

Teaching, Learning
and Teacher Education

TEACHING, LEARNING AND TEACHER EDUCATION

EMERGING ISSUES IN RESEARCH
ON VOCATIONAL
EDUCATION & TRAINING VOL. 5

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

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PREFACE

This book is the fifth volume in the research book series *Emerging Issues in Research on Vocational Education & Training*. The series is published by the research group VETYL (*Vocational Education & Training/Yrkeskunnande och Lärande*), at the Department of Education, Stockholm University, Sweden. VETYL was created in 2011 with twofold aims: contributing to the advance of knowledge in the intricate area of vocational education and training (VET) and strengthening the research basis 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 translates as “vocational knowing” and indicates one of the major research concerns of the group.

This volume, as well as most of the earlier ones, is an outcome of the international conferences organised yearly since 2012 by our research group VETYL. The conference has had two core aims: becoming a forum for sharing state of the art research in the field of VET and serving as a forum for networking and cooperation. The Stockholm International Conference of Research in VET is one of the major academic events organised in Europe as part of the European Network for Vocational Education and Training (VETNET).

The texts in this volume are selected papers submitted to the VIII Stockholm International Conference of Research in VET initially planned for May 7th and 8th 2020. Unfortunately, the

conference was postponed for 2022 consequence of the Covid 19 pandemic affecting all us globally. We missed the academic and social networking, the scholarly discussion and all the fun of our academic work that this conference facilitates but this volume is an excellent prove of our resilience and the continuity of our work even in these uncertain times.

The title of this volume *Teaching, Learning and Teacher Education* serves as an umbrella where comparative analysis as well as other research outcomes of cross-national interest are presented. Teaching and learning in VET is characterized by a diversity of teaching contexts which poses considerable challenges to organization of the learning process and the learning process itself.

Contributions in this volume highlight this multifaceted aspect. Reflexive Grounded Theory is used in one of the contributions to analyse processes between standardisation and subjective decisions. Biographical analysis is argued, in other text, to be a useful tool in processing dropouts within professional development. Likewise, the importance of peer projects for the development of social skills is highlighted in one of the contributions presented in this volume. Other relevant aspects in the process of teaching and learning in VET are presented in the contributions, for example: learning through active participation as a way to develop citizenship education for VET students. Experiences of meaningful and engaging work in social and health care organizations. The theoretical and practical relevance of Capability Approach and didactical implications of adequacy of school facilities for a more meaningful leaning process in technical drawing.

Teacher education is a corner stone for meaningful learning in VET. In this volume several of the contributions present

research outcomes related to various aspects of teacher education, such as: motivation for the teaching profession, Why Do Professionals Want to Become Teachers? A video-based test instrument for the assessment of professional competence in the vocational teacher training course. The development, Implementation and effects of a fast-track program to train qualified VET teachers, and school principals views about competence development in training teachers for adult education.

As we have seen it in earlier volumens of our book series, a common aspect in the diversity of theoretical and methodological positions is an acknowledgment of the research complexities in the field, as highlighted by Felix Rauner and Rupert Maclean (*The International Handbook of Technical and Vocational Education and Training Research*, 2008, p.13) in the following terms:

The variety of research questions and development tasks at the levels of vocational education and training systems (macro level), the organization and design of vocational training programs and institutions (meso level) and the analysis and shaping of education and learning processes (micro level) leads to the integration of different scientific disciplines and research traditions. VET research therefore can be organised only in an interdisciplinary way.

This volume continues the tradition of our book series to depict the diversity of research in the field in a way that is not frequently available in the literature today. We hope that the book will fulfil 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 contributors to this volume!

Lázaro Moreno Herrera,

Marianne Teräs

& Petros Gougoulakis

Stockholm, October 2020

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Section I:

Teaching and learning in VET

Teaching and learning are core stones of vocational education and training. How can we best support and enhance learning of VET students when they are striving towards their vocations and meaningful work as highlighted in Isacson's and her colleagues study. The chapters in this part of the volume show complexities of teaching and learning in vocational education and training. The common aim for both teachers and students of VET is that the students learn a vocation; skills and knowledge, practices and procedures needed in the vocation, branch area and work. Learning of these support students' transition to working life and start of their vocational careers. However, the task is huge because of the variety of vocations in different countries and contexts. In addition, learning pathways to vocations are diverse and vary; one can start VET after comprehensive school or one can start a vocational career after leaving the university and reforming one's identity as Bergmann's study indicates.

