, the contribution of the research team was in supporting different project activities (see section 3 below) and in providing conceptual frameworks and interpretations at different phases of the project work (See Kämäräinen et al. 2017a).

3. INSIGHTS INTO PROCESS: CO-DESIGN, TRAINING ACTIVITIES AND TOOL DEPLOYMENT

In the light of the above it is appropriate to give a picture of the process dynamics of the Construction pilot and of the specific interventions of accompanying researchers at different stages of the project. In this context it is possible to specify, to what extent the conceptual work with *action-oriented learning* was

guiding the project work and to what extent the use of digital media and web tools could be perceived as enrichment of the training and learning culture of Bau-ABC (based on action-oriented learning).

3.1 REORIENTATION IN THE CO-DESIGN PROCESS

The initial design idea for pilot activities in Bau-ABC was shaped in the Year 1 Design Conference in Helsinki. It envisaged primarily the digitisation of the training materials and reporting processes in the apprentice training of Bau-ABC. The point of reference was the "White Folder" of Bau-ABC – the collection of introduction sheets, worksheets and reporting sheets that were to be managed by the apprentices themselves. Here, it is worthwhile that the White Folder was based on reference materials on vocational training in construction sector – with manifest commitment to action-oriented learning.

At this phase the ITB-led accompanying research team arranged participative co-design workshops in which apprentices and trainers (in separate workshops) indicated their priorities, in what kind of action contexts the use of digital tools would best support working and learning in their trades. These results were brought into discussion with other workshops that also involved technical partners. Gradually it became apparent that the initial design idea had to be revised and that a new balance was to be sought between external resources and materials and the digital tools to support the working and learning processes.

This gave the co-design process a new perspective – the shaping of an integrative toolset "The Learning Toolbox" to be customised to support working and learning processes of different

construction trades. At this stage the Bau-ABC trainers made a strong point that the toolset should not provide shortcuts to easy answers or pre-given solutions. Instead, the toolset should provide resources and clues to support *reflective* vocational learning processes (see Kämäräinen et al. 2014 and 2017a).

3.2 CONCEPTUAL SUPPORT FOR THE PARTICIPATIVE CO-DESIGN

Alongside the above mentioned reorientation with the design idea the ITB-led accompanying research team was working with conceptual support for the participative co-design process. This took place mainly in the preparation of the Learning Layers "Theory Camp" (that was organised in Aachen during the Year 2) and its follow-up. The ITB-team prepared contributions to two major conceptual themes: "Work Process Knowledge" and "Action-Oriented Learning". (This paper focuses on the latter theme, see on the starting points Burchert et al. 2014, Heinemann et al. and on the further development of the theme during the project Kämäräinen et al. 2017c.)

In German contexts 'action-oriented learning' (*Handlungsorientiertes Lernen*) can refer to

a a *conceptual background* of *curriculum development movement* in the German vocational education and training research (*Berufspädagogik*) and to
b *practical implementation* of the ideas in *learning arrangements* in vocational schools, companies and intermediate training centres (Überbetriebliche Ausbildungsstätten).

At the *conceptual level* the concept 'action-oriented learning' links to each other following ideas:

- Culture of vocational professionalism (*Beruflichkeit*) in education and training of skilled workers;
- Integrated holistic occupational profiles (*Integrierte Berufsbilder*) as basis of holistic curricula;
- Integrated action-oriented competences (*Integrierte Handlungskompetenzen*) – domain-specific competences, methodological competences, communicative competences, personal development competences – as guiding pedagogic principles;
- Paradigmatic occupational tasks (*Berufliche Arbeitsaufgaben*) as contexts for task performance, getting engaged in vocational knowledge processes and for professional growth.
- Occupational aptitude (*Berufliche Handlungskompetenz*) is the overarching qualification goal of vocational education and training (VET) in Germany. The aim is to acquire an expert-level competence in the set of paradigmatic work tasks and processes related to the occupation. The acquisition of such aptitude is based on performance in real (or realistic) occupational contexts. Thus, the acquisition of occupational aptitude is the guiding principle of vocational curricula.

At the level of practical implementation, the concept 'action-oriented learning' refers to the following principles in shaping the teaching and training arrangements:

- Complete occupational work cycles (*Vollständige Arbeitshandlungen*) as contexts for vocational learning processes and for assessing the progress of learners;
- Culture of self-organised learning (*Selbstorganisiertes lernen*) introduced throughout the process cycle: self-organised information retrieving, planning, task execution and assessment (of the outcome and one's own learning).

Here it is worthwhile to note that Bau-ABC trainers were very explicit about their commitments to the abovementioned principles in the co-design workshops and in related interviews (see LTB Video 2/2014).

3.3 TRAINING INTERVENTIONS TO ENHANCE MULTIMEDIA COMPETENCES

As a part of the Construction pilot activities the project team organised two training schemes for Bau-ABC trainers at different phases of the project:

- *The early Multimedia training* activities were introduced as a separate initiative, but gradually they became an integral part of the co-design process.
- *The Theme Room training campaign* became a 'whole organisation initiative' and paved the way to use the Learning Toolbox (LTB) in the apprentice training projects of Bau-ABC in different trades.

The early *Multimedia training scheme* (2013-2014) involved several interested Bau-ABC trainers and familiarised them with

basic web tools and helped them to create their own multimedia content. The first sessions provided insights into a wide range of web tools and processes of using, co-developing apps and co-creating contents. The later sessions helped the trainers to create their own blogs and produce video material. (See on the impact of the earlier Multimedia training LTB Video 1/2014.)

The concept "*Theme Room training*" (initiated by the Bau-ABC trainers) envisaged a combination of physical and virtual spaces (Theme Rooms) that would be available for multimedia training on agreed time slots (presence training) and on given online platform (to be used individually). Some of the themes should be kept for longer period, whilst others could be changed after a short while (once the learners had checked themselves out of the room). In order to ensure shared learning among the training staff and to guarantee continuity of learning this concept was proposed as part of the trainers' working duties and to be implemented during their working hours. The *Theme Room training scheme* was implemented as an adapted pilot for an initial learning cycle (based on the proposed model) in November 2015. It involved the entire training staff of Bau-ABC and focused on two main themes: the use of social media in training and production/use of digital learning materials for training (see in greater detail Kämäräinen et al. 2017b and 2017e).

3.4 FROM CO-DESIGN AND TRAINING SCHEMES TO PILOT TESTING OF THE TOOLSET

The subsections above may have given a picture of a steadily guided and smoothly running design process that progressed 'by the book' from one phase to the next one. However, in real-

ity the co-design process was overshadowed by several difficulties, interruptions and uncertainties. Therefore – in spite of the shared pedagogic background concepts – the project was challenged to bridge gap periods and regain the grounds for successful pilot activities. In this respect the implementation of the Theme Room training scheme was of vital importance to prepare the ground for the pilot testing of the integrative toolset Learning Toolbox.

4. EXAMINING THE RESULTS: USE OF TOOLS, IMPACT ON LEARNING, TRANSFER PROSPECTS

The previous section described mainly the research & development dialogue in the Construction pilot from the perspective of the ITB-led accompanying research team (and its interaction with the trainers and apprentices of Bau-ABC). In the pilot testing of the Learning Toolbox and during the related evaluation phase there was more cooperation between the accompanying researchers (all-round support for the pilot), evaluation researchers (analysing the impact) and educational technology researchers (support for using digital media and the Learning Toolbox). Partly the picture of this phase needs to be reconstructed from texts prepared by different authors, partly from jointly authored documents that are based on shared observations and mutually agreed interpretations. Below some nutshell conclusions are presented from this phase of the project work.

4.1. USING LEARNING TOOLBOX AND DIGITAL MEDIA TO ENRICH VOCATIONAL LEARNING

In the implementation phase the research partners and LTB developers organised workshops for the pioneering Bau-ABC Rostrup trainers who were the first ones to introduce LTB in their training. They received a brief tutoring and then discussed their own ideas, how to shape their own LTB stacks (see Learning Toolbox) for the forthcoming apprentices' projects that were scheduled for the week to introduce the LTB in their trades. Already at this stage the trainers chose different exemplary projects for introducing the LTB to their apprentices. The project of well-builders (*Brunnenbauer)* was an 'ordinary' training project with one week's duration. In the case of carpenters and bricklayers (*Zimmerer und Maurer*) the pilot case was a joint project that linked to each other training periods in both trades (see in greater detail Kämäräinen et al. 2017d).

In this context it is worthwhile to note that the trainers had developed their project-related stacks for a specific variant of self-organised learning and respective use of learning resources:

- The stack and tiles for well-builders (*Brunnenbauer*) were shaped as a comprehensive resource base for a *problem-oriented learning strategy*: to find a relevant set of necessary information for self-managed problem-solving (with awareness of one's limits).
- The stacks and tiles in some other trades were shaped as gradually enriched 'resource layers' to support an *interest-based learning strategy*: to encourage the learners to find their own solutions – and then to present other alter-

natives as points of comparison for sharing knowledge and experiences.

In addition to the above mentioned aspects it is worthwhile to note that in these pilots the trainers blogs (see above) served as repositories to which the trainers could point as background materials. In a similar way they were able to make links to other resources and external tools. In this way the trainers were shaping their own digital training and learning environments for their apprentices.

4.2. INTERPRETING THE FINDINGS FROM FOCUS GROUPS AND INTERVIEWS WITH TRAINERS

The evaluation studies on the pilot testing were based on focus group sessions (with apprentices) and individual interviews (with trainers) at different points of time (during the Year 4). Instead of going into details it is more appropriate to present here the conclusions formulated after the final working visit and a joint interpretation workshop.

Our starting point was the observation that the trainers had set somewhat different *pedagogic accents* that were reflected in their stacks – and in the kind of learning that the stacks supported (see in greater detail Kämäräinen et al. 2017c):

a) LTB as a "well" – wide access to resources & explorative learning
Some trainers put an emphasis on equipping the apprentices with comprehensive sets of reference materials and challenging them to do selective searches for their purposes. One trainer reported:

> LTB allows us to guide apprentices to find the webpages and links for certain topics for their needs It makes it easier for the apprentices to learn whenever and wherever they want as the whole material is constantly available on LTB [...] We have to trust in what the apprentices are doing and we have to remember that we cannot control everything. They will grow by what they are doing and not by what we tell them to do and not to do. The apprentices shall be allowed to try things out and also to make mistakes.

The quote demonstrates that trainers following this approach see the LTB as a storage where all relevant learning material is provided and apprentices autonomously explore content. The trainers accept a reduced level of control upon apprentices' actual use of these resources. Instead, the trainers emphasise that the apprentices need to get used to self-organised acquisition of problem-relevant information from trustworthy sources. For this approach we use the metaphor of a *'well'* for stacks as stable learning resources.

b) LTB as a "watering can" – selective access and gradual opening
Other trainers put an emphasis on selective access and gradual opening of learning material. This approach can be characterised by a reflective view on why certain content is provided and how:

> You have to arouse interest of the apprentices, it has to make sense and supportive for specific cases what you put in there! There should not be too much content in the LTB, I don't want to drive them crazy, so I decided to start with providing material on how to make an 'Aufmaß' [...] Putting everything

in there is simply too much. Stacks should be build related to specific projects, not all content in one stack.

The evaluation studies used the metaphor of a *'watering can'* for such tool usage. Trainers who use such an approach are convinced that LTB helps for a deeper understanding and making work life for apprentices easier in the long run. Hence, trainers focus on providing well-selected material for further reading and learning, i.e. theoretical background information that relates to a project task. Trainers following such an approach strongly reflect on the type and extent of content provided via the LTB.

c) Collaboration between trades

During the evaluation timeframe, the LTB was used as a means to bridge learning contexts. More specifically, a joint training project of two trades (carpenters and bricklayers) was carried out using the LTB to integrate work processes. Trainers reported about this process and the potential of LTB for integrative learning:

> We started the project sitting together. We discussed about where our work has similarities, where it has overlappings. Then we compared existing projects and discussed where we can connect the projects. This is when the "Holzrahmenbau" project came to live with the fire barrier requirement. And then we thought how can we implement this for our apprentices. So we decided to create one main stack containing the general construction plans, information like the basic measurements of the building, or aids relevant for both trades like the "Bosch Aufmaß-Kamera". In this stack we had two trade-spe-

cific stacks for brick-laying, containing detailed information like the required mortar, and one stack for wooden construction, also with the detailed information like drawings.

Using the LTB facilitates the bridging of learning contexts in two ways: (a) it facilitates the implementation of joint projects for the trainers, and (b) it enhances the apprentices' understandings of other trades. Learning does not stop between different trades and insights from one trade fertilise learning in the other and vice versa. One trainer involved in the joint project nicely summarised it as follows:

> Using LTB, we [the trainers who took part in the joint training project] recognized that we could much better connect ourselves with other trades or projects. That was a real advantage and without LTB these joint projects would not have taken place so fastly. On the one hand, such simple things like paperwork were reduced, but for us trainers the most important thing was the increased understanding of the other trades: The carpenter apprentice suddenly understands the impact of his work for bricklaying. He can make the connection, he realizes 'hm, my wooden construction needs to be fireproof, that is difficult, but hey, I could lay bricks in between!' With this joint project and LTB, apprentices understand the 'why' question.

d) Feedback from apprentices

The apprentices responded positively to both types of pedagogic approaches and acknowledged the advantages for their trades. The well-builders emphasised that they are expected to work on their own at remote construction sites and need to develop themselves as self-organised learners and problem-solvers.

The carpenters, bricklayers and road-builders emphasised that they need to learn to work in the light of client's wishes (who may require for instance special styles and decorations). Moreover, the apprentices emphasised that the LTB helps them to get feedback from the trainers in writing and to express their questions or problems with digitised photos or videos. Furthermore, they have improved access to instructions and they can use digital tools in their own reporting. Finally, if the assessment is based on digital documents (including photos or videos), their achievements and shortcomings are more transparent and the reports are genuinely their own, not copied from peers.

4.3 INTERIM REFLECTIONS

In the previous sections this paper has focused on reconstructing the picture of the Construction pilot of the Learning Layers project with a twofold aim:

- To make transparent the mediating role of the accompanying research team in the complex processes of co-design, capacity-building (via training) and pilot testing of the Learning Layers digital tools;
- To make transparent in what way the accompanying research team (within different project activities) has contributed to the culture of action-oriented learning in the application partner organisation Bau-ABC.

So far it has been possible to rely on the reports and research papers based on the project itself. However, concerning the aspect of 'knowledge development' in the work of accompany-

ing researchers, it is not enough to report on the progress in this particular project without comparing it to parallel or predecessor cases. Firstly, this is worthwhile from the methodological point of view – reflecting on different pilot arrangements and approaches to scientific accompaniment. Secondly, this is worthwhile for considering knowledge development on themes in the pilot projects – self-organised learning and use of digital media. Thirdly this is worthwhile concerning sustainability and transferability of such innovations.

5. COMPARISONS WITH PRIOR ACCOMPANYING RESEARCH IN VOCATIONAL EDUCATION

In this context it is not possible to make a wide range of comparisons to pilot project (*Modellversuch*) arrangements and accompanying research (*Begleitforschung*) designs covering various contexts and themes. Therefore, it is appropriate to concentrate on few recent examples that provide interesting points of comparison in the following respects:

a Pilot arrangements and research designs in relatively recent vocational school pilots;
b Lessons from introduction of 'self-organised learning' as a curricular change agenda;
c Insights into educational management approaches to promote sustainability of educational innovations of the pilot projects *and*
d Lessons from introduction of earlier generation of digital media and web tools to vocational teaching and learning.

5.1 PILOTING ARRANGEMENTS AND RESEARCH DESIGNS IN RECENT *MODELLVERSUCHE*

For this paper it seems appropriate to look at parallel developments in such pilot projects (*Modellversuche*) that focused on the introduction of new pedagogic concepts (with emphasis on self-organised learning) at vocational schools – *and* with further emphasis on introducing digital media and web tools. Whilst the cases are then of earlier date, it is possible to make comparisons, how the boundary conditions for pilot projects and accompaniment have changed – and how the contexts (vocational schools vs. intermediate training centre) differ as venues for piloting. In the light of the above it seems appropriate to choose the pilot projects reported by researchers from the university of Paderborn in the special issue on self-organised learning in vocational education of the online journal bwp@ – see Klieber & Sloane 2007 and Kremer 2007. This subsection will outline the general starting points of such pilot projects and the arrangements for accompanying research (Begleitforschung) in the selected cases.

The article of Klieber & Sloane (2007) refers to a set of parallel pilot projects organised by the Federal state of North-Rhine Westphalia (Nordrhein-Westfalen) in the years 2005 -2007. Each of these involved several vocational schools but differed whether they involved only one occupational area or several. Also the interests of knowledge, research designs and intensity of co-participation (of accompanying researchers) varied considerably.

- In the accompaniment of the pilot project *segel-bs* (NRW) (*Selbst reguliertes Lernen in Lernfeldern der Berufsschule*) the accompanying research focused on different resources and their utilisation in pilot activities and the research was based on a questionnaire.
- In the pilot project *mosel* (*Modelle des selbstgesteuerten und kooperativen Lernens und die notwendigen Veränderung in Bezug auf die Personal- und Organisationsentwicklung*) the focus of research was on interrelations between *self-organised and collaborative learning* and necessary *personal and organisational changes*. In this respect the study was based on collaborative workshops in which the participating teachers trained themselves to work with new pedagogic concepts.

The article of Kremer reports on a parallel pilot project *KooL* (*Kooperatives Lernen in webbasierten Lernumgebungen*) that focused on introducing Web 2.0 applications as support for action-oriented vocational learning environments. Here the focus of accompanying research was on the question, in what ways the use of digital tools can be used to support the teachers' own pedagogic ideas and change agendas.

5.2 LESSONS FROM THE PILOT PROJECTS WITH EMPHASIS ON SELF-ORGANISED LEARNING

Considering the two pilot projects *segel-bs* and *mosel* (both discussed in the article of Klieber & Sloane 2007) the accompaniment of the first one focused on resource issues from a very school-specific point of view (and primarily on the basis of a

questionnaire). Therefore, as a parallel case to the Construction pilot of the Learning Layers project, the accompaniment of the latter pilot project (mosel) had more in common with the process dynamics discussed in the previous sections of this paper. However, there are interesting methodological features that were specific to the mosel project for which there were no direct equivalents in the participative co-design and accompaniment of the Learning Layers pilot activities. Below some key points of the workshop-based approach of the accompanying research have been summarised before discussing the interim results.

a) Insights into the approach of accompanying research
The accompanying researchers had firstly drafted a framework of six 'realms of experience' (*Erfahrungsbereiche*) for analysing different experiences of participants in the context of the pilot project. These realms included *goal-setting*, *specifying target groups*, c*oncepts and approaches* to pedagogic change, *preconditions for change*, *experiences with implementing the change* and *experiences in/with the pilot project*.

The workshop concept envisaged a gradually growing intensity of *informing each other* (of one's own starting points and engagement in the pilot), *sharing experiences* for joint reflection and *drawing conclusions* on the basis of mutual exchanges. The workshop process consisted of the following phases:

1 Initial reflection (production of written documents by teams from one school and study program (*Bildungsgang*);
2 Interviews between teachers (interviews based on common grid, one study program team interviewing another from different domain);

3 Stations (each team went through a cycle of stations with pre-given themes for reflection and prepared a written reflection document on the results);
4 Relay-interviews (teams were interviewing each other in a continuing relay-run in which the questions and answers were nurtured by the previous sessions; the results were recorded as transcripts of audio files).

b) Insights into interim results

Based on the workshop documents and transcripts the authors have summarised the interim results (Klieber & Sloane 2007). Below some main points are listed briefly:

1 *Interpretation of self-organised learning*: Due to the heterogeneity of the study programs in the pilot project *mosel* there were different accents in the interpretation of the guiding principle. Yet, concerning the orientation of study programs to vocational aptitude (*Berufsfähigkeit*) and to action-oriented learning, there was a consensus. Concerning the tasks of the learners, there was an interest to shift the emphasis to more overarching and autonomous team- and group work. In this way the learners would be required to put more emphasis on analysis, planning, development and presentation of their assignments.
2 *The role of teachers and teaching*: In general, the teachers expected that their role would shift from direct teaching towards advice, support and moderation. This would require more preparation but less presence and direction of the learning activities. Consequently, the teaching should take place in more open frameworks and include

more optional choices. Yet, the learning should take place in such work-related contexts that enable the learners to find appropriate solutions (and to use learning materials as support for their assignments).

3 *The role of assessment*: In the pilot project *mosel* there were several tools and instruments at use for the assessment of self-organised learning, from diagnostic instruments to users' tools, such as self-assessment forms and learning logs. In addition to these the teachers emphasised the need to assess learners' progress in capability for self-organised learning. This led to specific recommendation by some teams.

5.3 LESSONS ON EDUCATIONAL MANAGEMENT IN THE IMPLEMENTATION OF INNOVATIONS

Altogether the interest of knowledge of the accompanying researchers in these pilot projects was to study the role of educational management (*Bildungsmanagement*) in consolidating and sustaining the pedagogic innovations. Here the authors (Klieber & Sloane 2007) draw attention to different levels of management – school management and curriculum management at the level of study programs (*Bildungsgangmanagement*). In this context they distinguish between the *structural perspective* and the *process perspective* in managing necessary changes in the organisation of vocational schools. Whilst these both perspectives are closely interconnected in the change agendas, the structural perspective is more generic whereas the process perspective refers to more specific features of a *school* organisation. Therefore, the main emphasis in this subsection will be given on the structural perspective.

The starting point was a conceptual model that outlined four structural characteristics for macro- and micro levels of educational management (and for their mutual relations):

1 Discussion on guiding principles (*Leitbilddiskussion*);
2 Approach to allocating resources (*Ressourceneinsatz*);
3 Didactic (and pedagogic) model (*Didaktisches model*):
4 Concept for evaluation/ quality assurance (*Evaluationskonzept/ Qualitätssicherung*).

With reference to this model the authors analysed the results of the workshop process to identify aspects of educational management that were taken up by participating teams. Below some of the findings have been summarised briefly:

1 On the discussion on guiding principles (*Leitbild*): Here the authors emphasised the importance of giving the teams an opportunity to develop a joint interpretation on 'self-organised learning' and its implications for the respective study program.
2 On the allocation of resources: Here the discussions touched different aspects of resources – including the availability of appropriate rooms and physical spaces as well as the possibilities of teachers/ teams to make their own choices.
3 On the didactic model: Here the authors drew attention on the need of the teams to find common ways to put their theoretical understanding of learning into practice. In particular, this refers to the emphasis given on 'action-oriented learning'.

4 On the evaluation concept/ quality assurance: Here the authors drew attention to the fact that the schools were becoming more autonomous and that the teams needed a professional self-evaluation approach to enhance their self-awareness.

Concerning the process perspective, the authors outlined a similar process model for identifying crucial process steps in curriculum change and curriculum implementation regarding the transition to a more explicit culture of self-organised learning.

Altogether the authors emphasised that many of the themes favoured the principle of self-organised learning *but* they had somewhat unsystematic understanding of it. In particular, they didn't have consequent interpretations on organisational implications for the study programs. Therefore, the authors emphasised that the study programs needed to develop their own conceptual and organisational foundations for the implementation.

5.4 LESSONS FROM THE PILOT PROJECT WITH EMPHASIS ON DIGITAL MEDIA

As a contrast to the above discussed pilot project(s), the pilot project *Kool*, reported by Kremer (2007) focused explicitly on the introduction of web tools into a vocational education. Here it is worthwhile to emphasise that the aim of the pilot project was to incorporate the new tools into the vocational learning context – with emphasis on self-organised learning. In this respect the introduction of new tools was intended to enhance teachers' capability to promote self-organised learning in their subject areas.

The main achievements of the pilot project are related to training of glass professionals. With the aim to support vocational learning (and self-organised learning in different parts of training) the project introduced the following tools and learning arrangements:

- The platform "English for Glass Professionals" with many exemplary situations and impulses for learning and using professional English;
- Web-based tool for self-assessment and peer assessment (with focus on the reflection on skill requirements in working and learning situations, individual learning progression, integration of working and learning tasks and combination of self-assessment and peer assessment);
- The forum/knowledge sharing network '*Glaskompendium*' that served as domain-specific and community-driven resource base (like Wikipedia). Here the work of the apprentices (as contributors and editors) was organised in such a way that they became aware of quality requirements and quality control when developing such an online resource.

Here it is of special interest to see, what kind of conceptual conclusions Kremer has drawn on the basis of these achievements and concerning the pedagogic role of new media in the context of vocational education:

- Firstly, Kremer emphasised that it is crucial for such pilots that the users accept the new digital media and find their own ways to use them. Therefore, it is difficult to plan in

advance, in what ways the new media will be utilised (in self-organised learning) and what kind of impact they will have. Therefore – for accompanying research – the key question is, in which ways the learners will incorporate digital media in their action-oriented learning processes.

- Secondly, Kremer emphasised the role of digital media as developmental tools to support the acquisition of vocational competences. This requires that their use should cover the processes of planning, implementation and control of learning processes in an action context. In this respect (as the above mentioned examples from the pilot project show), the tools can have different functions.
- Thirdly, Kremer pointed out that the pilot project *Kool* promoted media competences of teachers b*oth* in order to support particular occupational tasks *and* to embed the learning process into development of new media as end product. In both cases in is important to see that the engagement with digital media is not an isolated activity.
- Fourthly, Kremer emphasises that from the perspective of shaping entire learning environments – and taking into account the aim to promote holistic vocational competences – the use of digital media should not be treated as isolated aspect at this level either. Taking into account the role of digital media as developmental tools the planning process should incorporate them into the interplay between working & learning tasks *and* sequencing learning units or practical learning arrangements.

5.5 INTERIM REFLECTIONS

At this point it is appropriate to make consider, why and how the above mentioned pilot projects and the related articles can be used as reference articles when analysing the experiences of the Learning Layers project. Here the point of interest is, how to find common ground for discussing le*ssons from pilot projects* and *achievements of accompanying research*, when the pilot contexts have been that different – vocational schools (in the above mentioned pilot projects) and intermediate training centre (in the Learning Layers' Construction pilot).

In the light of the above presented subsections it is possible to outline three main criteria (and themes for comparative analyses) that justify the use of these articles as reference materials for such comparative reflections:

a Both articles (Klieber & Sloane 2007 and Kremer 2007) refer to pilot projects with relatively open innovation agendas. Support for self-organised learning and for use of digital media in vocational education were highly dependent on teachers' capability to become owners of innovation. Therefore, the pilot projects needed participative process structures in which accompanying researchers could support teachers (individually and in teams) in making their own interpretations of the innovation concepts and in putting them into practice.

b The article of Klieber & Sloane (2007) makes transparent a workshop process that makes it possible for the teachers to discuss their ideas of 'self-organised learning' and to develop a more systematic understanding in terms of

educational planning. The frameworks of accompanying researchers provided support for the workshops and for analysing experiences and results from the perspective of educational management (at different organisational level). This provides a basis for further reflections on the sustainability of the innovations.

c The article of Kremer (2007) makes transparent the uncertainties in pilot projects that aim to promote digital media as means to support self-organised learning in vocational education. The achievements of the pilot project and the pedagogic reflections demonstrate the multiple roles of digital media. However, the article emphasises that digital media shall not be treated as an isolated factor but as developmental tools to enhance vocational learning in holistic action-oriented learning contexts.

6. COMPARATIVE REFLECTIONS AND CONCLUSIONS

Here it is appropriate to start with the main differences and to put them into relative terms:

1 The pilot projects that were analysed in *the two reference article*s took place in in the context of vocational school curriculum. This gave these pilot projects more stability than the starting point of *Learning Layers* – to promote use of digital media in the context of informal learning. However, in both contexts the accompanying research teams were working with rather open innovation agendas. Moreover, the success of innovations was highly depen-

dent on, whether the practitioners (teachers or trainers) become owners of the innovations.

2 The pilot projects in *vocational schools* were working with curricular and pedagogic reform concepts to introduce learning arrangements based on self-organised learning. In the *training centre Bau-ABC Rostrup* the principles of action-oriented learning and self-organised learning had been mainstreamed and were incorporated into the guiding scripts for apprentices' projects (the Bau-ABC White Folder). However, when introducing new learning arrangements and digital media, the teachers and trainers had to develop a more explicit interpretation on their guiding principles and their practical implications for teaching/training strategies and learning arrangements.

3 The pilot project *working with digital media* (as support for self-organised learning) in vocational schools was relying mainly with customisation of existing apps and platforms. The *Construction pilot of Learning Layers* was working with participative co-design that took a course towards a new integrative toolset – based on software development during the project. However, in both cases the digital tools had to be incorporated into the vocational learning environments. Teachers and vocational school students had to find their own ways to co-develop and use the tools to reach their own objectives. Likewise, the trainers and apprentices had to find their ways to build stacks and to use the functionality of Learning Toolbox to implement their projects.

Secondly it is worthwhile to consider, what specific features these projects had that could be brought into discus-

sion as contributions to mutual learning between different project designs and approaches to accompanying research.

a In the pilot project *mosel* such a specific feature was *the participative workshop process* based on teamwork in preparing reflection documents and on interviews between teams (initial reflections, first mutual interviews, stations, relay-interviews). This process contributed to the awareness and articulation of the guiding principles.
b In the pilot project Kool such a specific feature was the *engagement of both teachers and learners into co-shaping of the web resources*. This was the case with the basic support platform (for learning English), the self-assessment tools and the joint online learning resource (*Glaskompendium*). Here the complexity of the tools and the intensity of participation grew gradually in the course of the project work.
c In the Learning Layers' Construction pilot such a specific feature was *the multimedia training* – with two kinds of training schemes. *The earlier multimedia training* equipped the voluntary participants with overview on basic web tools and enabled them to shape their blogs as online repositories for training materials. *The Theme Room Training concept* provided a basis for continuing engagement of the whole organisation into a process of self-organised capacity-building in the use of social media and preparation of digital learning contents. Moreover, the training was supported by accompanying researchers *and* peer tutors from the training centre (who worked as tandem pairs when supporting their groups). Unfortunately, only one cycle of such training could be implemented during the project.

Finally, it is appropriate to consider, in what was the accompanying researchers have contributed to the sustainability and transferability of the innovations developed in the respective pilot projects.

- Concerning the pilot project mosel, the accompanying researchers developed a framework for educational management that made transparent structural and processual working perspectives to promote innovations (see Klieber & Sloane 2007).
- Concerning the pilot project Kool, the accompanying researcher developed pedagogic frameworks for highlighting the role of digital media as developmental tools and for their incorporation into complex and holistic vocational learning environments (see Kremer 2007).
- Concerning the Learning Layers project (altogether), the consortium shaped a set of documents called "Scenarios and Models" to support further development and transfer of the key ideas.

Regarding the transfer of innovations of the Construction pilot, the accompanying researchers developed two such documents to promote the exploitation of results:

- For vocational education and training contexts the document "Action-oriented learning ..." that summarised the key results and outlined a follow-up scenario with the cross-cutting theme 'health and safety'.
- For workplace contexts the document "Organisational and cross-organisational learning ..." that presented an exemplary use case involving a key organisation, partner

organisation and a construction site. This document outlined several follow-up trajectories in the ecological construction work.

Altogether, it is possible to conclude that the accompanying research in the Learning Layers' Construction pilot fits into a wider group picture of accompanying research approaches with relatively open innovation agendas. In spite of institutional and organisational differences it has been possible to trace similar motives, process dynamics and support initiatives. However, the parallel cases have been clearly focusing on school contexts and benefited from the stability of school structures. The special challenge for Learning Layers has been to promote the innovations beyond the immediate pilot context – the training centre – to other learning venues of vocational training *and* to organisational learning contexts of construction companies.

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VIDEOS

LTB Video 1/2014 The Multimedia Training of Learning Layers has had impact http://learning-layers.eu/video-1-the-multimedia-training-of-learning-layers-has-had-impact/

LTB Video 2/2014 Bau-ABC trainers' views on the use of Learning Toolbox in training http://learning-layers.eu/video-2-bau-abc-trainers-views-on-the-use-of-learning-toolbox-in-training/

Emotional Capital, Educational Leadership and Enabling Teachers: Emotional Competencies as Professional Competencies to Teach for Learning and Developing Potential

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Inspired from Sen's macro-approach of capabilities (1999) to an individual perspective, we look how school leaders and teachers, in a context of hyper-modernity, must become "enabling" educational leaders and "enabling" teachers. From the emotional capital development, we show that all dimensions such as assessment procedures, gestures, attitudes, teaching and management styles, classroom, school and organization's managements are questioned and play an important role in promoting learning and developing autonomous people and revealing people creativity, and serving a better quality of life and social cohesion. Given globalization, international competition and the increasing diversity of students – the future workers - there is a need to examine how enabling teachers and managers and their given organizations can support every person' wellbeing, empowerment and success and, to do so, we ask in this chapter, which competencies or special "human" capital are required to face those changes challenges?

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Thus, in this chapter, we will present this conceptual model named emotional capital (EC), referring to a set of emotional competencies (social and personal skills), which is essential to enable human capital formation, and crucial for individuals for its accumulation and, its optimal exploitation and people well-being at work as well. Those emotional competencies are essential in the new contexts and changes in teaching as students' attitudes and the environment has changed. This set of emotional competencies constitute their EC and are nowadays essential professional competencies to face these new challenges of teaching for learning and developing people's potential, and to become 'enabling' teachers and educational leaders This emotional capital facilitates acceptance and creativity via active pedagogies and support new management styles and pedagogy changes, allowing people to empower people to change themselves for a better quality of life and to change the society.

Keywords: Emotional capital, Emotional Competencies, professional competencies, leadership style, Enabling Teachers and Educational Leadership

1. INTRODUCTION

The contexts of teaching have changed for the last decades. New tensions, new requirements, new pressures and changes in the environment... modify teaching jobs. Students are more demanding, less motivated, more inclined to defend their rights than to fulfill their duty. The administration or the educational authorities are making more pressure on teachers and there is less and less social recognition of the teaching jobs as well. Are

teachers prepared for these changes and pressures? The traditional picture of the teacher as the "Master of the knowledge" with an institutional power is disappearing. A new leadership style of teachers seems more appropriate to respond to those challenges to become enabling teachers and educational leadership. This implies new competencies: the emotional competencies.

Those changes remind us that the teaching act is not only a cognitive action but first and foremost a social and affective action where emotions interfere in the class and work atmosphere.

Precisely, in this article, I will analyze those emotional competencies as professional competencies for emotional work as teaching job: toward an ethical leadership style of teaching. For that, I will gather research from education, HRD and Human resource management science and psychology (Gendron, 2007d) raising the question: to which extent the teacher style can be approached or compared with a manager and what could we learn from the management sciences research?

2. FROM THE TRADITIONAL TEACHER TO THE "LEADERSHIP" STYLE

2.1 THE TRADITIONAL STYLE

For a while, teacher power was based on his or her knowledge and his or her institutional power given by the school responsible. What I named the "institutionalized authority" of the teacher (Gendron, 2007a, e) coming from the Latin origin of authority "potestas". Since then, this authority has changed and has been questioned. His or her power is not any longer based

only on knowledge but also on his or her competencies to negotiate his authority and to manage his or her classroom by gaining the classmate adhesion and attention. This form of authority in its Latin origin and meaning are related with "allowing" (allow the others to grow) and gaining authority via his or her competence and abilities (Obin, 2001) relying on legitimacy. In pedagogy, this authority refers to the medium competencies described in Barnabé et Dupont (2001), called in management science, the leadership style. A authority based on authenticity and engagement.

2.2 TRANSACTIONAL AND TRANSFORMATION STYLE TO ENABLING TEACHERS AND EDUCATIONAL LEADERS

Barnabé et Dupont (2001) described the "mediator teacher" as able to make easier the link between knowledge and students learning process and motivation: its "rapport avec le savoir". The topic is not a purpose in its end but a mean to develop the person where the learner become autonomous and actor of his or her own learning process. This authority is based on trust, a good climate of work, and fairness. This teacher profile looks like the "democratic leadership" of Lewin, K. et al. (1939). Those researchers show that such a style has a positive impact on students' performance and the atmosphere of the group.

In the management models, the leader (Gendron, 2007d, e) is different from the "manager" or "technocrat" whom has the abilities to administrate but not leading the group toward a new phase of development. The term "leadership" is borrowed from the English language which defined the capacity of a person to lead or drive people or organizations in such a way that they

reach the objectives planned. A leader is able to guide, influence, inspire, and initiate changes and engagement of his or her followers, collaborators, people he or she has in charge. This style is different from the technocrat which characterizes the "transactional manager" (see Table. 1).

Table. 1
Toward new manager patterns (Gendron, 2006)

Old Fashion Manager Pattern: technocratic	New Manager Pattern: leadership style
Transactional Manager	*Transformational Manager*
• Talk	• Listen
• Product oriented	• People oriented
• Departement needs	• Client needs
• Competition	• Cooperation
• Individual	• Groups
• Logical	• Intuitive
• Written communication	• Verbal Communication
• Saleable or marketable	• Quality
• Image	• Substance
• Secret	• Honesty
• Short Term Gain	• Long Term Relationship
• Immediate Results	• Process
• Critics	• Motivating
• Hierarchical	• Centrarchical

For the former, the relationship is focus on the accomplishment of the tasks and the check-up of the results or outcomes. It can be done a comparison with the traditional teacher focus on his or her curriculum, on the task and the outcome. The leadership style is related with the transformational manager responding

to the actual needs in teaching job. The transformational manager, the leadership motivates his or her collaborators in a way that those later sounds united. This behavior induces a process of transformation among the collaborators or students or learners. Le leader is able to transform the situation by suggesting his or her vision and modifying the behaviors of the others to make those later, real changes agents. His or her authority is neither institutional nor charismatic but he or she "serves" the people around him or her.

If the management models help at clearing up the different style of managements and allow some comparison with teachers' style, it differs on its purpose and ends. In education, the teacher with a leadership is different from the transformational manager. Without the respect and the recognition of the person's dignity, we cannot talk about "leadership". The teacher with a leadership style must be qualified of ethical leadership. Beyond the transformation of the organization and its members by the leader, the ethical leader works actively at helping each person to grow which this personal growth also benefit to the organization in its all.

The ethical leadership is focus on equity dimension, human values and life meaningful, and human respect. Beyond those functions or prescribed tasks, he or she is serving the person and try to make the person around him happy. He or she is caring of the well-being of the persons constituting the community. The ethical leadership is less susceptible to abuse or to be far from ethic values compared with the transformational manager which this later don't base his or her action on the notion of service. The ethical leader doesn't look for to be served by others but at the opposite, to serve the others (Greenleaf, 1970).

The enabling teachers or enabling educational leaders is inspired from Sen's work on capability, in the 1980s: "a person's capability to live a good life is defined in terms of the set of valuable 'beings and doings' like being in good health or having loving relationships with others to which they have real access." The enabling teachers or educational leaders have to adapt themself to changes challenging education work as an emotional work. They have to copy with pressures and enlarged mission : violence, stress, burn out, overloaded with work...and to survive or remain resilient to switch to traditional teaching to an more active and positive posture, which will feed and create "enabling" environments by becoming mindful and positive: toward "enabling" teachers for favouring people's potential, creativity, innovation. To do so, teacher have to have developed critical thinking about their own way of teaching, as being reflexive teacher. They have to work on their self to become benevolent and mindful to be aware about their impact on people. Then, passed this stage, they have to look at people in a benevolent way, and looking at their potential to empower them to develop or mobilize and valorize students and people potentials instead of focus on average knowledge and skills acquisition: toward enabling teachers and educational leaders that we illustrate by this following picture and posture regarding the different style.

We can summarize the teacher's styles and role as follows: the transactional teacher, or also called technocrat, "does the thing right", the transformational teacher or "leader" "does the right thing" and the enabling teacher and enabling educational leader do the thing that should be done; those latters can be called Human Resource Developers or Educational Change Agents (Gendron, 2016). Precisely, enabling teachers and educational

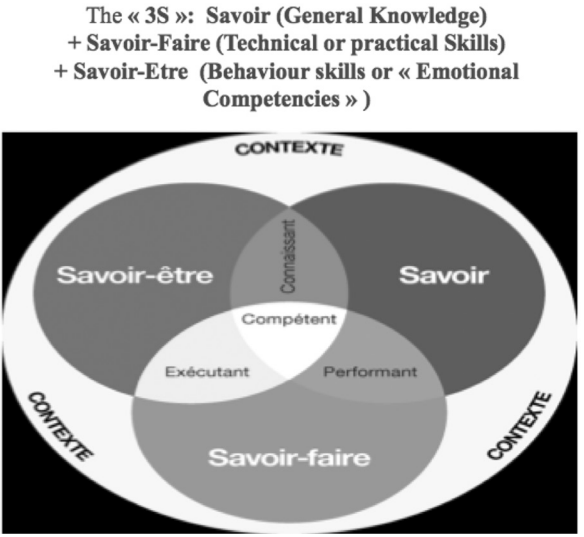
leaders beyond traditional teaching they empower their students or collaborators and their potential and let express the extraordinary potential of each ordinary people (Gendron, 2006).

3. EMOTIONAL CAPITAL: EMOTIONAL COMPETENCIES AS PROFESSIONAL COMPETENCIES

3.1 THE COMPETENCIES MODEL OF THE "3S" OF THE LEADER

Beyond general knowledge, and technical knowledge or know-how, the most important of the characteristics of the leadership corresponds to the "savoir-être" referring to behavioral competencies as the personal and social emotional competencies. A competent teacher must have developed the three dimensions to perform his or her job. I define the Competence through a model of 3S: "3S: Savoirs, Savoir-faire et Savoir-être" (Gendron, 2006, 2009) : General Knowledge, Learning by doing (technical skills), Learning to behave and to be (behavioural skills, social and personal emotional skills). Inspired from Boudreault (2002), "being competent" is considered, regardless of professional activity, (Gendron, 2004) a combination of three kind of knowledge (see Fig. 2).

Figure. 2. Model of the "3S": "Being Competent", (Gendron 2004)



To face the changes and challenges, teachers or trainers with a leadership style must respond to those three dimensions of knowledge or the plural knowledge. They must have developed those three dimensions of knowledge and skills. The "Savoir-Etre" refers to the emotional capital which is crucial to ease the Human capital constitution and foundation.

The genesis of the leadership relies on a complex and personal combination of knowledges: "savoirs, savoir-faire et savoir-être" which doesn't come with the position but the candidate competence. The leader is able to guide and influence a group to reach the objectives. This ability rest on his or her competencies: he or she likes to dynamic the group, to suggest methods, advice, define the great lines of the work, analyze, feel, regulate intern tensions in the group, generate a smooth climate at work and

represent the group and the organization. He or she is described as a high energy potential, and engagement in the action, commitment (perseverant, implied, takes initiatives and risks, confident, flexible regarding adaptation and learning process, ethic, sense of the responsibility, values oriented toward collaboration and the service to the others. Those characteristics refers to professional competencies: the emotional competencies.

3.2 EMOTIONAL COMPETENCIES: PROFESSIONAL COMPETENCIES

Among the emotional intelligence (EI) models, the Goleman and Cherniss model (2001) declines the EI through four set of emotional competencies divided up themselves into two categories (see Table. 2).

Table. 2. Personal and Social Emotional competencies (Cherniss & Goleman, 2001)

Personal Competencies (intrapersonal)	**Social Competencies (interpersonal)**
Self-Awareness – Emotional self-awareness – Accurate self-assessment – Self-confidence	Social Awareness – Empathy – Service orientation – Organizational awareness
Self-Management – Emotional self-control – Trustworthiness – Conscientiousness – Adaptability – Achievement drive – Initiative	Social Skills – Developing others – Influence – Communication – Conflict management – Visionary leadership – Catalyzing change – Building bonds – Teamwork and collaboration

3.3 THE ESSENTIAL EMOTIONAL CAPITAL OF THE TEACHER OR TRAINER

"The Emotional Capital" is the set of resources (emotional competencies) that inhere to the person, useful for personal, professional and organizational development which participates to social cohesion and personal, economic and social successes (Gendron, 2004/2008). It belongs to the human capital defined in a broader sense than the one in the human capital theory of Becker (1964). Those competencies related with psychosocial competencies are useful at work. Nevertheless, they are not taken into account in the traditional economic model of the Human capital. Escaping from the measure, their impact is therefore under-estimated et remain undervalued even if very important for emotional work as teaching. The changes in education and teaching contexts have underlined their importance. For instance, because of the increase of universities enrollments and access, the heterogeneity of the public, teachers need more and more to deal with conflicts, violence, and negotiations which implies to have developed those emotional competencies: know how to listen, to deal with conflict, to work collaboratively.

Number of research show that people who have developed such competencies manage better interpersonal relationships which participate to a better atmosphere at work and a better resilience and maintain the health (Durlak, 2003, Masserey, 2006).

In sociology if emotional work deal with the conditions and context of work (Hochschild,1983) and in psychology to the person endowment, in economics of HRD, those two approaches have to be combined and enrich each other. Because the concept of "competence" combines the two dimensions. The com-

petence is recognized through the action and the context and its nature (Gendron, 2004). And teaching job, because of its emotional dimension suppose those competencies (Gendron, 2008). They are part of the job despite their invisibility. They influence the personal development and the people and class performance. Their return is plural: personal and collectives on performance, well-being, resilience, personal development, social cohesion, the learning process...make them a real capital: an emotional capital. Beyond the personal benefit of the teacher, those competencies benefit to their activity and their students. The teacher's leadership through his or her exemplarity will stimulate and develop student emotional capital. Inscribed to the social capital sphere, the building of the EC (balance one) allows a democratic socialization and participate to the human capital constitution.

Those emotional competencies are the one described in the leadership style above and which must be developed by any person in charge with other persons (educators, trainers, teachers, nurse, team manager...) to face the new social requirements. If missing, those workers in emotional work will be less efficient. At the contrary, as Den Brok, Fisher, et Scott (2005) showed, when emotional competencies are present, they increase the motivation, the order and the students' performance and success.

5. CONCLUSIONS

Classroom practices, teaching styles, active pedagogies are part of the success of empowering children and students to develop those social and personal emotional competencies referring to their emotional capital challenging creativity, empowerment

and citizenship issues as well. Thus, enabling teachers and educational leaders, understanding, caring for and developing strong positive relationships and responsible skills by developing their emotional capital helps social cohesion at living together respectful of Others' differences and diversities, and at the same time, at revealing each person's potential and creativity, as developing quality education which are nowadays important challenges in education.

To end, those emotional competencies belong to the key competencies of the Ocde-Deelsa (2002) report "allowing people to participate efficiently in multiples contexts or social domains and contribute to the global success of their life and to the good run of the society". Research in neurosciences, in psychology, in educational sciences and in economics demonstrate the soft skills and social and personal emotional competencies importance. Because of their impact and plural return, personal, social and professional, the set of those competencies constitute a real capital which is important to invest in it; they are crucial professional competences for teachers and educational leaders for teaching for learning and for empowering people. The new educational challenges are about training teachers and leaders to become "enabling teachers and leaders" who will be able to develop students' key competencies for employability, creativity and enjoyability, revealing their potential and enhancing their quality of life.

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Bridging Methodological Divides – Policies Studies and Empirical Work in Research in VET

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Abstract: As acknowledge in earlier research the complexity of research in VET increases given by the fact that we are dealing with problems in different levels and with different character. At macro level research in VET is concerned, for example, with policy issues, international comparison as well as cross-national challenges of qualifications frame works and mobility of work forces. At what has been defined as meso-level, there are significant challenges from the need to deal with employability, structure of VET systems and dealing with drop-outs. Equally challenging are the problems at micro-level such as the complexity of organizing learning process in different contexts (classroom and workshop), the development of vocational knowing and technological literacy. From a Swedish VET research standpoint the paper attempt to look into how to approach research problems avoiding the divides that traditionally influence the selection of methodologies and theories, also which ontologies and epistemologies lays behind the ongoing research in VET and identify cases of multi-methodologies and multi-theoretical approaches worth studying closely and disseminating.

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This presentation is part of a contribution to a expected broader discussion within the frames of the European VETNET.

1. INTRODUCTION

There is a critical need to improve vocational education and training (VET). A long-sighted strategic development of vocational education and training is needed to secure employability and social cohesion. Vocational education and training has become an increasingly important part of the educational and political debate and interest has also increased in the mass media. The ongoing discussion includes also the role that compulsory education activities in particular career guidance could have in supporting the students' future occupational choice. Less focus has been directed to the role of non-academic subjects and its potential to prepare student for vocational educations. The situation for VET has increasingly been subject for research and a recent national inquiry found that Sweden is having problems attracting students into VET (SOU 2015:97). The Swedish debate and research findings echo concerns being found internationally where VET systems are being challenged to improve skills development, employability and social cohesion (c.f., EFA, 2012).

There are two key issues that inform the political and educational debate related to Swedish VET: how to tackle low application rates to the programs and how to deal with the problem of dropouts. Why this is, and has been for a long time, an issue of societal importance is twofold. First, because it is important for individual employability and for the knowledge production that is vital to the successful trade and industry.

Secondly: a successful, well-functioning VET, has a positive impact on social cohesion (Lundgren 1979; SOU 2015:97). Both of these aspects are vital to a nation's capability to build social capital and remain competitive internationally (Winch, 2000).

However, Swedish research has predominantly focused on investigating various problems related to vocational education and training at the upper secondary level, such as, social stratification, the classroom activities and policy development (e.g., Henning Loeb, 2012; Panikan, 2014). Internationally, more attention has been given to the development of skills and knowledge of relevance for future vocational education and training as part of compulsory education activities (c.f., Cedefop 2014; Moreno Herrera, 2000; Westerhuis, 2007).

The Swedish classroom studies within VET have provided a meaningful insight into the process of knowledge acquisition, knowledge development and vocational identity. The findings suggest the convenience to look closer to the learning in non-academic subjects in compulsory education as this specific learning might provide knowledge and skills of relevance for VET. Thus, for a deeper and more comprehensive understanding of the challenges Swedish VET faces, it is important to develop research that bridges the gap between policy studies and empirical studies and that follows international examples where preparation for VET has been focused on.