The chapters in this part reflect well variation of vocations, and at the same time, highlight different skills, like social skills explored in Struck and Franz' study, and competences needed to become a competent worker. However, looking skills narrowly is not enough in today's complex societies, and therefore, vocational students need to be equipped with skills and knowledge like citizenship skills and democratic education as Höhns points out. In the same line continues Alessandrini and Marcone when reflecting potentials of capability approach to VET.

Digitalization of work has increased need for literacy competences and handling written world and literacy of work has become important as Reinke and Kaiser's study shows. There are general skills such as mentioned above, but also vocation specific skills like technical drawing and graphic communication as Mustapha Chedi's study demonstrates. Learning and teaching reflect changes in time like what kind of skills and competences are needed in a specific context and time. In addition, learning and teaching reflect also changes in the VET systems as Moreno Herrera and Vento Carballea reveal in their chapter focusing on Cuban sloyd.

What influences the individual writing in commercial activity and how can it be explored? A research based on Reflexive Grounded Theory on customer correspondence processes between standardisation and subjective decisions.

Prof. Dr.Hartmut Reinke*
& Prof. Dr. Franz Kaiser

Abstract: The handling of written language is both an important skill and a distinguishing feature of the sales staff. Have you ever wondered about office workers corresponding individually with customers? How do they feel with that task which they are usually not qualified for? Where and what are the obstacles between the first idea and the text sent? Is there a difference in the perception of the freedom associated with this in a relatively standardised commercial correspondence?

In his PhD study “Das schreibende Subjekt”, Reinke asked these questions and gathered answers via ethnographic field research. He visited employees in different companies and branches and observed them with the help of video whilst they were writing individual letters and mails to their customers. Participants in this research explained why they write what they write, providing deep personal insights into today’s business and

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corporate cultures, as well as personal behaviour and beliefs. Reinkes professional background, a coach for professional writing, helped to open doors and minds into the complex mesh of influences. The companies covered in this study are from pharmaceutical, financial, food, cosmetic, logistic, dental service, education and fashion background. Exploring the field of operational writing skills means considering socio-cultural, educational, psychological and linguistic perspectives. The paper will focus on the theoretical and methodological approach with some individual cases. Each are described, analysed and interpreted, compared and put together, reflecting writing models. The study shows that systematical training for (individual) writing hardly exists; therefore, employees use different sources in order to cope with that task. It is based on Kaisers research on “business and administration skills” and to his qualitative research approach in his PhD on experiencing time in different occupations, the activity theory used as framework and ended up with a deep insight into the world of daily work, created by real people and their reflections on their own daily writing to clients.

Keywords: business communication, corporate wording, office writing, VET research

1. WRITING BUSINESS?

This research report focuses on the analysis of the creation process of individual correspondence between commercial employees of various companies and their customers from the perspective of the writing person. “Customer correspondence” is a marketing tool and marketing is a reference area of commercial business activity. Business in Germany’s economic order generally means a capitalist-oriented, profit-oriented economy. From this point of view, customer correspondence is an instrument – and the commercial agents are mediators using that instrument in daily work.

In companies, employees act in writing in digital and analog form with customers; On behalf of the company, they compose texts for various occasions and with different addressees. The authors of the correspondence are part of the brand-customer relationship; their behavior shapes the brand perception by the market, i.e. the customers. Language is the medium of social interaction, is an element of service and as such is directly edited by an author.

In written communication there is a sender, at least one recipient and a message constructed by a) the written form, b) to be reconstructed, and c) a permanent message. If the correspondence between sender and recipient is conducted online, for example in an internet blog or in a social media application, can in case of doubt “read the whole world” and even in a form that is not limited in time. In this environment, it is the commercial

people who translate corporate identity and marketing requirements into communicable situations that can be experienced.

What processes take place on the author side when individual letters are written to customers? What steps does a commercial person take, evaluate, reject before and during writing and after? Perrin (Perrin, 2001) examined similar questions and considerations in the journalistic area; So far, commercial, non-journalistic correspondence situations have hardly come into the focus of scientific research.