From the standpoint embraced in this paper the study of changes over time as well as the transformations between levels (policy and classroom) could help to gain a better understanding about the potential of compulsory education to enhance VET. The presentation that follows in this paper intends to initiate discussion and is at the same time an example of an attempt

to bridge the current divide. This paper is largely based on an application for research funds submitted by the authors to the Swedish Research Council that intended to be a twofold contribution. First contributing to improve the present situation of VET (eg. problems of dropouts) by investigating the role of non-academic subjects in preparations for VET. And secondly, making a methodological contribution to research in VET by using a multi-methodological research design where policy studies are combined with classroom studies to accomplished the research aims.

2. A CASE STUDY OF A RESEARCH PROPOSAL

The research proposed intended to investigate how non-academic subjects in compulsory school have contributed to conceptions of VET and occupational paths both historically and in contemporary education. One assumption when putting focus on the non-academic subjects in compulsory education is that these subjects has the potential to prepare students for learning and learning environments that is particular to vocational education. Hence the perceptions of non-academic subjects in compulsory education, and the development over time, can be an area of interest to understand more in-depth the conditions for VET in upper secondary education. Recent research on vocational learning stress that it learning in non-academic subject areas is a highly complex process, different from learning academic skills (Lave & Wenger, 1999; Billet 2001; Billet & Choy, 2013; Lucas, 2014). In view of the challenges Swedish VET is facing and in relation to this research there is reason to ask how primary education may contribute to develop condi-

tions for vocational learning as well as academic learning. From earlier research on the non-academic subjects there is also reason to assume that the conceptions of these subjects shift over time (Pettersson & Åsén 1989,). Based on this research one assumption underlying this research approach is that these shifts impact on what preparation for vocational learning is made possible in the teaching. Equally, it will suggest empirically investigating perceptions of how educational practices in non-academic subjects and activities could potentially prepare individuals for vocational education. Consequently, we identify two main areas of attention for research. First, an analysis of historical curriculum development. Second, a classroom study to observe teaching strategies in non-academic subject as well as interviews that will focus on perceptions of how the present non-academic subjects foster knowledge, skills and attitudes of relevance for future VET.

3. PURPOSE AND AIMS

The overarching purpose of the suggested research is to contribute to a deeper knowledge and consequently a better understanding of two of the most central problems of VET in Sweden at present: low application rates for the programs and student dropouts. This is done by focusing on the relation between general education and VET and how non-academic subjects can contribute to develop learning for practical and vocational skills, an area that still remains largely unexplored within Swedish educational research.

The aim is to investigate how curriculum development has historically depicted essential knowledge and learning in the

non-academic subjects of compulsory education and its relevance for VET. Focus will be on changes in perceptions on practical subject in relation to their function; what knowledge and why this knowledge was assigned to the practical subjects to provide. Another task will be to investigate perceptions of how present practices in non-academic subjects contribute to the preparation of students to learn in vocational education and training. Consequently the research questions to answer would be:

- How has the curriculum shaped the form and content of the non-academic subjects historically, and how does this reflect conceptions of students' future vocational learning?
- How do teachers in non-academic subjects perceive the value and possible contribution of current teaching and learning process in compulsory education to the development of knowledge and skills relevant to vocational education and training?

4. SURVEY OF THE FIELD

Research within the VET field in Sweden is somewhat extensive in relation to study of economic development and political interest in vocational education (e.g., Nilsson, 2008, 2010; Olofsson, 2001, 2005; Panikan, 2014). Interest in studies of the development of Swedish VET system from policy and socio-economic perspective has particularly increased after Sweden has undergone several major reforms in the last decade following similar paths taken in Germany and Austria (c.f., Panikan 2014; Nilsson 2010). This earlier research provides relevant knowledge to this research approach as it gives an insight into the development

of VET in relation to demands from different interest groups in society. Equally, vocational education has been the focus of research that investigates the relevance of class in education policy (Nylund, 2012, 2013).

Historical studies on Swedish VET primarily focus on institutional change and relations between the state and the trade and industry (Olofsson 2001, 2005; Nilsson, 2008, 2010; Lundahl, 1994,). The historical development of compulsory education and the interests of the trade and industry cannot be disassociated from VET. The focus of historical research on vocational education has primarily been on training offered at secondary level or equivalent and the comparative perspectives have been predominantly international. The design, goals and objectives of the non-academic subjects in compulsory education have not been focused to the same extent. The research suggested here pays attention to this circumstance.

A volume of research investigating different dimensions of vocational education and training has been produced over the last five years as a result of the Swedish Research Council's financial support to two research schools on vocational didactics (VR 2011-5301). Earlier research also indicates that there are special conditions for knowledge production and learning in VET. This research has problematized the kind of knowledge demanded or sought after in VET, the learning process that it requires and the learning environments which are likely to contribute to the development of this complex forms of knowledge (Broberg, 2014; Carlgren m.fl., 2009, Carlgren 2015; Gustafsson, 2000; Jernström, 2000; Lindberg, 2003; Lave & Wenger 1991; Molander, 1996; Nielsen & Kvale, 2000; Säljö, 2014). This research has however, primarily concentrated on upper second-

ary VET and apprentice learning in a trade. Even so, it does suggest that the learning, knowledge and the learning environment in compulsory education are different in non-academic and academic subjects. Questions regarding how compulsory education prepare individuals for the type of learning and learning environments they will encounter in VET still remains largely unanswered.

Another important line of earlier research focuses on knowledge and skill transfer between education and work. Studies where the transition is analyzed and problematized in relation to the transfer between different educational forms, such as compulsory education and VET (e.g., Hanushek, Woessmann & Zhang, 2011) are particularly important. Comparative international studies indicate the convenience to investigate over life span transitions from general education to vocational education in relation to development of labour market (c.f., Rauner & Maclean, 2008). How general education, specifically non-academic subjects, can support the development of relevant knowledge and skills for VET also has a considerable history of research within the polytechnic school of thought (c.f., Deißinger, 2008; Moreno Herrera, 1998; Preston Mercer & Ponticell, 2012).

The students' ability to cope with a vocational program is related to the so-called wrong selection and it has been recently in focus of a national inquiry (SOU 2015:97). The report found that Swedish 9th graders do not have adequate level of knowledge about employment and the labor market. As a result, it is suggested that a number of actions are required to improve the conditions for vocational education including curricula change and providing more resources for counseling. The report pri-

marily focused on addressing the lack of knowledge students have by providing additional information. The findings suggest that students need to become more knowledgeable in order to make appropriate decisions about their further education; however, it also indicates that compulsory education can and should contribute to students' career exploration that include non-academic future occupational paths.

VET problems with dropouts and low application rates is linked partly to the social stigma of vocational training, and partly to the lack of knowledge about what VET is. The work of Nylund (2012, 2013), and Högberg (2009), with a sociological approach, problematize class and gender issues related to VET. Their research illustrates how social structures can prevent a desirable development of VET both from an economic perspective and from the perspective of social cohesion. As the earlier mentioned national inquiry concludes, ignorance of professions and VET open up for social prejudices to guide students' choice of education program to the disadvantage of VET (SOU 2015:97). The possible contribution of non-academic subjects in the compulsory education to the perception of VET is rarely considered in relation to these problems. Consequently, further research is needed to determine how these subjects do or can contribute to student exploration and consideration of VET career path. Furthermore, there is a scarcity of research in Sweden in what concerns analysis of perceptions of relevant stakeholders about the benefits of non-academic education for successful VET; internationally, however, this has been a focus of inquiry (c.f., Rauner & Maclean, 2008).

5. PROJECT DESCRIPTION

The aim of a potential project would be twofold: to investigate perceptions of ways in which non-academic subjects support VET in ways of what and how it is taught and to ask corresponding questions about how the institutional development of primary education support vocational education – from a historical perspective. The first aim will be addressed through a study of curriculum development between 1969 and 2011 in selected non-academic subjects, craft, technology education, music, art and home economics. A study of this kind will also pay attention to what non-academic subjects have been considered important and why some have long traditions in the curriculum compared to others. The second aim will be accomplished by investigating changes in perceptions of the value and content of non-academic subjects to support VET from a classroom-close perspective by way of analysing historical educational materials and conduct classroom observations as well as interviewing teacher and students in present day compulsory education. The historical studies will investigate how the development of external and internal conditions of compulsory education has informed the perceptions of non-academic subjects' potentiality to encourage non-academic education. The empirical investigation proposed will be outlined in relation to the findings of the historical study.

6. THEORETICAL GROUNDS AND METHODS

The theoretical foundation of the proposed research is curriculum theory. Curriculum theory applies to the development of understanding in both the past and the present and will therefore serve to link comprehensively the two aims with the study.

Analyses grounded on curriculum theory can provide an understanding of the relation between the social and historical conditions for education, and of how societal and educational values and norms are codified into school curriculum and also shaped in day-to-day school practices (Bernstein & Lundgren, 1983, Lundgren, 1979).

One way to understand the reforms taking place after World War II is through the concepts of curriculum codes (Lundgren, 1979). The historical codes suggested by Lundgren, describe the educational development from small-scale institutions to rationally organized national mass education systems. The codes emphasize and make it possible to understand how vocational education is related to the general compulsory and secondary school system. The relation between education and production, or between school and working life can be discussed by using concepts such as classification and framing (Bernstein & Lundgren, 1983, p 22–47).

The use of curriculum theory as a theoretical framework is expected to help understanding how VET is organized within an education system undergoing radical reforms after WWII and currently facing significant challenges. As Goodson points out, "the history and sociology of the social construction of school curricula is therefore a vital prerequisite for reconceptualized curriculum study" (1994, p. 113). Likewise, this theoretical framework helps to understand the relationship between VET as organized in day-to-day education and the assumptions regarding vocational professions. Following theoretical constructs by Bernstein & Lundgren (1983, 66-125) the way knowledge is organized and classified will be put in relation to how students view their forthcoming professional careers. The same

theoretical framework can be applied to explore how other key stakeholders, see the benefits and ways in which non-academic subjects can contribute to future occupational paths.

The historical study utilizes text analysis using central concepts from curriculum theory and the interpretative methods of historical text analysis. The historical study focuses on the period between 1969 and 2011, including the preparatory and commission works of the reforms implemented during the period. In the cases of Sweden this could include seven curricular reforms from the post war period up until the most recent reform, which took place in 2011. The historic research focuses on how the education is organized (with particular focus on the relation to VET) and will emphasize the discursive aspect understood as corresponding to the formulation arena in curriculum theory (Lundgren, 1984). Written documents such as policy documents from the Swedish government, The Swedish National Agency for Education, can be analyzed as well as [remisssvar] and debates published in national news papers.

7. SIGNIFICANCE AND METHODOLOGICAL IMPLICATIONS – CONCLUDING REMARKS

There are two overall outcomes of significance that can be expected from this proposed research. First, it will provide a deeper understanding of how curriculum shapes the form and content of non-academic subjects. Second, it will provide new insights into the perceptions of key stakeholders about how current non-academic subjects in the compulsory school are, or are not, and could be contributing more to the development of knowledge, skills and attitudes relevant to future VET career paths.

We expect to achieve a better understanding of how the

rapid development of the labor market and the need for qualified workers is mirrored in educational reforms throughout the post WWII period, meanwhile developing an education system based on equality as well as differentiation. Findings will contribute to a more comprehensive understanding of the legitimization of the non-academic subjects, at a time when the gap between schoolwork and professional work is increasing.

By investigating the problem within the Swedish context it can be expected also to create basis for international comparative studies. This is of particular significance considering that internationally there is a relevant volume of research about the preparation for VET and the bridging of compulsory education and VET. The present shortness of similar research in the Swedish context creates difficulties to benefit from the international comparative studies; a problem that this project intends to contribute to ease.

It is anticipated that this kind of research will enhance future educational policy and decision-making concerning non-academic subjects in compulsory education.

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SECTION VII:

VET SYSTEMS, TRANSITION AND CHALLENGES

Approaches of Recognizing and Assessing of Immigrants' Competence

Johanna Lasonen*

Abstract: Immigrants' competence and skills are underutilized across the European Union (Schuster, Desiterio & Urso, 2013), including Finland (Lasonen & Teräs, 2014). Vertical mismatch of education levels and jobs particularly concern the third-country nationals. According to Chiswick & Miller (2008) educational mismatch explains almost two-third of the differences in human capital returns between majority (natives) and minority (immigrants). Identification and accreditation of prior learning and competence are concerns for immigrants as job-seekers, and teachers and employers as evaluators of immigrants' prior learning and competence. The research paper describes how immigrants define and experience recognition of their competence for employment in a new country. Having a job and income is a way off poverty for immigrants. A conceptual framework leans to a ciritical social theory of recognition. In-depth interviewing and questionnaire method were applied in data collection among immigrants who represented various occupational fields. The interviews were audio recorded, transcribed, and analyzed using a thematic analysis method. A third of the informants have been long-term unemployed. Those who had jobs, most of them

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had short-term and part-time work, and therefore their incomes were much less than the natives had. The complex concept of competence recognition and some implications are discussed.

Keywords: immigration, recognition of competence, prior learning, equity

1. INTRODUCTION AND RATIONAL

Migration process for persons is a transformation process with changing geographical and social environment, practices, norms and tools in new societal. The processes of change related to immigration (more broadly, migration) and social integration are closely interrelated. Some countries have a longer history in immigration than the others. One of the newest immigration countries is Finland. At the end of 2014, Finland had 310,306 citizens whose language was other than Finnish, Swedish or Sami language. The numbers of immigrants in Finland have multiplied with ten since 1990 (Statistics Finland, 2015).

Some 31,940 persons immigrated to Finland from foreign countries during 2013. Then about a quarter of them were returning Finnish citizens. The number of people whose native language is a foreign one grew by 22,119 (Statistics Finland, 2014). Immigration has had an impact on Finland's population growth. On the average, immigrants are younger than native Finns, which has a potential contribution to economy and to paying of greying Finns' retirement. Before the end of 2015, Finland has received some 32,476 asylum seekers (in 2014 the number was 3,651). The newcomers came from Iraq (20,495), Afganistan (5,241), Somalia (1,981), Syyria (879) and Albania (762) (Maahanmuuttovirasto, 2016).

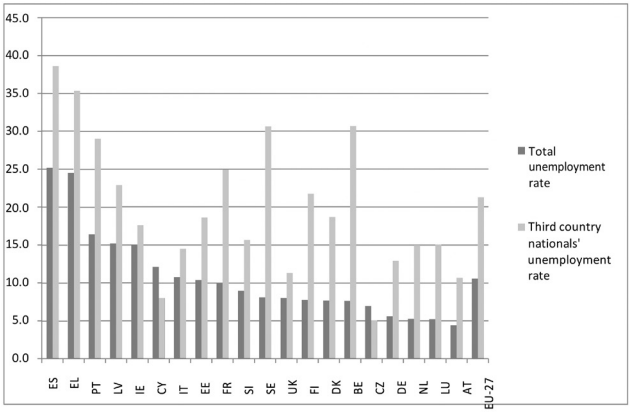
Immigrants include a wide range of groups of foreign-born people who, for a variety of reasons, have settled in a country temporarily or permanently other than where they were born. The classification of immigrant groups is multiple and so is the definition of immigrants (e.g., asylum seekers, refugees, and economic migrants). They all arrive for various reasons, such as for safety and protection, for taking up employment, seruc-ing a good future for their children or joining a family member. Collett (2013) argues that "those [from within the EU] who take advantage of their free movement rights are not considered immigrants, but mobile citizens, and have a set of near-equivalent rights to those of native residents in each EU country" (p.1). In this paper, the immigrants are the persons who have arrived in Finland as international students, workers, family members or asylum seekers from outside EU/ETA areas with intention to stay and work in the country.

The host countries look for highly skilled immigrants to drive economic growth in the knowledge-based economy. In turn, immigrants look for opportunities to education and to use their competencies, skills and qualifications in order to achieve better living standards by making their contribution to social life and the economy. However, immigrants' foreign-acquired skills, education and work experience tend to be discounted compared to those of the nationally and locally trained (Esses, Dietz & Bhardwaj, 2006). Even a high level of educational attainment does not diminish discrimination in competition for stable jobs. Heath & Cheung (2007) talks about 'ethnic minority disadvange'. The ethnic stratification, caused by direct or indirect discrimination, has become a concern in many European countries.

There is a general tendency in Europe for immigrants to have

proportionately higher unemployment rates than the native population (Burgoon, 2014). This is also the case in Finland. In 2013 the unemployment rate among immigrants was 23,8% (European Migration Network, 2013). Figure 1 below shows the unemployment of immigrants compared to total unemployment in the respective European member states.

Figure 1.
Total unemployment in EU-27[33] rates and unemployment rates of third country nationals (European Commission, 2013).



Source: Eurostat, Labour Force Survey, 4th Quarter 2012

The third country nationals refer to the persons who come from outside the countries of the European Economic Area (EU/ETA). As the figure 1 shows, in almost all EU countries the third country nationals' unemployment is much higher than in the host countries. The average of 27 EU-countries reveal that the immigrants' unemployment is almost a half higher compared to

33 EU-27 refers to the *European* Union (*EU*), consisting of *27* Member States in 2013.

the EU-host countries. The issue is how to recognize new comers' foreign credentials that fit to local labor market.

Recognition of immigrants' prior competence is highly varied, and in many cases even trained professionals have to start their studies from the beginning (Heath & Cheung, 2007; Lasonen, 2010; Schuster, Desiderio & Urso, 2013). In addition, not speaking or understanding the Finnish language sufficiently is one of the barriers for immigrants to find employment. For example, the Finnish government has launched policies and legislation to help immigrants' integration. The Finnish Integration Act (1386/2010) was launched by Parliament on 1 September 2011. The primary objective of the integration of adult immigrants is to promote their employment in the labor market. The high unemployment rate of immigrants (even three times higher or more among some nationalities than that of native population) is supposed to be lowered e.g. by supporting the employment of immigrants through integrated employment and entrepreneurship services and by strengthening internationalization skills in the labor market.

The main concern is how to indentify, accredit and recognize new comers' foreign credentials so that their competence has value in in the labour markets of host countries. Qualifications and competence has to be assessed. The assessment aims at recognition of (a) foreign formal qualifications; (b) formal qualifications of regulated professions (such as Medicine, Architecture, Public Accounting, Law, Pharmacy, Engineering and Psychology); and (c) recognition of competence and prior learning (formal, incidental/non-formal and informal learning).

Although the percentage of immigrant employees in Finland has been low, circa 4.5 per cent of the workforce, the number is

expected to increase dramatically in the near future. To make sure that immigrants' needs are met and that they succeed in education and employment, it is important to investigate the outcomes of immigrants' prior learning and competence. The research on recognition of immigrants' prior learning and competence coming from different international backgrounds, job placement, career prospects, recruitment processes and successes/failures is scarce. Equal access to education and employment are critical elements of recognizing and respecting diverse citizens. Therefore, the focus of this paper is on immigrants' goals and expectations for work and education, and recognition of their competencies and employment. The target groups included first generation adult immigrants. The research has searched the questions to the following questions:

1 What are the immigrants' expectations in terms of employment?
2 How do they experience recognition of their skills and competencies?
3 What are their career prospects?

Next, the concept of recognition is introduced as an intellectual tool of the analyses after which the research procedures are described. Finally, the research results are revealed.

2. THEORY AND METHODS

A) THEORY

This section discusses the concepts of mismatch and recognition of competence related to the phenomenon placing the newcomers into the host-countries' workforce.

Mismatch of Competence and Employment. Labor immigration is discussed in the context of economic crises and the impact it has on immigrants' employment opportunities. However, there has been a smaller body of literature investigating migrants' vertical and horizontal mismatch, over-education and employment, the causes of this mismatch and its impact on migrants' career prospect. East European immigrants, for example, are well-educated and still are working in low-skilled jobs, having low-paid employment, securing temporary contracts and working in precarious work conditions (Lasonen & Laczik, 2015). Immigrants are more likely to be over-educated than natives for their jobs (Chiswick & Miller, 2010). According to Chiswick & Miller (2008) educational mismatch explains almost two-third of the differences in human capital returns between natives and immigrants. Tijdens and van Klaveren (2011) used the Wage Indicator websites in 13 EU countries for their data between 2005–2010 to estimate the likelihood of being over-qualified immigrant workers. Their analysis was based on 291,699 observations and showed that over-education can be observed more often among the immigrant population than the native workers. They also claimed that being over-qualified is highest for immigrants working in EU15 countries. Mismatch and lower earnings might be due to migrants' lack of language proficiency in the

receiving country (Green, Kler & Leeves, 2007; Chiswick and Miller, 2009, Galgóczi, Leschke & Watt, 2012).

Clark and Drinkwater (2008) investigated factors influenced labor market success of recent migrants in the UK. They claimed that EU8 (A8) migrants experience the lowest return on their education in the UK and suffer considerable mismatch between their education and earning. While the mismatch between education and employment has been widely researched, relatively less work has focused on migrants' work experience in their home country and the difference that may make when taking up employment in the host country. Chiswick and Miller (2007) found that in the US labour market migrants' work experience in their home country does not support a better match with the skills requirement of their jobs. A possible explanation for this could be that employers are uncertain about the skills and competencies migrants obtained in their home-country employment. On the one hand, immigrants' employment in the receiving country can be explained by migrants' self-selection (Chiswick, 1999). On the other hand, the mismatch between their education and employment can be also accounted for by the extent to which the receiving country recognizes the skills, knowledge and competencies migrants obtained in their home country. Host countries should have a system that supports the recognition of migrants' competences, skills and knowledge, which is vitally important when aiming for the optimum in the labor market that is when a migrants' job matches their individual education and competence.

Recognition of Competence. Recognition as a societal phenomenon has been studied by academics representing the tradition of critical theory. Identity, self-definition and recognition

have been linked to struggles for dignity, respect and autonomy. Charles Taylor and Axel Honneth, who have conceptualized theories of multicultural politics of recognition, emphasize that individuals require membership in social groups with recognition of their distinctiveness, rights and resources. According to Taylor (1994), human life has a dialogical nature, and it is bound up with public recognition for the ethnic, religious and national groups. Identities are revised, affirmed and developed. Honneth (1992) indicates that recognition requires a measure of "social acceptance for a person's method of self-realization within the horizon of cultural traditions of a given society" (p. 191). Fraser (1997) goes further and says that social justice is at issue when a society's "dominant cultural patterns of interpretation and valuation" (p. 39) unequally establish the social bases of self-respect for different social groups. Fraser (1997) emphasizes a basic discord between a "theory of cultural justice" that enhances the recognition of difference and a "theory of distributive justice" that advocates the just distribution of resources (p. 6). Social respect is reflected in demands for and creation of equal opportunities for minorities as well so that their different premises – e.g., in terms of language, religion, ethnic background, and class – are taken into account. Respect and recognition are necessary for the socialization process and identity formation during the entire life span. Denial of recognition hurts feelings, because it causes harm to people or limits their freedom to act and hurts their positive self-concept. Honneth's approach also includes a normative ideal, since he argues that recognition is not only about abstract justice and equality but also about self-realization, an agreed mental atmosphere of a particular world of living way of life, and "good life" (Honneth, 1995, p.172).

Redistribution is a concept used by Nancy Fraser. She argues that today's social struggle for redistribution is as equally central a concept as recognition (Fraser, 1997). Fraser supports making an analytical distinction between economy and culture or class and status, a distinction between the economic struggle for equal distribution and the cultural struggle for recognition. She connects recognition not only to redistribution but also to status, since those lacking recognition become disadvantaged and less respected in social systems (Fraser, 1997). Charles Taylor (1994) ties recognition to multiculturalism. People typically become noticed as positively differing from others, especially on the basis of their particular cultural characteristics. Taylor defines two forms of recognition: equal human dignity as a form of democracy and the recognition of another person for his/her special character and identity. Special character is a driving force in the development of individuals and communities.

Recognition is also a prerequisite of social interaction, which refers to something more than just empathetic words and gestures (Honneth, 1995). It is a vital human need, according to Charles Taylor (1994). For this reason, it is not sufficient to express recognition merely through being considerate or polite, or tolerant toward different people. Recognition is a prerequisite for the development of one's own identity as well as for one's self-realization.

Foreign Credential Recognition. A qualified person has a formal qualification shown as a diploma or a certificate, or as a degree obtained from a foreign or host country. According to CEDEFOP (2008), "[a] qualification confers official recognition of the value of learning outcomes in the labour market and

in education and training. Qualification can be a legal entitlement to practice a trade." (p.144). The qualifications are applied as competence in certain contexts that may be working situations, educational and learning settings or in everyday life. Competence is a person's holistic feature consisting of skills, personality, attitudes and knowledge. Most of the migrants have formal education and qualifications when they move from one country to another. However, recognition of their competence in a new country is a challenge.

In general technical terms, recognition referes to a formal acknowledgement of the value of foreign qualifications by a competent authority. Recognition should provide access to educational and/or employment activities. Recognition of qualifications is of particular relevance for professions that are characterised by a specialised expertise, the capacity to meet some broader societal need. Regulated professions cannot be practised without authorisation, registration or the equivalent. Many regulated professions require a higher education degree (e.g. medical doctors, engineers). Recognition of qualifications also include certification of lower skills.

On a practical level, recognition of competence refers to measures by which to find out, estimate and compare qualifications and competencies obtained in another country, contrasting them with relevant requirements used in the receiving country. This can lead to accreditation and acceptance as equivalent with national qualifications. However, formal recognition of qualifications and methods between different countries vary a lot (Schuster, Desiderio & Urso, 2013). Although immigrants' prior learning and competence has been recognized, it does not mean that employers recognize the person and his/her competence on an equal basis with natives in the workplace.

For example in Finland, recognition of an immigrant's prior education and qualifications are regulated by the Finnish National Board of Education (NBE) under the Ministry of Culture and Education. Considering the regulated professions, for example, inHealth and Medicine, the National Supervision Authority for Welfare and Health (Valvira) under the Ministry of Social Affairs and Health grants the equivalencies of diplomas and degrees. In addition to recognition decisions made by the NBE, a field-specific authorities and employers can accreditate competence for newcomers to work. The NBE decides whether foreign qualifications give eligibility to certain public sector posts, while field-specific authorities, such as Valvira, give licenses to practice certain trades and professions in Finland. Private sector employers can assess their employees' qualifications and competence by themselves. Academic recognitions are decided by relevant educational institutes concerning e.g., how studies abroad will be credited and what kind of eligibility for further studies these may give. A study by Magdalena Jaakkola and Anna Reuter (2007) on the employment of educated female immigrants coming from the former Soviet Union countries showed that not even a university degree from the country of origin could guarantee employment. However, qualifications obtained in Finland helped them find a job after many years. A university degree from the country of origin seemed to be most useful to those women who had been living in Finland for longer than 10 years. There are also some fields, though, in which professional people can find a job immediately after their arrival in the new country (e.g. recruited workers in information and communication technology (ICT), top musicians and ice-hockey players).

Dynamic Assessment of Immigrants' Competence. Dynamic assessment (DA) is grounded in Vygotsky's writings on the zone of proximal development (ZPD) and has been widely researched in psychology and education. During the assessment procedure is crucial to understanding his/her abilities and for promoting development during the assessment process itself. Dynamic Assessment (DA) refers an "approach to understanding individual differences and their implications for instruction that embeds intervention within the assessment procedure" (Lidz & Gindis 2003, p. 99), which focuses on "on modifiability and on producing suggestions for interventions that appear successful in facilitating improved learner performance" (Lidz 1991, p. 6). DA differs from other assessments in the basic premise so that fully understanding abilities requires active intervention in development. Instead of assessing the product of prior learning, the procedure is transformed to processes through which abilities are shaped and constructed. Instructors' / assessors' interventions facilitate persons assessed to stretch beyond their present cabpabilities. As Poehner (2007) indicates, DA is a framework for approaching assessessment as an educational activity rather than a method that foregrounds learner development.

B) RESEARCH PROCEDURES

Subjects. The empirical data on which this article is based were collected in 2011–2012. The questionnaires, interviews and observation data involve first-generation adult immigrants. The research subjects were selected from among respondents volunteering to be interviewed. The response rate for the questionnaire was quite low, that is, only a small minority (20%)

of potential respondents answered it. The questionnaire, interview and observation data were collected from 78 persons who were born outside Finland and who have lived in Finland for three years or more. The respondents were reached via friends and associations, with the technique called 'snow-ball effect'. A majority of them (52.6%) had lived in Finland for 8 to 18 years. As regards the geographic distribution of the interviewees in the country, 44% lived in the Province of Southern Finland, 28% in the Province of Western Finland, 3.5% in the Province of Eastern Finland, 15.8% in the Province of Oulu, and 8.8% in the Province of Lapland.

Data Collection Methods. The qualitative in-depth interview allowed the subjects to tell about their education and work careers, experiences on competence recognition and about employment, career aspirations and future plans. These face-to-face interviews lasted for 90 to 120 minutes. The interviews were transcribed from audio recordings, consisting of some 1200 pages. Thematic analysis was used to analyze the qualitative data collected by interviews. The basic statistics were calculated from the data collected by the questionnaire. The two data complete each other. By means of the questionnaire comprising about 60 questions was gathered more specific information about immigrants' qualifications, fields of education, employment periods, professional and language skills, job seeking etc. Some questions were open-ended, and most involved checking of appropriate alternatives. By its nature, the lengthy questionnaire called for self-evaluation and reflection on one's own life history and situation.

Data Analysis Method. Thematic analysis, the method used to elaborate the data, is a qualitative method for identifying, analysing and reporting patterns or themes within data. It guides to organise systematically, describe and interpret the data collected by interviewing 78 adult immigrants (see Braun & Clarke 2012; Boyatzis 1998). Data corpus consisted of some 1200 pages of the transcribed text. The data set, which represents the interviewees' conceptions of recognition of their competence in Finland, was selected from the data corpus. The transcribed data has followed the five phase procedure: selecting data extracts, coding data extracts, searching potential themes, reviewing themes and making thematic maps, and naming themes. The research material was analysed in two phases, first, by reading all transcriptions to get an overview of interviewees' conceptions and ideas, and second, by focusing on those expressions relevant to our research questions. In the second phase, the interviews were read to eliminate those sections which were irrelevant to the research tasks. The responses to the interview question were condensed to the following table 2 that shows the compresses themes and their relationships.

The statistical analysis of the questionnaire detailed and enlarged on the in-depth interview responses. From the interviewees, almost six of ten (59.6%) spoke Russian as their first language and women were in clear majority (77.2%). The average age of all respondents (N=78) was 42.5 years. Seventy per cent were married or lived in an equivalent partnership. The respondents had typically one or two children. Most of the children were at school age or at student or working age. A fourth of them held a nationality other than Finnish. Less than a fifth had adopted Finnish citizenship. Roughly a third (32%) held

a dual nationality, most often the combination of Russian and Finnish. Of the respondents 24% were unemployed at the time, 20% were studying or worked part-time, and 37% were working full-time. In summer time, however, their unemployment rate increased considerably in years 2008–2012, which tells something about the terms of employment for these immigrants.

3. RESULTS

Many respondents had used the chance to apply official recognitions from the Finnish National Board of Education for their qualification attained from the country of origin. Their qualifications were also approved as parallel to Finnish qualifications partly or in full. Most typically, the official recognitions of qualifications were applied for Master's degrees in linguistics and engineering. Nevertheless, the interviewees had difficulties to get a job. A third of the respondents had obtained a new education in Finland, usually at the lower level of education than their requisites were. The most popular forms were vocational secondary education or a polytechnic degree. A third told they had been studying for the whole time of their stay in Finland.

Expectations and Objectives. New comers have many reasons to change the country. The subjects of this study indicated that they came to Finland for (a) humanitarian reasons because staying in home countries was dangerous; (b) reunifying the family; (c) searching good education and a safe country for their children; and (d) so called Finnish returnees (e.g. Ingrians). The most often mentions expectation of staying in Finland was to get a job and wellbeing. One of the most important objectives

was to learn Finnish language because it was considered most important in progression in workforce. The following citations come from three interviewees:

> I wanted to learn Finnish language. Although first I didn't speak the language, I had skilled hands. [a highly respected artist with a prestigious Arts degree in the country of origin, recently an entrepreneur in Finland]

> First I try to go to a research laboratory, but it's difficult, because there are no vacancies but a long line and, well, I had versatile experience and education from my past, I've had only internships in Finland, no jobs ... I don't understand what mistakes I have made as I can't get a job. I want to have a job. [a physicist with considerable work experience in the country of origin, unemployed for 10 years in Finland]

> I'm not afraid of any work. I know how to work... Highly educated people can always get a job in the cleaning branch [a woman with MA in economics from the country of origin]

INTERPRETATIONS FROM THEORIES OF ADULT LEARNING AND CAREER DEVELOPMENT

Recognition of Competence and Employment. The feedback and recognition can be received from employers, co-employees, customers and oneself. A male interviewee indicated: "Recognition depends on me. I do not feel that that I am clamped. I want to grow and I can develop". This person took a challenge to learn in different social space. A female interviewee reflected recog-

nition of the professional expience: “I can feel that I am professionally recognized. If they give me a new job, it means I am well fulfilled previous job”. As well, one’s expertise can provide feeling of supremacy: “I don't want to brag, but in Finland, I'm probably the best. I'm doing bigger and better than others, with my [ethnic] work ethic and tenacity”. The next person emphasized the customers: “I've received recognition from customers. I have recognized in a customer’s notes”. The following citations provide different experiences:

> Feedback and recognition was received from colleagues with whom I worked in the project. ...Our firm organizes the session once a year, where the chief assesses and talks with each employee. He appreciated my work this year. I was recognized by the chief”. [woman, about 35 years old]

> A customer said, don’t ask her, she doesn’t speak Finnish. If there would be a Frenchman or an American in my place, they would be regarded more highly than us. [MA degree in Economics in the country of origin and 20 years work experience as purchase manager in a company there; in Finland she is shop assistant.]

> Q: You said that you had a higher education degree from your native country. Did you apply for recognition of equivalence to a Finnish degree?
> A: Yes, I did and got it. But because I did not get any job in Finland I started from the very beginning my studies in a Finnish university. I took also in Finland a Master’s degree in philology and also got the language teacher qualification, in other

languages than before ... I tried to find a permanent job as a teacher, now I have already given up. I'm worried about my pension ... it hasn't accumulated much by short-term and freelance jobs. But I've used to get by with little money. [a femal with two MA degrees in philology, 63 years old freelancer]

Before coming to Finland, I studied hydraulic engineering in the university and gained a MA-degree ... I came to Finland 1992. In Finland, I understood that I could not get a job as an engineer. I had the knowledge of engineering and technical education. This was not appreciated in Finland. However, my husband got a job as an engineer. I began to look for a job related to my native language. I ended up to a Finnish-Russian kindergarten. I had to practice for a half-year, then temporarily for one year. I worked for several years as an assistant teacher. I like this work. [a female]

In practice recognition is denied when a person is mistreated, for example, by showing contempt. In the moral and ethical sense, recognition is filtered through complex, intertwined representation structures of different social groups. Dominant core groups, which can be any ethnic groups, form their own hierarchical value systems that determine lower status people as dependent and irrational. The rhetoric of disrespect resides in the self-images of 'the others', the excluded groups and in their mutual relations as well as in the normative speech of 'the real citizens' of the democratic society. Ethnic stereotypes are by no means insignificant, while they are passed on and may bring about even racist behaviours. The employers often refer to their customers' preferences while rejecting a non-native employee.

Rewards and Career Progress. The interviees wanted to get to the workforce in Finland. However, a half of the unemployed immigrants were long-tern unemployed. Yet, they were actively seeking jobs via the employment agency, networks and through their on-the-job training places. Three out of ten had sent either 1-2 or more than 20 job applications. Only four out of ten got a job offer matching their education. Nevertheless, in addition to their high education, many of the respondents were multilingual, as a 40-year woman indicated: "... then they took on my place a girl who is absolutely without any experience. I had experience and languages degrees from two countries". A quarter of them spoke either two or four languages, while as many as 44% spoke three languages. Many immigrants take any job they receive rather than lean to social security payments. An immigrant who has lived in Finland for about a decade and has experience of a few practice and short work periods, expresses the same idea as follows:

> There are always opportunities for voluntary work, when you've got some skills in music and other things... There are always unpaid jobs to do. Now I'm no longer going for a gig that easily, if they don't pay me ... We immigrants do not ask for much; we get along with little. We can't set that high standard of living to ourselves as the Finns... and you have to be cautious that your appetite won't grow with what it feeds on. [a musician, male]

The interviewee had faced and resolved some conflicts regarding what they expected. His experiences were also related to tensions within the system. According to Fraser (1997), material

resources creates social justice. Recognition and redistribution are equally important and mutually complementary basic elements. Immigrants not only experience higher levels of unemployment, but they have a lower level of income and particularly those from outside of the EU have a significantly increased risk of poverty or social exclusion (European Uninion, 2017).

> Despite my external success I do not feel the recognition of my services ... In my business card says 'Project Engineer'. I am a member of the union of engineers. That is, they recognize my level engineer externally. I can not tell the full recognition. I have not had a career in the last 8 years...". [a man, about 50 years old]

> I now have state of chronic exhaustation. I must at all times. My life in Finland has been 17 years for searching work, work, work ... to concentrate on the work, to search the job, to keep the job ... My private life is destroyed. [a woman, about 45 years old]

The employment rate among third country nationals is 10% lower than that of the total population. When employed, migrants are much more likely to be employed in jobs where skill requirements are lower than their educational attainment and/or their professional qualifications (Eurostat, 2011). Immigrants face severe discrimination in the labour market, because they are less likely to be hired, even where their qualifications are similar to non-migrants (Huddleston, Niessen & Dag Tjaden, 2013). Discounting competence (or deskilling) particularly affects migrant women who, according to the International

Organisation for Migration (IOM) face double disadvantage, with those from visible minorities being triply disadvantaged (IOM, 2012). Immigrant women from third countries are at greater risk of unemployment than third country migrant men, EU migrants and native born women. Highly educated migrant women born outside of the EU are twice as likely to be employed in low skilled jobs as EU born and native born women with the same level of education (IOM, 2012).

> Municipality has made courses for foreign-speaking entrepreneurs... But we are not informed... It is such a disrespect for us. It was necessary to inform the entrepreneurs who are willing to take risks, ready to move something. [a man, about 55 years old]

Many immigrants have to be flexible and change their career plans based on availability of any job. Empty promises are given to individuals at a collective level. Persons set their own goals and aspirations on the basis of the given promises which will never reach them because of individual, structural and institutional obstacles. In particular, for immigrants' children born and grown in Finland, who consider themselves Finns, this kind of gap between aspirations and reality may drive them into the vicious circle of marginalization and social exclusion. Bowden and Doughney (2010) speak about 'aspiration gap'. Komisarof (2009) uses the term 'misguided optimism' in conjunction with acculturation strategies. He analyzes the ambivalent requirements of long-term acculturation and the performance of organizations. On the other hand, the native population lacks the experience of what immigrants have to

face, and what it means for them to live and adapt to the life in the new home country. On the other hand, immigrants learn only gradually to meet the challenges that the acculturation process poses them. Komisarof (2009) speaks about psychological acculturation with reference to learning and changes in individuals' values, attitudes, behavior, and identity. These changes are associated with complex behavioral expectations the original population sets for out-groups and with their implications, i.e. who are expected to become members of the in-group in certain institutional contexts.

As regards changes in the respondents' career plans, the most important reasons had to do with immigrants' poor employment prospects, trust on own skills and capabilities, and Finnish language proficiency. About a half of the respondents considered that they can influence very little the future prospects of their careers. The other half believed that they could influence it. For a third, plans related to finding a job were still unclear, and similar distribution applied to plans for further studies. Three out of ten found it possible to establish a company of their own so as to employ themselves, while most had not even considered it.

4. CONCLUSIONS

Immigrants and their descendants make up a considerable share of the overall population in many EU countries, including Finland, yet more in the future. Because educational level and occupational placement have proved crucial factors in the integration of immigrants to the society of their new home country, their position in the labor market is a central topic in public and

political debate and therefore also a target of academic research. Many earlier studies have shown that migrants coming from outside Europe and also their descendants are treated unequally as regards employment. Migrants' ambition is not enough to progress. The interviewees had little influence over their career progress, and accepted the best of the available jobs. Professional advancement is very slow and interviewees need to show determination and perseverance. There seems to be a lack of understanding of the qualifications and work experiences migrants gained in their home country. In addition, unless employers recognize well-educated migrants' potential, give them opportunities to excel, and actively support their career progress through professional development, many well-educated igrants will continue working in low-skilled and low-paid jobs.

Guidance service sector has brought awareness and assistance to new migrants who are in need of career advise and finding appropriate work at both European and national levels. Lifelong Guidance refers to a range of activities that enable citizens of ethnic groups, any age, and at any point in their lives, to identify their capacities, competences and interests. These services give support on making meaningful educational, training and occupational decisions and on managing individual life paths in education, work and careers (European Council, 2008; OKM, 2016; OPM, 2009). Participation in guidance activities can help the immigrants reflect on what they have learned in light of the competence demand in the labour market and thus support more successful transitions to the host country labour market. A wider approach includes the promotion of lifelong career management skills, which are required by persons to manage the complex transitions in workforce and learning new compe-

tences. Immigrants' career pathways are not linear which partly make their employability complicated. Therefore, both employers and new comers have to learn career management skills in order to promote social equity and inclusion in workforce.

5.DISCUSSION

The study has examined the recognition and placement of persons with including challenges of multiple levels of social, educational and personal factors. At macro level, recognition refers to the reactions of the multi-ethnic society to immigrants' existence and competence. Equal recognition is founded on awareness of cultural diversity and on intercultural competence. Yet, mere awareness is not enough but it must be accompanied with practical measures and deeds, where the person is met as a subject and treated equally. For individuals the experience of immigration is often confusing and raising mixed feelings because of the changes in their living and working conditions. At the level of organizations, then again, the recognition of competence and expansive learning are essential for meeting the changing needs of the world of work.

The general canvas against which inequalities come into view tends to be different in each country. Finding a job immediately after studies is rarer but chances improve to some extent as the search time grows longer, especially for lower-ranked shop-floor level jobs. Despite country-specific differences employment in general, a common trend among the countries is the clearly disadvantaged position of immigrants coming from outside the EU when it comes to competition for more prestigious jobs. Because educational level and occupational placement have proved cru-

cial factors in the integration of immigrants to the society of their new home country, their position in the labour market is a central topic in public and political debate and therefore also a target of academic research. Many earlier studies have shown that migrants coming from outside Europe and also their descendants are treated unequally as regards employment. In this respect we can talk about discrimination existing in the societies of EU countries. Social institutions and organizations including individuals involved are challenged by learning intercultural competence to stop ethnic inequality that is transferred from one generation to another, especially for immigrants with non-European appearance and cultures.

The paper's significance can be summarised in two points, which will be of equal interest and value to academics and European and national policy-makers. First, it contributes to the limited number of existing literature on long-term employment, career prospects, salaries, recruitment processes and successes/failures of migrants who have taken up employment in different national contexts. Second, the paper points to employers' lack of knowledge, understanding and acknowledgment of foreign workers' knowledge, skills and competencies gained in their home (and other) countries. Migrant workers often work in lower-skilled jobs than their highest qualifications would suggest. Self-satisfaction and self-fulfillment increases productivity hence contributes to individual prosperity and economic growth. Therefore, potentially the host countries may loose out on economic gains these migrants could generate through appropriate employment.

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Changing Patterns of Transition to VET and from VET to Higher Education: The On-Going Finnish VET Reform

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Abstract: Since the 1990s participation in the Finnish vocational education and training (VET) increased by 10%, i.e. it became more attractive choice for young and altogether 42% of them chose it as their post-compulsory education by the fist decade of millennium. Thus Finnish VET seemed to be a success story in contrast to many other European countries. At present the Finnish VET is going through extensive multi-level reform efforts. The reform aims not only to change national qualification requirements, but also legislation, administration and regulation. The reformed model of VET should be implemented in 2018. At the same time the funding for VET education providers has been at stake due to recession since 2008.

The aim of this mainly descriptive paper is to discuss the on-going reform's possible effects on progress of studies and patterns of transitions in Finnish VET (and from VET to HE), as well as to discuss the reform initiatives and effects of societal context for outcomes of the reform. In accordance, the paper explores transitions and compares how VET entrants of the year

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2012 have progressed by 2015 compared to earlier cohort who studied in 2004–2007 in order to picture the situation before reform. The effects of the reform are discussed on broad terms utilising the approach of institutionalisation theory.

Keywords: vocational education and training, transitions, higher education, reform.

1. INTRODUCTION: THE PRESENT CONDITIONS OF FINNISH VET REFORM IN 2015–2018

The present Finnish government has set a goal to renew all vocational education and training (VET). The reform concerns youth, adult and specialist vocational education (targeted for those who have already completed initial VET qualifications). In addition, the reform concerns funding, administration, regulation, qualification structure, models for organizing education and providers of education (Prime Minister's Office [Valtioneuvoston kanslia], 2015; Ministry of education and Culture, 2016). Since, in Finland, VET is mostly funded by the state, this means in practice that a thoroughgoing multi-level change is targeted (see Rauhala, 2013; Stenström & Virolainen, 2014a, p.10). The new, reformed model of VET should be in its place and adopted in 2018.

This reform of initial VET education is one of the so-called spear-head initiatives that standing Government has set for the

target area "Competences and education"[34] (Prime Minister's Office [Valtioneuvoston kanslia] 2015). The aim is to "renew VET in order to make it competence-based and client-oriented and increase its efficiency. In addition, the amount of on-the-job learning will be increased and access to individual learning pathways enhanced. Regulations and overlapping education will be reduced "(Prime Minister's Office [Valtioneuvoston kanslia] 2015, p.13).

The on-going Finnish VET reform is structured by three main factors. *First*, how new national basis for vocational qualification (in the following alternatively referred to as curriculum reform, or qualification requirements) will be adopted on the level of education providers (educational institutions) regionally and locally. *Second,* how proposal for new legislation for IVET and adult VET (combined) will be addressed in parliament's discussions, and if it will be eventually approved as such or in a modified form. *Third,* the outcomes of the reform depend on how funding for VET effects implementation of the reform on institutional level, including both the renewed curriculum and new legislation. In the following I describe these aspects and their background in more detail, one by one.

34 Altogether, the target area "Competences and education" consists of six initiatives: New learning environments and digital materials for compulsory education; VET reform; Fast transitions to the world of work; Better access to arts and culture; HE institutions and employers enhanced collaboration for commercializing innovations; and reform of Youth guarantee. The Governments other target areas on the side of "Competences and Education" are Employment and competitiveness; Health and welfare; Biotechnology and clean solutions; Digitalization, experiments and reducing norms (working methods); Reforms and Governments other ground-laying initiatives.

2. REFORM AND REORGANISATION OF THE FINNISH VET AS AN INSTITUTION

The effects of the Finnish VET reform may be analysed with the help of institutionalisation theory. In order to get a deeper understanding of the reforms'effects I draw on a classic of institutionalization theory, Scott (1995). While more novel approaches to study education system's institutionalization do exist, the classic approach enables sufficient, robust recognition of the reform's major dimensions and its depth (c.f. Busemeyer, 2015; Streeck & Thelen, 2005; Mahoney & Thelen, 2010).

According to Scott (1995) institutions are constituted in principal by three pillars, which support and create continuation for institutions. The three pillars are the regulative, normative and cognitive pillar of an institution. Each of these pillars has cultural aspects, social constructions of its own and becomes represented in everyday routines in different ways. The regulative aspects of institutions become culturally evident in Laws and Acts. The laws and acts give legitimacy to power structures and state bureaucracy and they are reflected in the regular ways of taking care about things, when proceeding with organisation's actions. The normative aspects of an institutions'culture are reflected in actors'values and expectations. The norms are adopted by networks of experts who are officially acknowledged and in power to fullfill the duties given to them by their position in the organisation. The routines are played out in the uniform ways which the actors conduct their duties. The cognitive aspects of an institution are represented in the categories, knowledge and interpretation of an organisation's actions and their meanings. In social structures the cognitive aspects of an

institution appear as a resource for identification. The cognitive aspects of an institution create continuity for it, when categories are generalised and they are taken as a resource for understanding the meaning of the organisation and its actions. The cognitive aspects of an organisation are materialized through action plans, and manuscripts, which have been produced for the organisation's actors. (Scott, 1995)

The multi-level nature of the Finnish VET reform is apparent in how it concerns all three pillars of the institution (VET education system): Laws are renewed (regulative pillar), norms are changed when curriculum are rewritten (normative pillar) and also the cognitive understanding of the meaning of VET is redefined, when curriculum are recategorised as more competence oriented (cognitive pillar). In the following the three main factors of the reform (see section 1) are discussed, with respect to how they change the institutionalisation of VET and its regulative, normative and cognitive pillars in Finland.

3. NEW NATIONAL BASIS FOR VET CURRICULUM ADOPTED IN 2016

3.1 NATIONAL BASIS FOR QUALIFICATIONS

In Finland, National Board of Education is the administrative body which takes care of preparing the national guidelines for qualifications, i.e. national basis for vocational curriculum (qualification requirements). Individual education providers follow these guidelines as a basis for their own curriculum, which they prepare on institutional level to guide their teaching and learning. The national qualification requirements have been renewed in 2016 toward a more competence based approach.

In general, the national basis for curriculum is prepared for each individual VET qualification in collaboration with tripartite advisory bodies, which are The National Education and Training Committees. They are appointed by the Ministry of Education and Culture to support contacts between education and the world of work nationally (see National Board of Education, 2010; Stenström & Virolainen, 2014a, p. 10).

The curriculum reform adopted in 2016 can be seen as a continuation of ongoing development of national qualification requirements for VET but also as a break to previous development of VET qualifications in some respects. In the following, it is first explained, what are the continuing characteristics in the curriculum reform 2016.

Officials from National Board of Education have pointed out that working life-orientation and competence-based approach have been targeted already for twenty years in Finnish VET (Kärki, 2014). When the national basis for curriculum was renewed in 1993–94, the individual study subjects and modules were replaced in the national basis for qualifications. Curricula were to be defined starting from competence areas (taken from the world of work), related goals and assessment criteria (Kärki, 2014). It meant a shift from subject- and science-based, scholarly division of curriculum content to hours and classes toward organization of vocational learning on the basis of working life activities.

On the side of the reformed upper secondary VET, a system for competence based qualifications was created, targeted to adults in the 1990s. All Finnish VET qualifications (i.e. upper secondary, further and specialist vocational qualifications) have been available also as competence based qualifications since then

(see Stenström & Virolainen, 2014a, p. 19). There has been a shift in the presentation of the national qualification requirements though; while national basis for qualifications (national requirements) were provided as separate booklets for adult and youth education by National Board of Education in 1990s, they are now presented as one united whole to be used as a basis for both youth and adult initial vocational qualifications and competence based qualifications (Nylund & Virolainen, 2017).

The change toward competence-based approach in the national qualification requirements has meant a shift in teachers' role. This shift from subject-based division of curriculum contents toward competence based approach has been given following reasons (Kärki, 2014, p. 7):

- demand for increased working life orientation and sharing a common language between the world of work and educational institutions in the curriculum goals;
- demand to express both to students and to the world of work what students should be able to complete after finishing their vocational qualifications;
- demand to create a clear basis for assessment of learning outcomes;
- demand to increase efficiency of the education system and improve quality of education underlining the importance of learning outcomes;
- need to shift the focus of learning contents to learning outcomes, and what student is actually able to do after completed qualification;
- need to shift from teacher centered approach to learning centered approach;

- need to enhance student orientation and to bring students as subjects of learning and assessment procedures- emphasis on socio-constructive approach to learning;
- increased variance of learning environments, increase of learning at work and learning at other learning environments (than school classes);
- increased meaning of accreditation of prior learning; and
- move away from classes, lessons and contents specified in advance toward acknowledging students' existing competences as a starting point for the accreditation of prior learning, and certifying competences.

The reasons given for the curriculum reform seem to emphasize needs of adult education while they underline accreditation of prior learning and acknowledgement of various learning environments as places for adopting competences. The increased emphasis for adult learning is probably justified by the changes at the world of work and accelerating speed of change, which has increased demand for adult learning and provision of adult education.

This shift which pertains Law and Acts of Finnish VET, also concerns the cognitive categories which define the context where law on VET is applied. The speed of change at the labour market seems to justify an emphasis on adults'needs in the new law which also regulates youth education.

The role of general subjects which has been very important for young VET graduates' eligibility to HE is somewhat weakened in the new national qualification requirements adopted since 2016 in comparison to VET requirements in the 1990s. There are less, common, general subjects defined and demanded in the national basis for curriculum (qualification requirements),

but student may choose more of them (than demanded in the minimum) based on their individual study goals and learning pathways (Nylund and Virolainen, 2017). More specifically the amount of general subjects has been reduced from around one fourth (¼) of curriculum to around one fifth (1/5) of curriculum since the 1990s (Nylund & Virolainen, 2017). At the same time, individual progress and individual study plans are given a special priority to compensate for this shift in the reform. Their fulfillment is dependent on education provider's resources and funding in two ways, at least. First, it will be seen if students can really make individual study plans based on their own, individual aspirations and will they receive enough guidance for that. Second, is learning and teaching organized in a way that allows completion of individual study plans enabling progress to higher education. Of course, these two aspects depend on one another on the level of individual education providers, i.e. VET schools regionally. The fulfillment of individual study plans is dependent on how individual VET providers utilize their resources (funding) to organize guidance to students and what kind of values (norms) they adopt in interpreting this regulative side of their work.

The shift in the definition of national basis for qualifications is related to more general European changes in curriculum frameworks like described in the Nord-VET report (Virolainen & Stenström, 2015, p.11–12). Even though there are some major characteristics in the reform which raise concern about young VET graduates' abilities to proceed toward HE in future, the way how Finnish competence-based approach defines curriculum aims is still in many ways different from British outcomes based approach (NVQs). The differences depend not least on

Finnish long, school based tradition of organizing VET but they are also due to traditions of vocational teacher education, funding schemes (state funded VET) and commitment to equal education in educational policy. The British VET and its outcomes based approach has been critiqued for instrumentalism, lack of flexibility and anti-educationalism. Therefor it does not seem to be a very attractive example of organizing VET through outcomes-based model (e.g. Avis, 2012; Clegg & Ashworth, 2004; Raggatt & Williams, 1999; Wolf, 1995, 2011).

3.2 CHANGE OF QUALIFICATION STRUCTURE

In addition to the renewal of each and every national qualification requirement and thus VET qualification's contents, which are specific to the fields of production and particular industries, and changes in their activities, *the whole qualification structure* (number of educational fields, their qualifications and their relations to further and specialist qualifications) has been reformed from time to time in order to reflect changes in the world of work, national economy and goals for educational policy (see Stenström & Virolainen, 2016). Also the latest, on-going-reform 2015-2018 has an effect on the qualification structure. Accordingly, the reform also shatters the cognitive pillars of the Finnish VET as an institution.

Still the change is not quite as dramatic, as it may sound, since ongoing VET reform has been preceded by national projects which focused on developing qualification structure, so called TUTKE-projects (Ministry of Education and Culture 2010 a, b & Haltia & al., 2010). The needs for renewing VET have been to some extent described already in these project reports. Changes

that are introduced to the whole of the qualification structure in the reform are reflected in the relations of youth and adult education, specialist vocational qualifications and number of individual specifications. The official aim is to reduce the number of specifications from 351 to 164 (Ministry of Education, 2017a). This extent of the change in number of qualifications may however be somewhat misleading since it includes also further and specialist qualifications (c.f. Stenström & Virolainen, 2016). However, this change in the categorization of VET is thoroughgoing, as it restructures the competences promoted, provided and delivered by VET education system.

4. NEW LEGISLATION FOR IVET AND ADULT VET

In Finland government specifies education policies and its regulations (i.e. laws, decrees and acts). The present legislation guiding organization of initial VET and adult VET was given in 1998 (Law on initial vocational education and training 630/1998; Law on adults' vocational education and training 631/1998). The Law for initial VET adopted then has been modified and changed several times. This has taken place on several occasions to some extent, for example in 2011, and in 2014 (Law on changing the law on vocational education and training 951/2011; 787/2014). Since the present legal framework was adopted in 1998 and the law has been amended partially every now and then, the law text as such has become somewhat fragmented due the amendments. Also the Laws for vocational youth education and adult education have been separate entities earlier (Law on initial vocational education and training 630/1998; Law on adults' voca-

tional education and training 631/1998). The government seeks to cut costs of education by reorganizing youth and adult education and their administration altogether to be at least partially and more and more organized by the same institutions. The change of law for VET is seen also as a prerequisite for this reorganisation.

The proposal for new legislation suggests that all VET students would have individual study plans, based on their previous competences (Government's proposal for parliament for the new law on Vocational education and training 2016). Accordingly, it seems that the goal is that students would only study those parts of qualifications which they do not have enough competences for in order to pass skills demonstrations (in the minimum, criteria given in national qualification requirements). Assessment of students' learning would be based on skills demonstrations and become independent from where and how their competences have been achieved. The aim is that skills demonstrations would take place in authentic work life situations mostly (Ministry of Education, 2017b). The education providers should organize provision of education and guide students in making their individual study plans, so that it is possible to take advantage of a variety of learning environments (at school and on-the-job) and pedagogical approaches.

In particular, the replacement of on-the-job learning with "education contracts" and new assessment procedures in the proposal for legislation, have raised public discussion. For example, the aim is that the existing model of on-the job learning as part of the vocational qualifications (minimum around half a year in three years qualification at present) would be replaced by so called "educational contract" [koulutussopimus in Finnish].

According to the new "educational contract" model, students would not have contract of employment with the employer, employer would not pay the student and the employer would not receive compensation for the guidance they have given students (Governements proposal, 2016). The learning within "educational contract" could be combined with other types of learning in different learning environments.

The shift toward "educational contract" model would not necessarily make much change in some educational fields where compensations for employers have been unknown already and work contracts after on-the-job learning periods are rare, but the law has been criticized to be too inaccurate. The problem brought up by various interest groups is that in the proposal it is not clear enough how educational contract for apprenticeship training and VET qualifications would differ. The new (proposed) law does not define a minimum or maximum amount for learning at work organized within "educational contract" (Liiten, 2017). The policy aim is that amount of learning at work in VET qualifications would be increased and might be continued with apprenticeship training.

Also the change of assessment, which has been proposed has been speculated. According to proposal for new law, assesment is expected to be taking place in authentic working life situations. The real opportunities for this has been questioned: is the world of work ready to take students in for assessment in authentic working life situations for parts or wholes of qualifications to the degree and amount of students that exists. In the existing model for skills demonstration, it has only been possible to organise skills demonstrations at the workplace partly. The amount of skills demonstrations organised at the workplace

has depended on the field, on the region and the module in question. In the national assessments of qualifications concerning Vocational Qualification in Business Information Technology and Vocational Qualification in Vehicle Technology it was found that slightly more than half of skills demonstrations were completed at the workplace and participated by a representative of employers (Ruuskanen & Kilpeläinen, 2016; Kilpeläinen, 2016).The officials from the Ministry of Education and Culture have responded to the criticism concerning enhanced workplace learning that it is not the aim of the law proposal to increase on-the-job learning radically, but rather to allow more flexibility (Liiten, 2017).

In addition to change in the participative bodies roles with respect to VET the reform also suggests changes in the regulative bodies as such. The proposal for legislation suggests that existing collaborative bodies between educational institutions and the world of work would be reorganized, i.e. existing multilevel system for Education and Training committees and Qualifications committees would be decreased and to some extent replaced by working life committees and project work, like forecasts of labour market needs (Ministry of education and Culture, 2016, p. 142).

5. FUNDING OF VET IN FINLAND

Finnish national economy has not recovered from global economic crisis and recession which hit the national economy in 2008 at the same pace as other European countries (OECD 2016). For the Finnish state economy, the decline of the electronics, paper industries and the Russian recession have been

in particular problematic, since there has been traditionally a lot of export to neighboring Russia. In Finland, education is funded mostly by state and free (i.e. no tuitions, free or subsidized meals, supported housing and travelling for students). When Finnish state has been looking for ways to reduce budgets, educational sector has been one loser. While the beginning of 2000s was relatively favourable to all educational sectors considering the development of resources, and public funding increased until 2012, the growth in VET budgets was mostly a result of rising number of students (Rauhala, 2013; see also Appendix Table 1, adopted from Stenström & Virolainen, 2014 p. 13). When the Finnish Government planned to initiate funding reforms already a couple of years ago, it was expected that funding for all educational sectors would fall (Rauhala, 2014).

The Finnish Association for the Development of Vocational Education and Training (Ammattiosaamisen kehittämisyhdistys AMKE ry in Finnish) has calculated that funding for VET sector has been cut by 17% since 2012. The biggest targeted decrease in annual VET funding amounts to 190 000 000€, which is the amount to be saved in the year 2017. The head of the Association (AMKE) has stated that this equals to more than 10% of state-based funding for the 2/3 of education providers in the sector (Ammattiosaamisen kehittämisyhdistys 2017a). The education providers have prepared themselves to these decreases in budgets by firing vocational teachers. The teacher union OAJ (The voice of teachers, in English) has reported that altogether 648 teachers have been fired from vocational institutions due to the budget cuts in 2016 and in 2017, and altogether 102 vocational institutions have completed

employee cooperation negotiations in order to find ways to meet the decreased budgets (Nurmi, 2017). While the amount of vocational institutions was 120 in total in 2013 it is clear that the effect on VET sector has been remarkable (Stenström & Virolainen 2014b, Appendix Table 2).

The teachers' union suggested in its feedback to the law proposal, for example, that a student/teacher ratio and a student/guidance counsellor ratio should be settled (Opetusalan ammattijärjestö /The Voice of Teachers, 2016). According to the Association for the Development of Vocational Education and Training, the interest of young to apply for VET studies has decreased in recent years. The total amount of young applying for post-compulsory education in VET was 39700 this spring, which was 3500 less than last year (see Table 3 to compare to the size of age cohort). Altogether 43600 entrant's study place were available in VET, and thus all of them did not become fullfilled. In parallel, the number of students who applied to general upper secondary schools as their primary option was 33750 in 2017 (Ammattiosaamisen kehittämisyhdistys, 2017b). The long-term, effects of the reform on the attractivity of Finnish VET remain to be seen in the 2020s.

The parties in opposition in the Parliament presented an interpolation to the Government on the funding of VET on 15. 3. 2016. According to what was reported in the news, the Minister of Education, Ms. Sanni Grahn-Laasonen, responded to the opposition for example that there are enough study places reserved for 76% of each age cohort in the VET sector (Liiten, 2017b).

6. HOW WILL REFORM CHANGE PATTERNS OF STUDY PROGRESS AND TRANSITIONS TO HIGHER EDUCATION?

The ongoing VET reform may change patterns of transition in several ways. The official views of policy-makers and realized outcomes of the reform may be somewhat different, but remain to be seen eventually in the 2020s, after young have graduated from reformed VET qualifications. First, transitions from compulsory education to post-compulsory education are expected to change according to educational policy. The standing goverment has recently set as its explicit goal to increase participation to general upper secondary education (Luukka, 2017). Second, progress of studies should according to official goals become more effective and individualised due to competence-based approach and adoption of personalized study plans in VET. Third, VET students' transitions to higher education are officially expected to continue to be possible. From research perspective it seems important however to hypothesize also that if VET education providers decrease their provision of general studies in VET the transitions to higher education may decrease. The outcome may be similar, if education providers do not have enough resources (i.e. funding, teachers and guidance counsellors) to support planning and fullfillment of individual study plans. Furthermore, it is also possible that the image-loss of VET may contributes to decreased participation in VET eventually.

The national statistics concerning transition patterns from compulsory education to VET and from VET to HE allow describing 1) transitions from post-compulsory education to upper secondary education, and 2) from general upper second-

ary education to further studies, as well as 3) progress of VET studies in 2004-2008 in contrast to 2012-2015. Furthermore, 4) the amount of transitions from VET to HE has been recently studied (Hintsanen & al., 2016). In the following the present situation, and standing, of Finnish VET is described based on this information on study progress.

First of all, the data from Statistics Finland concerning transitions from post-compulsory education to upper secondary education reveals that transition patterns have been quite stable in the period 2005-2014 (Statistics Finland, 2017a). While the share of post-compulsory leavers choosing general upper secondary studies has decreased from 53,3% to 51,6%, the share of young choosing VET has increased from 39,4% to 42,1% during the same period (Statistics Finland, 2017a). At the same time the share of those who have not continued their studies immediately after compulsory education has been around 7,3%-6,3%(Statistics Finland, 2017a).

Second, transitions from general upper secondary education to further education have become more slowly during the same time. While the share of the young general upper secondary graduates who did not continue to studies leading to a qualification or a degree immediately upon their graduation (passing matriculation examination) was 58% in 2005, it had increased to 67% by 2014 (Statistics Finland, 2017b). The increase of slow transitions to HE is probably a combined outcome of changes in student allowances, increased youth and general unemployment and priviliged position of first time applicants defined by HE institutions. Altogether these changes have made it more risky for students to enter any study place instead of the study-place of their primary interest.

Third, the data and comparison on VET students' progress in their studies in 2004-2008 vs. 2012-2015 (see Figure 1 and Figure 2) seems to suggest that completion of VET programmes has become stronger: in 2012-2015 around 5% more VET students graduated from studies in the programme where they started in the first place (compared to earlier group) and there are also more students who have chosen to continue in another programme. These findings seem to suggest that several efforts to increase efficiency and completion of VET studies have somewhat succeeded.

Fourth, the share of applicants with VET background to universities of applied sciences has been among young 27% (in 2013); and adults 44% (in 2013) (Hintsanen & al., 2016). The share of entrants with VET background in the universities of applied sciences has varied from field to field in between 17-80%. In traditional science universities the share of VET graduates has been 0-13% depending on the field. (Hintsanen & al., 2016).

The outcomes of the on-going reform efforts will be seen in the beginning of the 2020s. It seems quite important that outcomes would be compared to the present situation in order to understand the effects of the reform on the whole. The latest developments in educational policy statements concerning efforts to increase participation in general upper secondary education (see Luukka, 2017) suggest, that Finnish upper secondary education as a whole is moving towards the Danish model with more emphasis on provision of general education as a route to HE. Accordingly, it seems that the earlier commitment in Finnish educational policy to promote faster routes from post-compulsory education to employment (via VET) has been somewhat given up or the reform's effects on attractiveness of VET are downplayed.

It would be interesting to compare the effects of the Finnish reform on transitions from VET to HE also between the Nordic

countries in the future. Nordic comparison of VET graduates progress to HE has revealed major differences between Nordic countries with respect to VET graduates' opportunities for progress to HE. While Finland and Sweden enable progress to HE to almost two thirds of VET graduates, the pathways from VET to HE are more complicated in Norway and in Denmark. Also the provision of HE, and the role of traditional science universities vs. more practically oriented university colleges or universities of applied sciences in the education system varies of lot, making progress opportunities from VET to HE quite specific and differing from field to field in each country. The variance between educational fields with respect to progress from VET to HE is the characteristic which is shared by Nordic countries' VET's transition patterns (see also Virolainen & Stenström, 2014; Virolainen & PerssonThunqvist, 2017).

Figure 1.
Progress of studies 2004-2008 (adopted from Stenström & Valkonen, 2012)

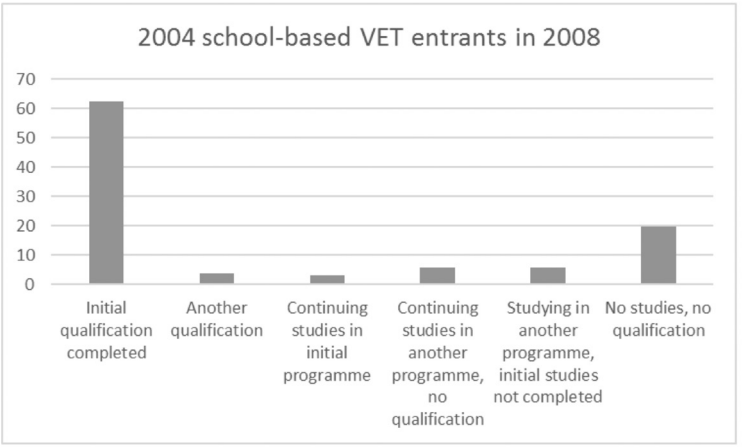
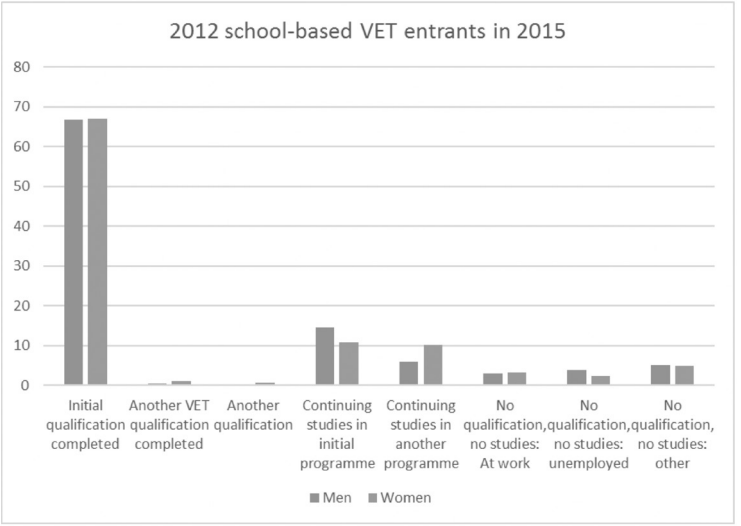


Figure 2.
Progress of studies 2012-2015 (Statistics Finland, 2017c)



7. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The needs for VET reform in Finland and elsewhere in Europe are multifold. They include the accelerating speed of change in the labour market and need to make education system more flexible, dynamic and responsive to these changes. In Finland, in addition, the former, fragmented law texts as such have become an obstacle and they demand rewriting. Extensive background work was completed to prepare the proposal for new VET legislation adopted in Finland in 2017. The reform 2015-2018 proposes institutional change which from the perspective of theories of instutionalization can be understood to infiltrate all pillars of VET as an institution: its regulations, its norms and

how it is understood and categorised. Accordingly, many aspects of the reform have raised societal discussion and controversial opinions. These include the proposal for new legislation, and its suggestion that there would be more flexibility in learning environments, and that employers would in principal take more responsibility on youth education. Also how the organization of student assessment in the future would take place and what would be the role of new suggested, working life committees, seemed to demand refining in the planning.

From the perspective of equality, the Finnish VET's parity of esteem in comparison to general upper secondary education is one major concern in the future. The participation rate in Finnish VET has increased since 1990s in contrast to other Nordic countries (Virolainen & Stenström, 2014). The increased students'interest in VET in Finland has been primarily based on enhanced on-the-job learning and eligibility to higher education, which has made VET a competitive route on the side of general upper secondary education (Stenström & Virolainen, 2016). Even though it is only minority of VET graduates, who continue to HE education, the opportunity to continue studies in HE has been important motivation for students to choose VET. It has enhanced VET's status. The recent announcement by the government to increase participation in general upper secondary education will probably decrease VET graduates' opportunities to participate in HE since they will be in relatively weaker position as entrants to HE and in competition with general upper secondary graduates. Therefore, the following suggested and/or implemented reformative changes in relation to students' ability to continue toward HE raise concern in particular:

- individual study plans and guidance for them
- decrease in the amount of general subjects in the national core curriculum, (national basis for qualifications)
- assessment procedures. All these deserve investigation and follow-up in the future.

Some universities of applied sciences have already introduced entrance examinations for VET graduates, mainly due to changes in their funding formula and their increased interest to get more competent students. The VET education providers' problems in funding create an obstacle for student's individualized study plans: the ability of education providers to offer sufficient teaching, training and guidance for students to plan and complete individual study plans may be compromised due to reduced personnel resources. Accordingly, it seems that a lot of developmental work, for example utilizing digital methods will be needed in this area, to support students' guidance and learning. From research perspective the on-going reform also suggests a laboratory for institutional change and demand to develop deeper understanding of the multi-level development of education systems in national and international societal context (see Streeck & Thelen 2005; Mahoney & Thelen 2010).

APPENDIX

Table 1.
Current expenditure on regular education system (adopted from Stenström & Virolainen 2014, p. 13).

Type of expenditure	Year					
	1995	2000	2005	2010	2011	2012
	EUR million	EUR million	EUR million	EUR million	EUR million	EUR million
Pre-primary education 1)	..	94	269	312	323	342
Comprehensive school education 2)	2 379	2 734	3 413	4 120	4 231	4 363
Upper secondary general education 2)	429	503	600	695	713	727
Vocational education 3)	1 161	925	1 183	1 614	1 695	1 736
Apprenticeship training	32	96	132	177	170	171
Polytechnic education 3)	145	525	704	896	921	928
University education and research 4)	945	1 364	1 671	2 162	2 330	2 340
Other education 5)	265	298	361	442	462	478
Administration	143	161	190	242	238	227
Financial aid for students	614	648	732	871	847	837
Total	**6 113**	**7 348**	**9 253**	**11 532**	**11 930**	**12 149**
Current expenditure as a percentage of GDP, %	6.4	5.6	5.9	6.5	6.3	6.3

Table 2.
The change in the numbers of VET institutions (adopted from Stentström & Virolainen 2014b, p. 70)

Ownership[1]	**Vocational institutes**	**Special needs vocational institutes**	**Specialised vocational institutes**	**Vocational adult education centres**
2005				
Private	30	7	37	15
State	0	5	2	0
Municipality	29	0	1	6
Federation of Municipalities	117	1	0	17
County of Åland	6	0	0	0
Total	182	13	40	38
2010				
Private	30	6	32	11
State	2	0	2	0
Municipality	13	0	0	3
Federation of Municipalities	81	0	0	11
County of Åland	6	0	0	0
Total	132	6	34	25
2013				
Private	30	6	32	12
State	2	0	2	0
Municipality	8	0	0	3
Federation of Municipalities	79	0	0	10
County of Åland	1	0	0	0
Total	120	6	34	25

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The Swedish System of VET – A German Perspective

Martin French* & Franz Kaiser

Abstract: In times of megatrends like migration, digitalisation or inclusion vocational education and training (VET) should be seen more and more in a global context. Hereby the internationalisation of VET is both a fact and a challenge also for the Swedish VET system. In the context of the International Handbook of VET as a practically related standard work for comparative VET research in Germany, edited by the Federal Institute for VET Germany (BIBB), the contribution will provide an introductory insight into current structures, scientific data and trends of the Swedish VET system. This view on the current changes of the mainly school-based Swedish VET system will be done from a German perspective of dual VET structures.

To illustrate the structure we use some biographical life cases and analyse further on current important VET indicators in Sweden. Afterwards, we are going to compare those indicators within the EU with focus on Germany. The paper tries to link the requirements and determinants of the Swedish VET system to the social and cultural roots of Swedish educational system in general. Some specifics regarding the Swedish-German VET comparison will be pointed out as well, e.g. permeable paths

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vs. regulated structures, employability vs. occupation, educational programmes vs. occupational programmes or pathways to become a VET teacher or workplace supervisor.

Keywords: Country report, Sweden, VET System, Germany.

1. INTRODUCTION

There are two main goals for national VET system constructions. On the one hand, it is the combination of general and vocational education and training.

Since the new humanism associated with Wilhelm von Humboldt´s reform in Germans Prussia in the 19th century the gap between general education and vocational training and the establishment of separated educational pathways consolidated. Humboldt´s idea to develop all the general knowledge and skills first, especially the skills in language as the main competence that is needed to be an enlightened human and a political engaged citizen (Humboldt 1809), was adapted. The more practical skills, oriented towards the need at the labour market and in specific occupations were discredited as a pathway leading to philistinism instead of the humanistic term 'Bildung'.

On the other hand VET systems have the task to qualify young people for a successful transition from school to work. At the same time, this supplies the economy with skilled employees. A main indicator in comparative studies to measure that aim, are the rates of youth unemployment. The enlargement of tasks in the work life and the individual title to equal and free development of the own capabilities and knowledge describes the challenge for VET systems. At the moment, Sweden is in a situ-

ation of experiments in its VET system called "rolling reforms" to improve the whole system towards that mentioned goals.

The following paper is an extract of a country report of the authors on the Swedish VET system for a German International Handbook of VET, financed by BIBB, the Federal Institute for VET Germany (Grollmann/Frommberger 2006). This standard work for comparative VET research in Germanny with its first edition in 1995 focuses currently on 42 country studies, which concentrate on national vocational education and training as well as educational systems.

After a brief glance on the Swedish culture and the attitude towards life, including the essential facts of the economic situation in Sweden and Germany, follows a description of the Swedish VET system enhanced with data on the different programmes and pathways for young and old. This third chapter deals as well with the qualification of VET teachers and in-company trainers. The following chapter points out some selected specifics regarding the Swedish-German VET comparison. Challenges and innovations in VET in both countries are discussed in the conclusion.

2. FRAMEWORK OF SWEDISH VET

2.1 CULTURE AND SOCIETY

Education systems are strongly linked with the civil society, including social structures (Bourdieu 1973) and political systems. "They are at least partially a cultural reflection of the nation" (Keating et al. 2002, 1). Realising that, a brief look towards the Swedish culture follows.

To understand the Swedish attitude towards life we will pick

up one deep conviction, that shapes the Swedish culture. Since the 1930s and the conference in Saltsjöbaden the Swedish organisation of employees (LO) and the Swedish organisation of the employers (SAF) laid the foundation stone for central collective bargening of the social partners. This was amongst others cultural driven by what the Swedes call "lagom" – a synonym for "just enough" in a sence of equality. It can be described as the sensitive attention to take care that in every case no one gets left behind. This does not mean irresponsibility towards yourself, because the state will care for you anyway; no, in opposite – it causes self-responsibility: First, try to solve the problem by yourself, but if you need help, be sure that the community will take care of you. One example in every day life, which is well known by tourists is the right for public access to camping sites in the nature (allemansrätten) and that everybody can visit cultural treasures without paying an entry, including the gardens of the Swedish royal family for example. Decisions at the workplace should be made as a compromise of everybody who is involved in the consequences. Every voice counts, regardless of hierarchy. In some cases, this can lead to very long meetings (möte) with lots of coffee (fika). Another consequence is a very open society with very few security measures and a high transparency towards income, taxes and decisions.

This creates a kind of community founded by the nation (folkhemmet) and at the same time an open mind for the integration of "strangers", who are willing to live together with the Swedish population in their country. At the same time, family values are very important in Sweden. Children enjoy a high consideration and the hierarchy in work is not as drastic as in other countries.

In the last decades this tradition has begun to change to a more neoliberal kind of thinking and acting, but still "lagom" plays an important role, as we can see in the shape of the educational system in chapter 3 and in the very early engagement towards inclusion in the Swedish society.

2.2 ECONOMY AND EDUCATION

The VET system is theoretically located between the general education and the economic system (Kurtz 2007). Looking at the framework of VET means to look at both directions, and after the short glance at culture we take a look at national economic and basic educational facts, contrasting to those of Germany (table 1). A more detailed description of the educational system and relevant indicators will follow in chapter 3.

Table 1
Basic data Sweden and Germany

Indicator	Sweden	Germany
Area total* (2016)	450,295 km2	357,168 km2
Population* (2016)	9,851,000	82,176,000
Population growth rate**	0.9 % (2013)	0.4 % (2014)
Population density per km2**	21.9 (2015)	226.5 (2014)
Foreign-born population (2015)	22.2 %****	14,1 % *****
Foreign population** (2013)	7.2 %	9.3 %
GDP**	492.6 Billion US$ (2015)	3.879.7 Billion US$ (2014)

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GDP per capita** (2016)	49,490 US$	48,908 US$
GDP expenditure on Research & Development**	3.2 % (2015)	2.8 % (2014)
GDP expenditure on Education* (2015)	6.6 %	4.3 %
Employment rate - age group 20-64* (2016)	81.2 %	78.7 %
Employment rate - age group 15-24** (2016)	44.5 %	45.8 %
Employment rate - age group 55-64** (2016)	75.5 %	68.6 %
Unemployment rate - total labor force**(2016)	7.0 %	4.1 %
Unemployment rate - age group 15-24**	20.3 % (2015)	7.8 % (2014)
Economic structure - share of real value added** (2016) · Agriculture, forestry, fishing · Industry including energy · Construction · Trade, repairs, transport, accommodation, food services · Information, communication · Finance and insurance · Real estate · Professional, scientific, support services · Public administration, defence, education, health, social work · Other services (ISIC Rev.4 R - U)	 1.3 % 19.9 % 6.1 % 17.9 % 5.9 % 4.1 % 8.7 % 11.5 % 21.5 % 3.1 %	 0.6 % 25.7 % 4.8 % 15.7 % 4.9 % 3.9 % 10.9 % 11.2 % 18.3 % 4.0 %
Early leavers from education and training age group 18-24*** (2015)	7.0 %	10.1 %

Tertiary education attainment age group 25-64** (2015)	40. %	28.0 %
Tertiary education attainment age group 30-34*** (2015)	50.2 %	32.3 %
Adult participation in lifelong learning - age group 25-64*** (2015)	29.4 %	8.1 %

Sources: *eurostat; **OECD; ***Education and Training Monitor; ****SCB; *****DESTATIS.

Sweden is a large country in Europe with a small percentage of population. The population density is only about 22 people per km^2. In Germany, it is ten as much, while the European average is about 100. There are about 10 million inhabitants in Sweden and the population growth rate is near 1%, better than the average in European countries. Due to the political decision to welcome refugees and the migration policy in the last years, Sweden has doubled its population with foreign background since 2000. The foreign-born population has grown to nearly 22%, proportional much more than in Germany.

Looking at the GDP per capita we have nearly similar situations in the two countries but the expenditure on education is in Sweden a third higher. This might be an impact of the previous described policy towards equality. Maybe the lower expenditure on education in Germany is caused by the higher population density, that lower costs and, more important, by the German Dual System, that reduces the public investments in VET a lot (DESTATIS 2016; Pfeiffer 2013).

Looking at the labour market, we can find another noticeable difference. Even though we have similar employment rates at

the age from 20 to 64 in both countries, the employment rate at higher ages is marginal higher in Sweden, whereas the youth unemployment rate with about 20% is significant higher. This is one of the main reasons for the changes in the VET system we will explain later.

The analysis of the economic structure with regard to the value of the economic sectors in both countries shows nearly the same characteristics. Only agriculture and fishing shows a higher value in Sweden, while we can see the opposite situation in the sector of industry and energy. This analysis let us expect similar distribution in the VET systems' occupational programmes referred to the economic sectors and branches.

To conclude the description of the selected facts, we can state a considerable greater importance of lifelong learning and participation in the tertiary education in Sweden, which is also linked with permeable education structures to VET.

3. SWEDISH VET SYSTEM

3.1 STRUCTURE

VET as structural part of the Swedish educational and economical system

The Swedish VET system and structures are, as in other countries, linked with and shaped by historical developments. Looking at objectives and significance, the Swedish education in general, but especially VET has "historically oscillated between emphasising the development of generic skills and emphasising the importance of education in skills provision" (Cedefop 2016a, 5).

The importance and the responsibilities of the state but also the linkage of public education authorities with the economy,

and therefore with the labour market, the working life in companies and the delivery of education started to change in the last years. "Issues regarding skills provision, both regionally and nationally, youth unemployment and a fluctuating economy are factors that strongly impact the focus of initiatives, as well as the previous and ongoing VET reforms" (ibid., 5).

Additionally to these siginificant challenges of VET as structural part of the Swedish educational and also economic system, the refugee crisis has a huge impact on changing VET policy and structures from 2015 until today (Skolverket 2016, 2017; Cedefop 2016a, 2016b).

Swedish VET programmes and pathways

In contrast to other dual VET systems like in Germany, the Swedish VET system is school-based or -focused and comprises a hybrid between two different but overlapping educational cultures, the academic and the vocational.The Swedish VET system or structures offer programmes and pathways in the fields of upper secondary education, non-academic and academic tertiary education. In this case, the orientation on permeable structures and individual careers for all education recipients is quite evident. The bulk of vocational education for occupations in industry, commerce and in the state sector is provided by the gymnasieskolan, the upper secondary level of an integrated comprehensive school system.

After finishing the compulsory school, young people have the opportunity to continue their education pathway in the upper secondary school choosing VET programmes or higher education preparatory programmes. Also individual programmes with including specific modules can be chosen. This also means

the combination of contents of traditional VET or academic-oriented programmes as well as special courses like language courses. Regarding students with special needs or without sufficient pass grades, special and strongly individualised introductory programmes are offered, which are focusing an access to the upper secondary level or directly to the labour market. Plenty of VET programmes in the gymnasieskolan can be basically chosen school-based or as an apprenticeship orientation or pathway (lärlingsutbildning). If the VET recipients finally pass the school-based or apprenticeship, they will receive a vocational diploma (Skolverket 2013, 2016, 2017; Cedefop 2014d, 2014e, 2016a, 2016b; Roskilde University 2013; French et al. 2014; French et al. 2016).

Table 2 shows the three Swedish main "education lines" in upper secondary school focusing on (1) VET programmes, (2) academic-oriented programmes and (3) introductory education programmes.

Table 2
Education programmes in upper secondary school (gymnasieskolan)

Yrkesprogram	Högskoleförberedande program	Introduktionsprogram
· Barn- och fritids-programmet (BF) · Bygg- och anläggnings-programmet (BA) · El- och energi-programmet (EE) · Fordons- och transport-programmet (FT) · Handels- och administrations-programmet (HA) · Hantverksprogrammet (HV) · Hotell- och turism-programmet (HT) · Industritekniska programmet (IN) · Naturbruksprogrammet (NB) · Restaurang- och livs-medelsprogrammet (RL) · VVS- och fastighets-programmet (VF) · Vård- och omsorgs-programmet (VO)	· Ekonomiprogrammet (EK) · Estetiska programmet (ES) · Humanistiska program-met (HU) · Naturvetenskaps-programmet (NA) · Samhällsvetenskaps-programmet (SA · Teknikprogrammet (TE)	· Individuellt alternativ (IMIND) · Preparandutbildning (IMPRE) · Programinriktat indivi-duellt val (IMPRO) · Språkintroduktion (IMSPR) · Yrkesintroduktion (IMYRK)

Source: Skolverket 2017.

Additional to the educational pathways in the gymnasieskolan, older students can also go for a an upper secondary vocational diploma in municipal adult education. Regarding the VET target groups of older students, one- or two-year higher VET programmes also offer the possibility to obtain a diploma or an advanced diploma in higher vocational education, the

so-called non-academic tertiary VET (yrkeshögskolan) (Swedish National Agency for Higher Vocational Education 2017).

After sustaining an upper secondary diploma, learners have access to the educational levels of higher vocational education and higher education. In relation to this the VET students also need to pass specific courses or modules, like mathematics, English and Swedish or Swedish as a second language successfully. That concerns the requirements and conditions regarding higher education. In this case, diploma in upper secondary VET programmes enable the students within its scope, or through programme extensions, to study these required modules. As in other European countries like Germany, there are some specific entry requirements for special higher education programmes or higher vocational education.

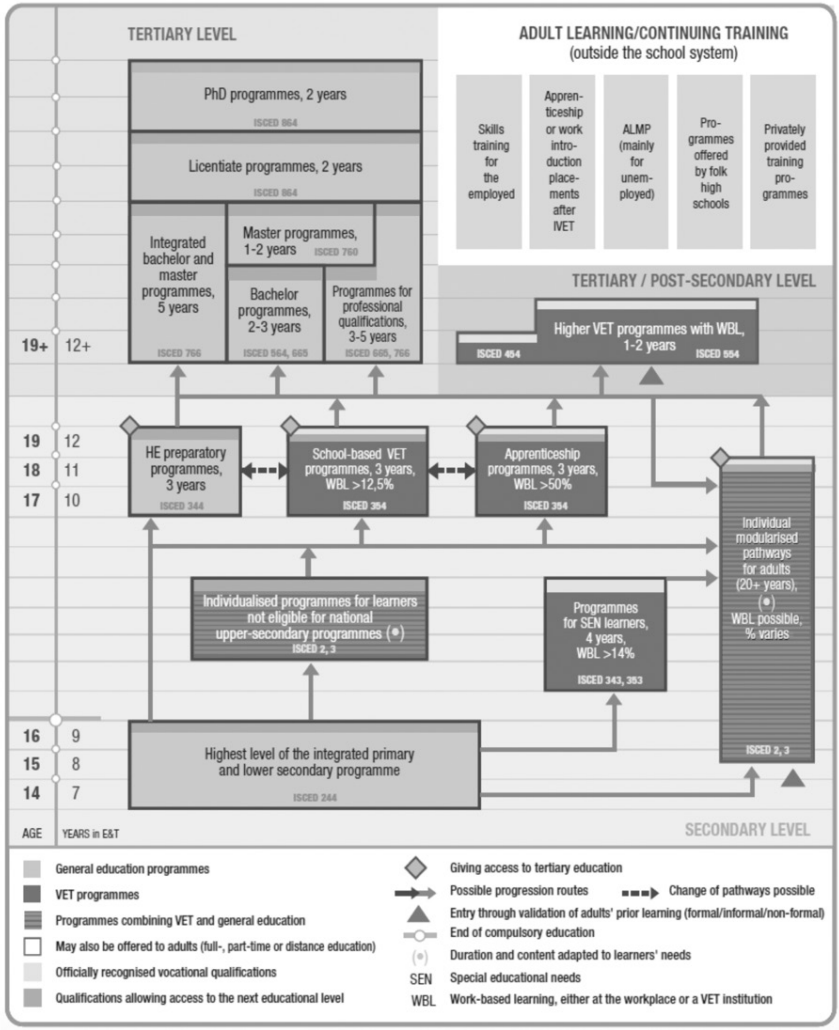
As already described, the high value of lifelong learning and permeability in the Swedish education and therefore also in the VET system, support the consideration of specific needs as well as individual, educational or occupational situations in the Swedish adult education. In this case, the paradigms are once more called "education for all" and "nobody should be left behind". The individuality of education and career pathways is strongly linked with the internalised openness of the Swedish population and the well state-financed opportunities to choose qualification or professionalisation in new or updating occupational fields. Study courses are therefore required in order to access higher vocational education or higher education.

Plenty of studies in the recent years show the huge importance of a linkage of theoretical and practical learning processes in any VET programme. The more school-based path of the Swedish VET system in upper secondary school vocational programmes requires at least 15% work-based training.

The pathways of upper secondary apprenticeship ensure, that more than 50% of the VET processes appear in the companies or other specific workplaces apart from the school. The combination of theoretical and practical learning processes continues in the non-academic higher VET programmes. In this process, at least 25% of the programmes need to be training units at the workplace (Skolverket 2013, 2016, 2017; Cedefop 2016a, 2016b; Roskilde University 2013; French et al. 2014; French et al. 2016).

Figure 1 gives a good impression of the described VET options for younger but also older Swedish students/learners, including the permeable structures and linkages with academic and adult learning programmes.

Figure 1
VET in the Swedish education and training system



Source: Cedefop 2016a, 14.

Because of the great value and the importance of the state as an "organiser" of societal, cultural, educational and economical requirements and developments in Sweden, the legal responsibilities and financing structures are strongly state-oriented and -structured. All levels of VET or VET-related issues (VET programmes in upper secondary schools, adult education and higher VET) are thus state-controlled. In that connection, national and regional responsibilities differentiate. Regional steering committees and therefore regional regulations and documents basically determine upper secondary schools. Municipalities, county councils and the state could be responsible for the legal authority of upper secondary schools. Municipal adult education is regulated by the national government and the Swedish National Agency for Education.

Worldwide we can see a relatively "economisation of education" in many countries. Various studies in the recent years show upcoming challenges regarding this phenomenon. Also Sweden has to deal with an increasing "liberalisation of the VET market". Plenty of private VET service providers have been established in the last years. They started to open independent upper secondary schools with VET programmes, which are partially becoming more popular than state-owned VET institutions. Regarding non-academic higher VET (yrkehögskolan), there are no private VET service providers. Although the municipalities supervise the adult education in VET, they can implement private-offered courses and trainings from VET service providers. The providers need to be approved by the Swedish National Agency for Higher Vocational Education. The Agency also decides about governmental grants for higher VET. The private

VET service providers need to develop an education plan and specific higher VET programmes, that must be interrelated with labour market needs and therefore with the "world of work".

Other private VET service providers offer various non-formal courses or programmes, focusing on contents of initial or continuing VET like private companies and labour market partners. Supplementary education and programmes are offered by folk high schools. The financing of these courses or programmes by fees can be done by enterprises or other "workplace organisations". Additional to this, the provision of public grants for "lifelong learning through VET" is strongly emphasised by the Swedish government. Furthermore, various programmes to promote an innovative and modern Swedish labour market with a focus on employed people, can also be assessed as VET-oriented or as work-based learning. Due to the fact that non-formal and informal learning processes are highly meaningful and recognised by the Swedish society and also have a great importance in the paradigm of a "lifelong Swedish employability", Sweden started to push the formal validation and recognition of non-formal and private sectoral qualifications progressively in the last years. Therefore, non-formal and informal learning processes are progressively assessed in order to be referenced with the Swedish national qualifications framework (Skolverket 2013, 2016, 2017; Cedefop 2016a, 2016b; Roskilde University 2013; French et al. 2014; French et al. 2016).

Typical biographical cases in Swedish VET

In regard to the described various pathways or career options in VET, the following two examples of typical biographical cases in Swedish VET show in a very individual way the education

paradigms of "education for all", "lagom", the importance of lifelong learning and the permeability in the Swedish education and therefore also in the VET system and in VET structures.

Case "Anna" – Employment and qualification in geriatric nursing: 45 years old, two children, working about 20 years in geriatric nursing as unqualified care helper. Left school system after general upper secondary school programme and decided not to study. Growing requirements in the sector opens a chance for her to participate in systematic qualification course in „Yrkesutbildning inom vuxenutbildningen". First, a validation of her competences takes place, than participation only in courses she has knowledge gaps. Time she spends in the courses is work time, not leisure time. Both sides can benefit, the employee and the employer (Andersson 2017).

Case "Omid" – Integration of refugees: 25 years old, 4 years in Sweden, integrated in a family-owned store in Syria, participated in Swedish language courses for immigrants. He is interested in work and economic autonomy, maybe self-employment. At the moment, he is in a kind of apprenticeship training for adults, learning to be a sales man in a big departement store. His current tasks are the logistics of goods, replenishing the shelves. A tutor from the store and a teacher from the education centre help him as learning guides. One day a week he visits the "school" – a private contracted provider – to learn theoretical aspects of the vocation. After finishing the 40-weeks-programme, the aim is to lead him in long-lasting employment at the store where he is qualified in his function (Andersson 2017).

3.2 CURRENT VET STATUS AND TRENDS: DATA AND STATISTICS

After the description of the framework of the Swedish VET system, its structure and its sub-systemic linkages, this section will point out some significant data and statistics that show the current VET status and trends in Sweden. Comparative contextualisations regarding the VET situation in the European Union and especially in Germany will be shown if meaningful. A deeper insight into the similarities and differences in VET between Sweden and Germany as well as their reflection will be done in chapter 4.

The partially low attractiveness of VET in Europe is still a challenge to deal with, although especially dual VET structures are quite successful regarding youth unemployment. In the recent years, also the Swedish authorities recognised this problem and initiated different campaigns and programmes to promote and to communicate the advantages and benefits of VET, including the permeable linkage with the academic education sector. Looking at the share of students (year 1) in upper secondary school programmes from 2011 to 2016 (table 3), it can be stated that the traditional VET programmes (yrkesprogramm) are less attractive, while the academic-oriented programmes (högskoleförberedande program) are rather unchanged. The third programme line "introduktionsprogram" is getting increasingly important. Reasons for this may be the increasing number of Swedish students with special needs and the increasing number of young refugees who need to be integrated into the school programmes.

Analysing the changes regarding the frequency or attractiveness of the specific VET programmes (figure 2), it is obvious

that all of the 12 VET programmes had a lower frequency from 2011 to 2015. The least frequency or attractiveness regarding the dynamic of the last years can be stated for the VET programmes "Hantverk", "Restaurang- och livsmedel"and "Bygg- och anläggning". The most positive dynamics in upper secondary school can be stated for the academic-oriented programmes "Teknik" and "Ekonomi", as well as "Sprakintroduktion" as an introductory programme.

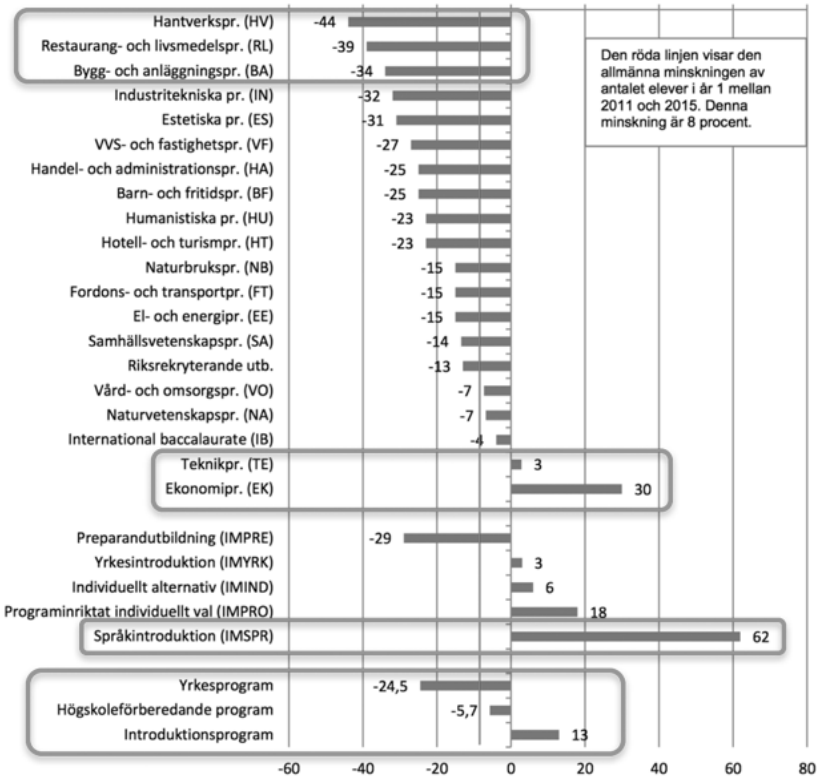
Although the status quo and the dynamic trends regarding the frequency or attractiveness of VET programmes decreased in the last years, the number of students in the various VET programmes is partially still considerably high (figure 3). The share of students in year 1, year 2 and year 3 in upper secondary school programmes in 2015 partially shows also significant differences of the number of VET students between the years. These differences are caused by the reduced or changing attractiveness, we have already mentioned. Other explanations for this phenomenon can be demographical reasons on the one hand and the opportunity to change a programme while being in the upper secondary education level on the other hand.

Table 3
Share of students (year 1) in upper secondary school programmes from 2011 to 2016 (%)

	2011/12	2012/13	2013/14	2014/15	2015/16	Förändring (procentenheter) 2011/12–2015/16
Barn- och fritidsprogrammet (BF)	2,8	2,5	2,6	2,3	2,3	-0,5
Bygg. och anläggningsprogrammet (BA)	4,5	4,1	3,8	3,5	3,2	-1,3
El- och energiprogrammet (EE)	4,3	4,2	4,1	4,1	3,9	-0,4
Fordons- och transportprogrammet (FT)	3,1	3,1	3,1	3,1	2,8	-0,3
Handels- och administrationspr. (HA)	2,5	2,3	2,2	2,3	2,0	-0,5
Hantverksprogrammet (HV)	2,9	2,5	2,2	2,0	1,8	-1,1
Hotell- och turismprogrammet (HT)	1,2	1,1	1,1	1,0	1,0	-0,2
Industritekniska programmet (IN)	1,5	1,6	1,4	1,3	1,1	-0,4
Naturbruksprogrammet (NB)	2,5	2,3	2,3	2,3	2,3	-0,2
Restaurang- och livsmedelspr. (RL)	2,2	2,0	1,9	1,8	1,5	-0,7
VVS- och fastighetsprogrammet (VF)	1,1	1,1	1,0	1,0	0,9	-0,2
Vård- och omsorgsprogrammet (VO)	2,5	2,5	2,7	2,6	2,6	0,1
Riksrekryterande utbildningar	0,3	0,3	0,3	0,3	0,3	0,0
Yrkesprogram totalt	**31,4**	**29,4**	**28,6**	**27,4**	**25,6**	**-5,8**
Ekonomiprogrammet (EK)	7,4	7,9	9,4	10,1	10,5	3,1
Estetiska programmet (ES)	7,6	8,1	6,8	6,3	5,8	-1,8
Humanistiska programmet (HU)	0,9	0,9	0,7	0,7	0,7	-0,2
Naturvetenskapsprogrammet (NA)	11,5	12,3	11,7	11,6	11,5	0,0
Samhällsvetenskapsprogrammet (SA)	15,8	16,7	15,7	15,7	14,8	-1,0
Teknikprogrammet (TE)	6,7	7,1	7,3	7,4	7,5	0,8
International baccalaurate (IB)	0,9	0,9	0,9	1,0	0,9	0,0
Högskoleförberedande program totalt	**50,9**	**52,4**	**52,5**	**52,7**	**51,7**	**0,8**
Individuellt alternativ (IMIND)	4,2	4,7	4,6	4,4	4,3	0,1
Preparandutbildning (IMPRE)	2,1	2,0	1,6	1,6	1,6	-0,5
Programinriktat ind. val (IMPRO)	2,4	2,7	2,5	2,7	3,0	0,6
Språkintroduktion (IMSPR)	5,7	6,1	7,6	8,4	10,9	5,2
Yrkesintroduktion (IMYRK)	2,6	2,7	2,6	2,7	2,8	0,2
Introduktionsprogram totalt	**17,7**	**18,2**	**18,9**	**19,9**	**22,6**	**4,9**
	100	**100**	**100**	**100**	**100**	

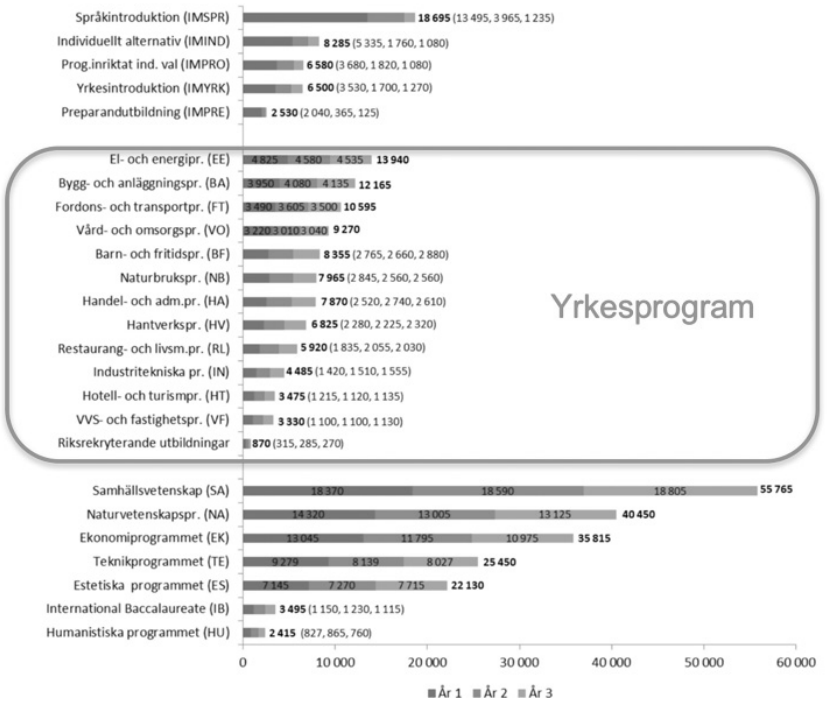
Source: Skolverket 2016, 10.

Figure 2
Percentage change of share of students (year 1) in upper secondary school programmes from 2011 to 2015 (%)



Source: Skolverket 2016, 8.

Figure 3
Share of students in year 1, year 2 and year 3 in upper secondary school programmes 2015



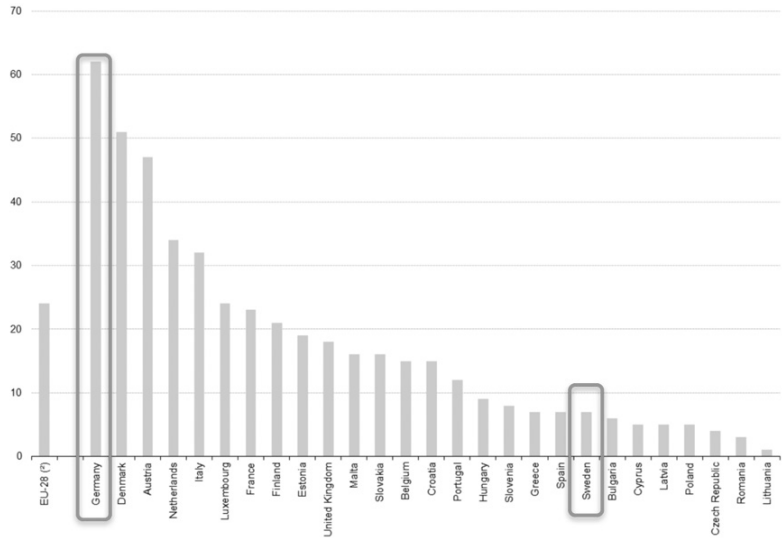
Source: Skolverket 2016, 7.

We have already mentioned the strongly school-based Swedish VET system as well as the importance of work-based learning and its big "renaissance" in Sweden. If we look at figure 4 which shows the proportion of enterprises providing initial vocational training in 2010, we can see a significant difference between Germany with more than 60% and Sweden with less than 10%. In contrast to Germany, the upper secondary schools in Sweden also offer workshops and workplace simulating areas. The prac-

tical skill training in the German dual VET system is operated in the companies with whom the students signed their apprenticeship contract. This is the reason why the VET activities, the infrastructure and the requirements of Swedish upper secondary schools are more similar to German VET service providers (Berufsbildungsdienstleister) than to traditional state-owned German VET schools.

If the objective of a better linkage of the theoretical VET learning processes with the "real world of work" and with current labour market requirements is seriously focused, more companies should be involved into the dual structures of the Swedish VET system.

Figure 4
Proportion of enterprises providing initial vocational training 2010 (%)

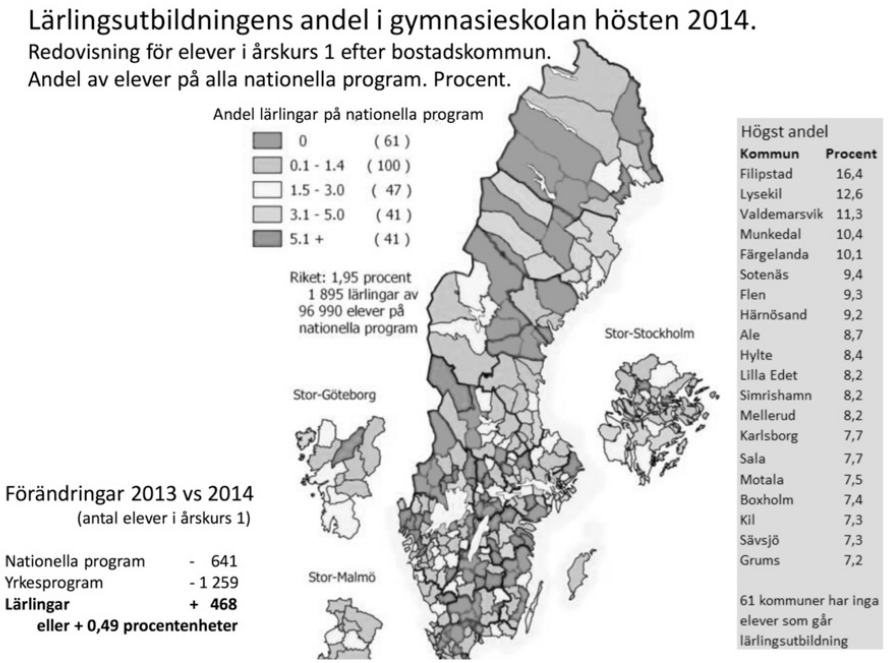


Source: eurostat.

To achieve the goal of the mentioned improvement of work-based learning by increasing the number of involved companies in the VET programmes, the share of the apprenticeship pathway (lärlingsutbildning) in upper secondary school should be higher. Because of the historical background regarding a higher frequency of apprenticeships in former times in Sweden, we could also use the paradigm of a needed "renaissance of apprenticeship structures" in Sweden (Moreno Herrera 2015).

If we take a look on the share of apprenticeship pathway (lärlingsutbildning) in upper secondary school per Swedish region 2014 (figure 5), we can see that the occurence of the apprenticeship pathway is limited, especially in rural areas, while the percentage in some areas next to bigger cities in Sweden is more than 10% which is still a low level. These differences are probably caused by the interdependence of a small- or large-scaled economic structure of those areas and the small or high number of enterprises in these regions.

Figure 5
Share of apprenticeship pathway (lärlingsutbildning) in upper secondary school per Swedish region 2014 (%)



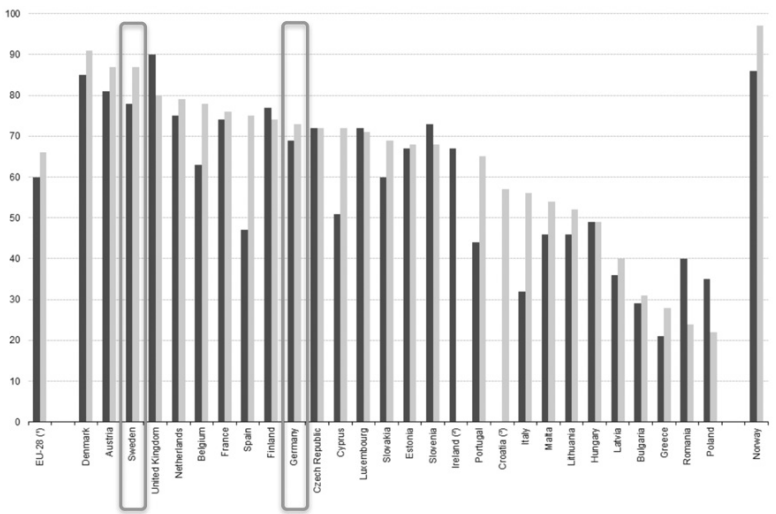
Source: Skolverket 2015.

To finish this section of selected significant data and statistics that show current VET status and trends in Sweden, we would also like to focus briefly on the further or continuing VET. In the specific case of Sweden, that also includes the non-academic higher vocational education. The statistics show that Sweden has one of the highest rates regarding the particpation in continuing vocational training (CVT) (Cedfop 2017a). This is caused by the internalised "professional habitus of lifelong learning", by the wide-ranged state-organised and -promoted financial,

organisational and institutional structures and also by the high value of provided continuing vocational education and training by the companies (figure 6).

In comparison to Germany, Sweden's share of enterprises providing continuing vocational training in 2005 and 2010 was appr. 10% higher. This fact is quite interesting, because it is entirely different regarding to the comparison statistics of enterprises providing initial vocational training, as we mentioned before. It seems obvious that not only the society, the culture or the policy but also the economy take the education paradigms of "education for all", "lagom", the importance of lifelong learning and the permeability in the Swedish education into account.

Figure 6
Share of enterprises providing continuing vocational training, 2005 and 2010 (%)



Source: eurostat.

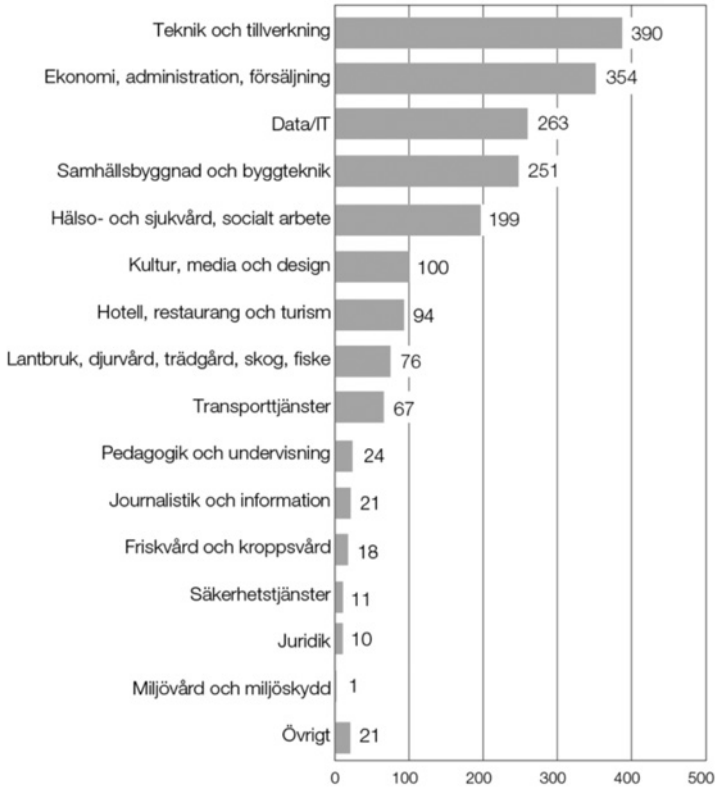
The educational level of non-academic higher vocational education (yrkehögskolan) is a very specific and more and more popular way of lifelong learning in Sweden. Many learners are participating in courses at yrkehögskolan to either update their skills and abilities in a formal certificated way or educate themselves in (totally) new VET programmes, and therefore going totally new career pathways.

As we can see in figure 7, the range of currently offered higher VET programmes at yrkehögskolan is very wide, and it is more or less linked to the VET programmes or courses in the upper secondary school level. This once more supports and points out the permeability of VET in Sweden from a structural point of view. The most offered programmes are "Teknik och tillverkning", "Ekonomi, administration, forsäljning", "Data/IT", "Samhällsbygnad och byggteknik" and "Hälso- och sjukvård, socialt arbete".

If we take a look on the share of graduates in full higher VET programmes at yrkehögskolan by sex (figure 8), it can be stated, that female learners are very much interested and also presented in higher VET programmes dealing with health care, social services, food services, hotel/tourism services, economy/administration or journalism/information services. In contrast, male learners focus on higher VET programmes dealing with technology, IT, construction or transport.

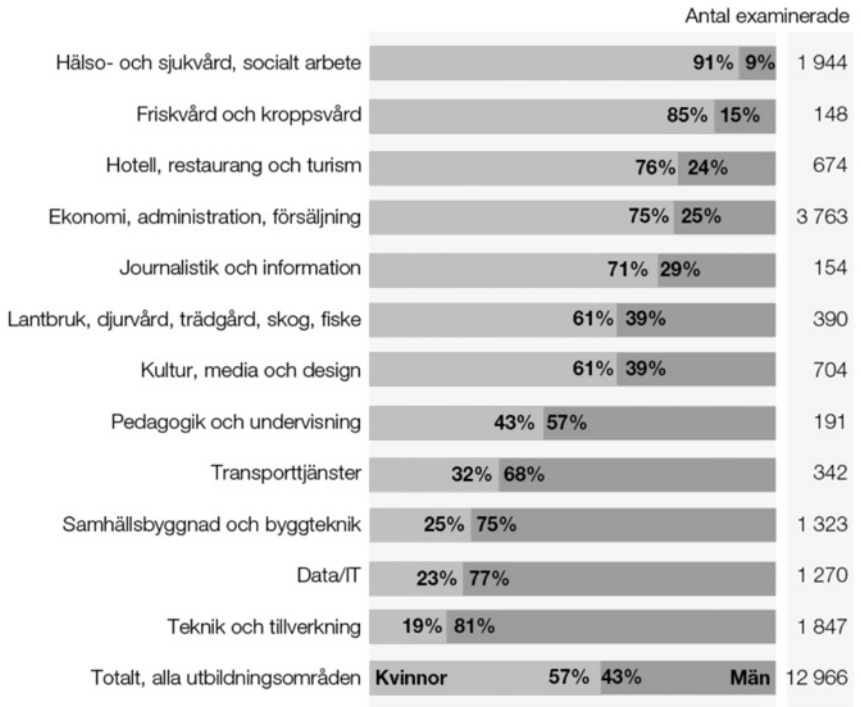
In relation to Germany, where "pedagogical professions" in general education and VET are often dominated by women, the fact that there are more educated male graduates in pedagogical services and supervising than female regarding higher VET programmes in Sweden , is even more interesting.

Figure 7
Current higher VET programmes at yrkehögskolan 2016



Source: Swedish National Agency for Higher Vocational Education 2017, 12.

Figure 8
Share of graduates in full higher VET programmes at yrkehögskolan 2015 by sex



Source: Swedish National Agency for Higher Vocational
2017, 21.

3.3 THE QUALIFICATION OF VET EDUCATORS

Teachers in upper secondary schools

Teacher education and training in Sweden has undergone a transformation over the past few years. One of the first things the country did upon becoming a member of the European Union was to adopt the system of higher education developed during the Bologna Process. However, teacher training in Sweden has not been affected immediately by this process until teacher training courses were adapted in line with the Bologna resolutions in the course of the Swedish reforms beginning in autumn 2011 (Hakala 2012, 196). This entailed the replacement of Sweden's former credit point system with the European Credit Transfer System (ECTS) for performance measurement, whereby one Swedish credit point equates to 1.5 ECTS points. As a result, each academic year of a full-time teacher training course is now equivalent to 60 credit points (Swedish National Agency for Higher Education 2011, 12). In addition, specific trainings for vocational school teachers were not formerly available due to the integration of vocational colleges within secondary schools. This situation was corrected through the 2011 reforms, which were applied in the introduction of specific kindergarten, primary school as well as technical and vocational school teacher qualifications (Hakala 2012, 195; French et al. 2014, 68).

With the reform in 2011, a single general teaching programme or degree was replaced by four specific programmes and education degrees for teaching learners with an additional focus on different age or target groups of (VET) educators in schools. On th one hand, these degrees are focused and applied to teach general subjects in the VET pathways of upper secondary school,

and to teach specific vocational education regarding the occupational fields of yrkesprogram on the other hand.

A person who would like to apply for the vocational teacher programme (yrkeslärarexamen) must be eligible to attend higher education, i.e. to have an upper secondary school diploma and adequate and relevant skills, obtained from a vocation or a degree in the vocational subject from tertiary education. A degree for teaching in vocational education can be obtained at one of 12 Swedish universities by studying for one and a half years in a vocational teacher programme (Cedefop 2016c, 5).

Thus, this education programme is also focused on "VET career changers" like in-company trainers or workplace supervisors and tutors from enterprises, other workplace institutions or private VET service providers. In this case, advanced and relevant vocational knowledge or post-secondary education in the vocational field is a requirement to join the programme. These target groups of VET educators should also ensure a basic eligibility for studies in higher education. As in Germany, plenty of people are already working as VET teachers in schools in Sweden without having a pedagogical degree. These people can minimise the study time to one year at a university college or an university. Regarding the pedagogical learning goals and outcomes, the VET teacher training programme focuses on methodologies in education, on the knowledge how to teach professional and the supervision of the training at the school as well as induction (verksamhetsförlagd utbildning) (Cedefop 2014a, 2016c, 6).

The other degree for upper secondary education is for teaching general subjects which include languages, mathematics and natural science, humanities, social science, physical education, music, dance and art. General subjects are included in all VET

programmes in upper secondary school. Teachers of general subjects have the same education and degree regardless of whether they teach in VET programmes or in higher education preparatory programmes (Cedefop 2016c, 5).

Another requirement to teach VET in state-owned schools is a formal registration by a legal authority to proof the qualification and professionalisation, especially in regard to specific subjects. As the main legal authority, the National Agency for Education is responsible for the determination and decision if the VET teacher requires the necessary qualification, based on the degree of the teacher.

In the recent years, Sweden had to cope with of a lack of qualified VET teachers. Educators in schools who teach vocational subjects are therefore exempted from the registration requirements. In spite of this fact, schools prefer VET teachers with a formal registration (Cedefop 2014a).

In-company trainers and workplace supervisors

When VET students have their practical part at a workplace, a so-called "supervisor" must be appointed. This person is responsible for the communication with the school and the support of the work-based learning processes of the student. In contrast to VET teachers in schools, the workplace supervisors or in-company trainers do not need to have a special vocational educational or pedagogical qualification. Everybody who obtains the needed occupational skills and job experiences as well as the "pedagogical suitability" can be a VET supervisor at the workplaces. From a German perspective, where a formal pedagogical qualification for in-company trainers is established and needed (Ausbildereignungsverordnung) to participate in the German

Dual System, the Swedish qualification structures for in-company trainers and workplace supervisors is more non-formal or informal.

The importance of pedagogical skills of workplace tutors or supervisors increased steadily in Sweden in the recent years. This is strongly linked with and caused by the growing significance of labour market-oriented VET processes and therefore work-based learning processes. Referring to this development, a general introductory module for workplace supervisors was launched in 2014. A supplementary module that specifically addresses apprenticeship education followed in the beginning of 2015. Theses courses or modules are not obligatory but the Swedish government created a financial incentive structure for these pedagogical qualification paths. If the companies or workplace institutions have supervisors who have been qualified in this pedagogical programmes, the apprentices will get additional financial support by the National Agency for Education (Cedefop 2014a, 2016c).

4. SIMILARITIES AND DIFFERENCES TO GERMANY: A SHORT REFLECTION

After the presentation and discussion of national specifics, the status quo and selected trends of the VET system in Sweden, this chapter points out some more short reflections regarding the comparison with the German VET structure. Table 4 therefore starts with some national specifics of both countries regarding education and training in general, where we can find first similarities or common challenges.

Table 4
National specifics regarding education and training in general: Sweden and Germany

Sweden	Germany
· Sweden invests heavily in education and training, with general government expenditure on education being among the highest in the EU. · Sweden has one of the highest tertiary educational attainment rates in the EU for 30-34 year-olds and the employment rate of its recent tertiary graduates is very high. · School education outcomes in terms of basic skills proficiency declined continuously over the past decade. This could translate into declining skill levels of adults in the future. · The increasing performance gap between foreign-born and native- born students is a challenge: school segregation may well have increased in a system with greater school choice. · Integrating the large number of newly arrived students in the education system is a major challenge; Sweden can however build successfully on its policy tradition and current efforts.	· Participation in all forms of education increased and outcomes improved, including for disadvantaged groups. Socioeconomic background however still has a major impact on education outcomes. · Integrating the high number of recently arrived refugees is a major challenge. A large proportion of the refugees are young and poorly qualified. · Almost half of a youth cohort start higeducation. Higher education is also attracting an increasing number of international students, in particular in science, technology, engineering and mathematics (STEM) disciplines. · The well-established dual training stem is struggling to attract enough apprentices in certain regions and sectors. Combined with negative demographic trends, this may lead to a lack of skilled workers. · Addressing the key challenges will require additional investment in education, which remains low by international comparison.

Source: Education and Training Monitor 2016.

VET as part of the national education system is still quite big and famous in both of the countries, although the attractiveness is partially getting poorer in some specific VET programmes. The structural difference is that initial VET in Sweden is a programmatic sub-part of the upper secondary schools and therefore also considerably linked with academic-oriented education, which is offered at the same school. Initial VET in Germany regarding the schooling part is more or less cut from the academic education regarding a "real permeable" education structure. So it seems that we have more permeable paths in Sweden and more level-regulated structures in Germany.

Additional to this, we also have to mention the 12 VET programmes offered by the initial VET in Sweden, which seem to be more like wide-ranged occupational orientations, while in Germany we have more than 330 different very specific training occupations. Thus, we can interpret that Sweden is following the "paradigm of employability" in wide-ranged fields of occupations, while Germany is focussed on the "paradigm of occupations" in a much more specialised occupational understanding.

If we compare the frequency and educational efficiency of matching processes of school- and work-based VET and therefore the structural linkage between companies and educational institutions, it can be stated that Germany has a bigger involvement of companies in the initial VET level, while the promotion of further/continuing/higher VET by companies is more explicit in Sweden.

If we look at specific target groups of both national VET systems, it is obvious that there are at least two groups of VET recipients which will influence the upcoming dynamics in both

countries further on: (1) NEETs, young people that are not in education, employment or training and (2) young refugees. This means that the ongoing developments regarding the paradigm and concepts of "inclusion in VET" and intercultural learning will dominate the VET debates in Sweden as well as in Germany in the next years.

Last but not least we would like to focus on the different approaches of the qualification of VET teachers and in-company trainers/workplace supervisors. In generally, VET teachers in Sweden study after passing VET programmes and working in the occupational fields, while in Germany VET teachers can start their academic teacher education directly after passing the general education. Although a lot of teacher students in Germany passed VET programmes successfully before starting their academic education, the VET school teaching professionals in Sweden can be estimated as more experience-driven. In regard to the qualification of workplace tutors/supervisors in companies or other workplace institutions, Germany has a formal standard for qualification (Ausbildereignungsprüfung) and also formal upgrading training schemes (Aus- und Weiterbildungspädagoge IHK; Berufspädagoge IHK), while in-company trainers in Sweden only require to designate a responsible supervisor for the apprenticeship processes, linked to recently developed optional training courses (French/Diettrich 2017).

5. CONCLUSIONS: CHALLENGES AND INNOVATIONS IN SWEDISH VET FROM A GERMAN PERSPECTIVE

Improvement of attractiveness of VET

Currently, the debate in Sweden can be described as a change in VET improving a higher linkage to the labour market. In some cases, that closes the doors to higher academic education at the end of the VET programmes, when the part of general subjects is reduced. Therefore, the attractiveness of the VET path decreases for the students and their parents. They want to have a wide range of opportunities. This consequence is nearly similar in Germany, where we can see a massive trend towards academic programmes and the reduction of young people entering the apprenticeship-model. "2013 was the first year in which more youths enrolled in a university degree than in a dual apprenticeship programme" (Wieland/Lezcano 2016, p.8).

How to develop an open structure that enables young people to enter the labour market successfully after they have passed the VET and give them the opportunity to enter academic programmes, seems to be an unsolved challenge in both countries.

VET target groups NEETs and young refuguees

In a more school based system, the possibility to ensure the educational development of the mentioned target groups, seems to be easier. The huge investment in training language skills, as it is practised in Sweden, is helpful. In Germany it is still quite difficult to persuade companies to conclude an apprenticeship contract with disadvantaged adolescents. The "One-Year-Inte-

gration Programme" (Einstiegsqualifizierung), that supported companies by offering one year of practice before the students started their apprenticeship, was helpful. However, actually we can see that it is a still a big challenge to support refugees in developing their language skills while giving them work experiences in different occupational fields to help them in career guidance, not least because of their low knowledge about VET pathways in Germany.

Permeability structures as input for Germany

Finishing an apprenticeship in Germany means to be prepared to work. This is one factor of attractiveness for companies of that model. Their must be a strengthening to improve informal competences by entering academic programmes and to develop special courses to help "work-experienced students" to enter the learning cultures of academic teaching and learning.

Structures of work-based learning and apprenticeship-schemes as input to Sweden

To establish work-based learning and apprenticeship-schemes in Sweden's initial VET, a shift of responsibility from state to company is needed. On the one hand, there is the risk of losing the permeability. At the same time, new structures of quality assurance, as they are existing in German chambers, are needed, controlled by the social partners. That means the willingness of investing time and money for employers, which can only grow by time and the experience of success.

Experience-based VET teacher education and training as input for Germany

Realising the need of work experience in VET School and the shortage of academic qualified VET teachers in Germany, new pathways should be systematically opened for masters (Meister) or other specialists (e.g. Techniker, Fachwirte, Geprüfte Berufspädagogen) to work in VET schools. That means to eventually break with the tradition that teachers in school have a job for their lives.

In-company trainer/workplace tutor qualification as input for Sweden

To raise the importance of work-based learning in Sweden systematically, a better qualification for in-company trainers might be one strategy. This requires career pathways combined with the wage bargaining of social partners and public finance.

Further VET innovation transfer from Sweden to Germany

Changes in life and in work life happen all the time. The traditional way of thinking in Germany is that a well trained person in a specialised occupation retains the opportunity to earn money the whole life. This tradition is beginning to crumble. An expansion of a systematic further VET structure is needed. In this case, Germany can learn from Sweden.

To analyse the VET System in a foreign country is a good inspiration for the own one. Therefore, an exchange of VET experts on all levels and institutional contexts should be continued in the future.

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VET and Newly Arrived Immigrants: Challenges of Recognition and Validation

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Abstract: Vocational education and training is often seen as an instrument to facilitate inclusion of newly arrived immigrants to labor markets. However, several studies have shown (cf. Andersson & Osman, 2008, Lasonen & Teräs, 2015) that they face obstacles when seeking jobs in their new host societies. This paper examines the policies of recognition and validation of formal and informal competences in Finland and in Sweden. The aim is to compare policies in the field in the two countries and thus to enhance understanding of this complex question. In addition, we explore research of recognition and validation in the countries. The material comes from policy documents regulating validation and recognition of competences in Finland and in Sweden. The examination suggests that even though policies and processes are established and documented, immigrants face difficulties in recognition and validation of their competences and thus face difficulties in accessing labor markets.

Keywords: Recognition, validation, newly arrived immigrants

1. INTRODUCTION

Vocational education and training (VET) is often seen as an instrument to facilitate inclusion of newly arrived immigrants to the labor markets. VET is thus perceived as a part of a transitional labor market. However, in practice newly arrived immigrants face several obstacles when seeking education, jobs and recognition and validation of their competences in their new host societies. There is general consensus that it takes at least five years for professional and skilled immigrants from outside the EU /ESS area to gain access to the Nordic labor market. The Nordic welfare states give high priority to develop policies and concrete measures to shorten the entry of newly arrived immigrants to education and to the labor market. For instance, the Swedish government has introduced recently a national program called the "Fast track" to facilitate immigrants' inclusion in different vocations. This article examines recognition and validation of immigrants' competences as mechanism for inclusion into the labor markets in Finland and in Sweden. The focus is on general policy and process level, not on a specific sector or a vocation.

Between 1990 and 2016 number of people with a foreign background increased from 0,8% to ca. 6% (353 993) in Finland, total population being ca. 5,5 million (Official Statistics Finland, 2018). In Sweden ca, 17% (over 1.6 million) of the population were born outside Sweden (Joyce, 2015). The two countries differ from the number of immigrants but also in relation to history of immigration. In Sweden immigration started decades earlier than in Finland, which turned out to become the country of immigration, and not that of emigration, in the 1990s. Unem-

ployment figures also differ, in 2016 the unemployment rate of Finns were ca. 8% and 17,6% among the foreign-born population, in Sweden the respective figures were 4,9% for native-born and 15,9% for foreign-born (OECD, 2018a; OECD, 2018b).

2. LITERATURE ON RECOGNITION AND VALIDATION IN FINLAND AND IN SWEDEN

In the case of Finland, there are several studies, which suggest that there are problems in recognition of prior learning (RPL) processes and access to the Finnish labor market. For example, the study by the Ministry of Employment and Economy (Eronen et al., 2014) suggested that even though immigrants were well educated, they faced problems with recognition of education and competences acquired outside Finland, and education acquired in Finland was valued more than the one acquired elsewhere (Eronen et al., 2014, p. 16). However, there were differences between immigrant groups in getting jobs. For example, people from Estonia seemed to move to Finland because of the jobs, and they got the jobs easier than other groups, whereas people from Middle East and Africa had difficulties in finding jobs.

Lasonen and Teräs (2015) also found out that education acquired in Finland was valued more than education acquired in other countries. Furthermore, many of the interviewees had applied for and got an official recognition of their competences and despite validation, they had difficulties in finding jobs. In a similar vein, Jaakkola and Reuter (2007) stated that the officially recognized competence did not necessarily guarantee the job during the first ten years in Finland. Therefore, many newly

arrived immigrants re-educated themselves in Finland to learn professional vocabulary and to get better access to jobs. Re-education was often selected from lower level of education than the persons had from their country of origins. In the cases when persons did get jobs and had a relevant career progress, native Finns' support and recommendations were necessary as well as networks were important for employment (Lasonen & Teräs, 2015).

Kyhä (2011) studied highly-educated immigrants and their access to labor markets. She concluded that even a good education did not guarantee a workplace, because acquired degree or competence was not easily transferable from one country to another, and in the worst case, a higher degree could have been completely annulled in a new country and one's competence became completely worthless. Similar types of results have been presented also in Sweden.

There is a consensus in Swedish research that it takes a minimum of five years for educated immigrants from countries outside the EU / ESS area to gain access to the Swedish labor market, despite the efforts of different governments over the past two decades (Andersson & Osman, 2008; Joyce, 2015). The inclusion of immigrants in the labor market has been and still is at the top of the agenda in the Nordic countries. Furthermore, it has impacts on the immigration discourse and policies in the Nordic countries. In other words, the discourse of integration and immigration are two sides of the same coin. In Sweden, there is a political and academic consensus that the "integration measures" (which is synonymous with inclusion and accessing to the labor market) have failed for immigrants from non-European countries. It is also stressed that there is an urgent need

to develop measures for social inclusion of immigrants and to shorten the waiting time for them to access jobs or trainings.

Andersson (2007) showed that RPL classifies knowledge and uses assessment criterion, which were based on formal training framework in a vocation. The consequence and risk of this construction of practice is that the process ignores or excludes skills and competence, which are not part of the formal training framework (Andersson, 2007). This aspect is particularly sensitive to training framework acquired in a specific context and it becomes critical and problematic when training and experience are acquired in another context (see Andersson et al., 2003). In other words, the method of RPL privileges the framework of training in the context in which it is used. In the case of Sweden, as well as in Finland, the framework of the training of a particular vocation becomes the norm, in which the competence of immigrant is recognized or misrecognized. The critical question in the process is how to interpret values and to recognize aspects of training framework, experience and cultural norms in a vocation acquired outside Sweden or Finland. For instance, the construction training framework, technology, and techniques of building houses differ in Somalia and in the Nordic countries.

This problem was evident in the study of recognition and validation of competences targeting immigrants to facilitate their inclusion as professionals in Sweden by Andersson and Osman (2008). In this study, it was apparent that practice functioned as a dividing practice, which placed immigrants either in subordinate positions or totally excluded them from their vocations. In other words, immigrants' competences were given partial recognition or were misrecognized. This implies that assessing immigrants' prior knowledge of a vocation is based on a norm,

which is formed by the Swedish training framework (Andersson & Osman, 2008; Berggren & Omarsson, 2001).

Sandberg and Andersson (2011) examined an RPL project, which aimed at developing a practice of RPL in working life, and at how knowledge can be compared with the content of university level courses. The result of the study suggested that academic terms and assessment criterion were privileged in the process, even that academic thinking and assessment colonized the whole process. For instance, academic writing played a critical role in the process. However, and it is important to point out that the process made the system of higher education more transparent and opened it to the RPL process. Furthermore, the process made it easier to recognize prior learning or the participants learned how to express their prior learning. Thus, the language aspect in RPL process is critical, particularly for immigrants in general, irrespective of vocation (Andersson et al., 2003; 2004).

The report by The Swedish Agency for Public Management (Staskontoret, 2013) mapped and evaluated validation measures for immigrants and stressed the following: the need to conduct evaluation, and impact studies on RPL to strengthen the legitimacy and trust of the validation process, to strengthen the knowledge the Swedish National Employment Office and the municipal adult education. Furthermore, studies on professional counsellors (Studie- och yrkesvägledningen) are critical in the process of validation, particularly in identifying the need for validation and other measures.

3. CASE FINLAND

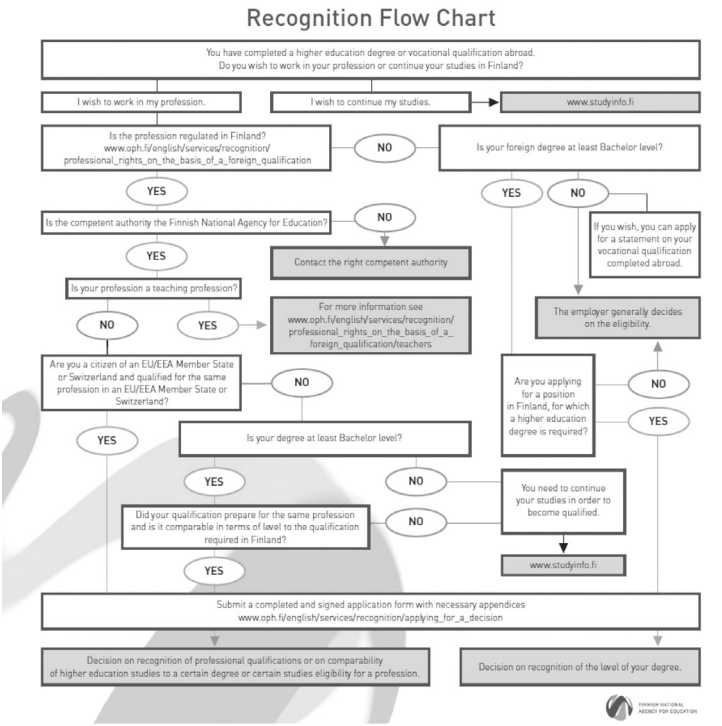
3.1 RECOGNITION AND VALIDATION OF FORMAL COMPETENCES

The formal validation process, in which one has completed a higher education degree or vocational qualification abroad, starts with identification of acquired competences. Identification is made by comparing previously acquired competences to competences stated in the national qualifications framework. Thereafter, those competences will be recognized by respective authorities, schools or employers. The Finnish National Agency for Education is the main authority, which recognizes qualifications acquired outside Finland (degree and vocational qualifications). Different field-specific authorities decide on the professional rights that foreign qualifications give within their area of competence. For example, National Supervisory Authority for Welfare and Health (Valvira) grants, upon application, the right to practice as a licensed or authorized professional and authorizes the use of the occupational title of a healthcare professional. Employers assess foreign qualifications themselves and grant access to workplaces. Higher education institutions and other educational institutions decide on the eligibility that foreign qualifications give for further studies, and are responsible for transferring of academic credits inside the programs. (FNAE, n.d.)

A decision of recognition is obtained by application and processed individually. There are four types of decisions: a level of degree, eligibility for a profession, recognition of professional qualifications and higher education studies completed abroad as comparable with studies completed in Finland. The follow-

ing flow chart depicts the process when one wishes access to the Finnish labor markets. (FNAE, n.d)

Figure 1.
Flow chart of recognition in Finland (OPH, n.d.)



In the figure 1, the process is outlined when a person has obtained a higher degree or vocational qualification outside Finland. First, the person needs to find out if the profession is a regulated profession. If it is not, the employer makes the decision. If it is a regulated profession, the person needs to find out if it is regulated by the National Agency for Education or by a field-specific

agency such as health care professions. In the latter case, the person needs to contact the specific agency. If the person is a citizen of an EU/EEA Member State or Switzerland and qualified for the same profession in those countries one can submit an application to the National Agency for Education.

3.2 RECOGNITION AND VALIDATION OF INFORMAL COMPETENCES

Recognition of informal competences follows the four-step process by the Council of European Union. 1) Identification, 2) Documentation, 3) Assessment and 4) Certification (Council of the EU, 2012). Karttunen (2016, p. 4) stated that validation of non-formal and informal learning is not a new process in Finland and that the legislation and policies are well developed and detailed. There are different models used by different education providers. Furthermore, they empathize strong co-operation with working life and that validation is included in competence-based qualifications (Karttunen, 2016). The Finnish public employment services undertake so called skills audits, in which a person together with an employment counselor assess skills and competences of the person as well as further training needs. (Karttunen, 2016, p. 6)

Validation methods include an online tool for a person to assess her/his competences (www.osaan.fi). However, the e-tool provided by the National Board of Education is only in Finnish and in Swedish, which implies that the tool is not for newly arrived immigrants whose language competence is not yet sufficient to use the tool. Validation can be based on documents or competence tests in authentic working life situations. A tripar-

tite assessment of the competence test is made by representatives from the employer, employee, and education (Karttunen, 2016, p. 19).

4. CASE SWEDEN

Recognition and validation of competences is not a new phenomenon in Sweden. Since, the 1990s the Swedish government has had two commissions in the area. In addition, the process of validation in Sweden is not radically different from the Finnish one. In Sweden, it has been part of the Swedish arsenal of measures to facilitate the inclusion of immigrants since the 1990s. In other words, RPL has been at the centerpiece of Swedish policy to facilitate inclusion of immigrants into the Swedish labor market.

4.1 RECOGNITION AND VALIDATION OF COMPETENCES

The studies reviewed above examined the different RPL initiatives targeting different vocations and groups in Sweden. In addition, various methods of validation were developed by different private organizations as well as adult education institutions, university colleges and universities. These methods developed by institutional actors were often done in cooperation with different branch organizations.

The recognition and validation process starts, as shown in figure 2, during the asylum seeking process. During the waiting period, asylum seekers are expected to begin with Swedish language training, and a preliminary mapping of their education is conducted. For immigrants with a university education are

given the necessary information about how to apply for validation, and which institution is responsible for validating their education. For academics it is usually the Swedish Council for Higher Education, for medical doctors and other professions in the health field, it is The National Board of Health and Welfare. These institutions' assessments are critical in the next phase of validation, which begins when the asylum seeker is granted a residence permit and the person is placed in a municipality. At the same time, the person automatically becomes part of the introduction program and the Fast track program, which are run by the local employment agency (Arbetsförmedling).

During this phase, further mapping of the person's competency is done in dialogue with a supervisor at the local office of public employment. In addition, a plan is set up for the person to attain the qualification to become a part of a community of practice in Sweden he/she is interested in. At the same time, the person is enrolled in relevant Swedish language courses – a general Swedish language course as well as a language course of a specific vocation. At the end of the course, the person's theoretical and practical skills are assessed and validated. Complementary courses, which usually take 4–6 months, are often recommended.

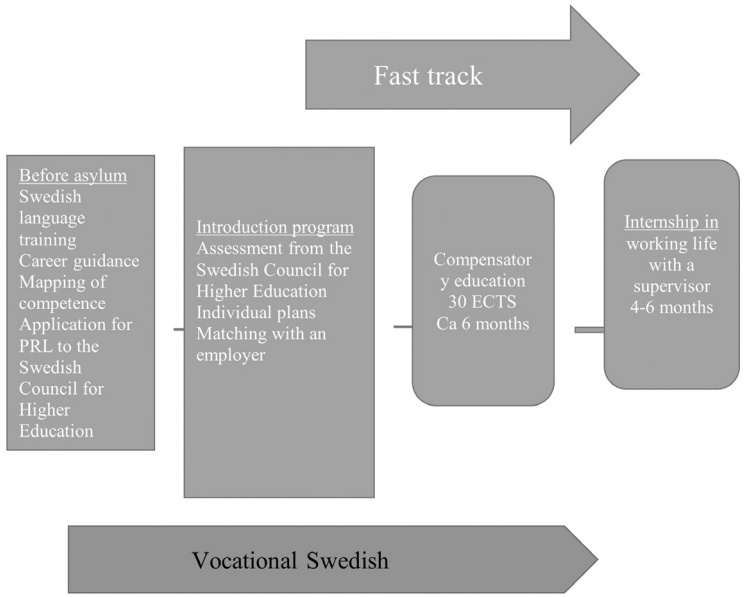
4.2. FAST TRACK PROGRAM

The recent surge of asylum seekers and refugees in Sweden from the wars in the Middle East has led to a number of policies and national programs to facilitate the integration of immigrants into the labor market. Furthermore, programs aim at countering the negative perception and public discourses of immigration.

One of these programs is the National "Fast track" program. A critical element in it is validation. The program targets asylum seekers that have been awarded asylum and a permanent residency. The program consists of the following elements. The process has six steps or stages: Step 1. The fast track begins with a self-assessment at the public Employment center. This is the first stage the mapping of competence and is done in one's mother tongue. This provides the individual with the tool for comparing their skills with what is required in the Swedish labor market.

Identification of professional identity, competence and experience are important pillars. According to agreements with BYN (Construction Industry Board), the person must have ability to complete at least half the construction program or corresponding in each profession to be considered as a professional for validation. Step 2. The person's professional competence is assessed and tested by a supervisor in an authentic work situation. The supervisor's fee is paid by the Employment Service to the employer for a maximum of 3 weeks. Step 3. If the person is evaluated as competent, he/she proceeds to validation in the form of supplementary mapping supported by an interpreter. An individual education plan is tailored for the person. Swedish Employment Service conducts this process using validation consultant approved by the industry. Step 4. Professional Swedish, if necessary, is provided to the person for enabling supplementary education. Step 5. Compensatory labor market education and vocational language training is provided to the person. Step 6. If the person is evaluated to have opportunities based on his / her competence, he/she proceeds to in-depth competence survey with certificate (Arbetsförmedlingen, n.d. a). The following figure 2 is an example of the fast tract program for s social degree.

Figure 2.
Model for the Fast program for a social scientist
(Arbetsförmedlingen, n.d. b)

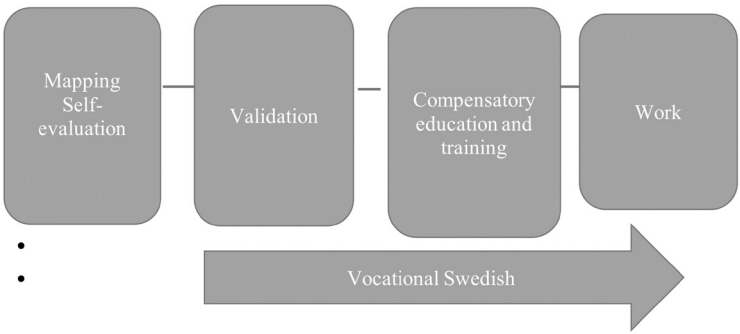


4.3. RECOGNITION AND VALIDATION OF NON-ACADEMICS

The validation of non-academic or university level vocation is slightly different (see figure 3). The first phase is the same as for the academics. The validation begins with a self-evaluation, whereby the person seeks legitimation for a specific vocation at the local employment office with the help of a supervisor. The person is asked, in one's mother tongue, to identify knowledge and experience on different topics, which are derived from the Swedish training framework for the vocation. In addition,

the person is asked to provide documents such as certificates to show which type of training and education the person has from the country of origin. These documents are sent to relevant authorities for assessment. The next stage in the process is to match the person with a potential employer. Thereafter, the person's knowledge is assessed by a supervisor in an authentic work situation with the help of an interpreter, if needed. An education and practical training plan are developed based on supervision and designed for the person. In other words, the supervisors determine the theoretical and practical gaps the person needs to upgrade. Finally, the employment office provides the person education or training recommended by the workplace supervisor. The Swedish language training is an integrated part of the whole process.

Figure 3.
Model for validation for non-academics (Arbetsförmedlingen, n.d. c)



The new commission of validation started its work in 2015 and is expected to complete its work in 2019. The purpose of the new commission is to coordinate all validation initiatives and develop a new national strategy on validation. The commission

has recommended to the government that the national strategy prioritizes the following: a mechanism to ensure transferability between qualifications, to create a national and regional responsibility or roles in the area. Development of methods to ensure the legitimacy of the process of validation. To provide and ensure resource (financial) and organizational infrastructure to ensure stability in the process. The strategy also recommends the need to put in place information and guidance counselling resources in relation to the process. Finally, the commission underscores that without a stable organizational structure, adequate financial resources and coordination of information to all actors, directly and indirectly involved in the process, all recommendations will fail. Furthermore, the commission also stresses that the process requires good vocational guidance and a counselling system. (SOU, 2017).

5. DISCUSSION

In this article, we have examined policies of recognition and validation of newly arrived immigrants in Finland and in Sweden. There are similarities as well as differences within the two countries. Similarities are that policies and processes of RPL are not new phenomena in the countries and that there has been a growing interest to develop practices for recognition and validation. In addition, in both countries, there are many policies, practices and projects, but the studies suggest that these materialize only partly.

There are different agencies that have leading roles, in Finland it is the National Agency for Education and in Sweden Employment Agency. Furthermore, field-specific institutions, employers

and educational institutions regulate RPL in their field. In Sweden, a supervisor at the workplace has a leading role whereas in Finland a tripartite assessment is made, when assessing informal competences. In both countries, more emphasis has been put on recognition of formal competences than on informal ones.

For example, in Sweden there is a discussion about how the formal training framework is privileged compared with the informal learning. In other words, the national training framework functions as the baseline to identify knowledge gaps, which become the basis for complementary education and training. Thus, the training framework is the norm in which the initial process of inclusion or exclusion are made. The supervisors assessing the persons in workplaces hence function as gatekeepers in the process of inclusion and exclusion. Furthermore, as explicit in the process of validation, complementary education and training is limited to 4-6 moths. This implies that the person can access the Swedish community of practice if he/she has a training, or undergone a training, which is relatively similar to the Swedish framework of the vocation.

Thus, we can ask are informal learning and formal training independent from each other and from technics, technological development and social-cultural dimensions of a specific context? Another critical issue is transferability of knowledge and skills from one context to another, and can experience gained in a specific context be transferable to the third or fourth context? Furthermore, RPL does not address, how informal learning acquired in a workplace can be translated into formal learning modules or how life-long learning aspect is affecting the process. Therefore, we need more critical reflection and studies about recognition and validation of newly arrived immigrants' competences.

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