2. THEORY AND METHODS

2.1 THEORY

In his work published in 2012, Kaiser examines the professional thinking and acting of merchants and commercial employees from a historical, sociological and content analytic perspective. He looks at the development of business and the training regulations for merchants over the centuries since the Middle Ages and summarizes:

“[...] for business people in the company, this means that dealing with IT technology and translating logics and symbols into other contexts and languages is becoming an everyday part of their professional life. At the same time, they act in increasingly open decision-making situations, the emotional components of which they design, particularly at the communication interfaces inside and outside the company. The contradictions arising from the interests of corporate goals, the goals of employees, customers and possibly social interests must be perceived, endured or, if necessary, resolved and

converted into acceptable compromises. This increasingly requires reflection on the context, knowledge of business processes and creative design [...] competence and makes dealing with questions of entrepreneurial independence an integral part of training [...].” (Kaiser, 2012, S. 170)

Commercial employees therefore interpret symbols and logics in order to be able to translate them into other contexts and languages. This understanding of the function of the commercial staff at the company’s communication interfaces is the starting point for considering the role of employees in a function that communicates with customers in writing and the interpretations existing within this function. In Reinkes dissertation, it is spoken to those “translators”, whether they have an explicit business education or a corresponding business degree or not.

The employee’s individual letter to customers should be understood as “translation work at the interface” in order to remain in Kaiser’s image. The employee does not write under a private sender, but represents the company that employs him or her.

Office workers use their skills of writing, but whose literacy characterizes the written result?

Qualifications of commercial office workers

In 2015, Kaiser and Brötz formulated the vocational training concept for the activities and qualifications of commercial employees (**Figure 1**):

“Since professionally qualified commercial employees are to be empowered to act independently in the economic interest,

their vocational training aims to train them to act comprehensively and reflect.”

(Kaiser & Brötz, 2015, S. 86)

In the study about the importance of commercial qualifications from the point of view of active office workers, they were asked which skills “are very important or important for your professional activity?”

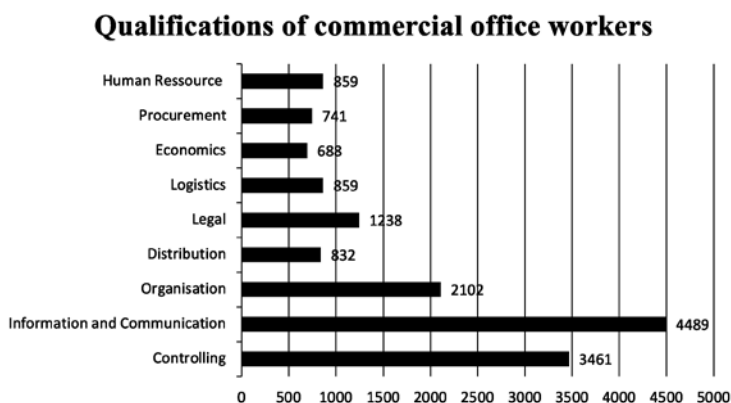


Figure 1: Qualifications of commercial office workers

2,304 people interviewed were allowed to choose several qualifications in a representative survey of the mentioned project on commercial occupations (Kaiser, Annen & Tiemann 2017). The qualification field of “Information and Communication”, which combines word processing, office technology, conversation and teamwork, information on operational processes and office management processes, was chosen with 4,489 votes and thus the strongest. The authors also state that there are no comprehensive descriptions of the activities of commercial employees.

They also recognize that the importance of further training in the field of communication will continue to increase in the coming years. They describe various fields of activity and qualification areas of commercial employees and see also “sales management” and “information and communication” as core elements of commercial trade. “Sales management” includes the sale of goods and services as well as the acquisition and advice of customers. “Information and communication” is the generic term for internal and external communication, the exchange of information and data without being restricted to a specific medium or a specific language. Business correspondence and team discussions, presentations and planning coordination – all this content shapes the working world of commercial people. These findings fit well to the the results of the content analysis in the project and were a great surprise because the previous discourse in commercial vocational training research had regarded accounting and controlling as a central area. Kaiser’s work shows that the qualifications relating to information and communication are the most important qualifications from the perspective of active business people.

If most of the commercial employees surveyed name “information and communication” as the most important qualification and this qualification field comprises a heterogeneous compilation of different understandings and tasks, contents and processes of information and communication, it is helpful to examine concrete processes in concrete companies.

Analyzing the writing and text production processes of commercial employees in their real work environment against the background of real action situations serves to illuminate and sharpen the view of the elements that concretize the need for qualifications.

Commercial employees do not have to have learned a commercial profession in order to be commercial. In the strict interpretation of Rauner's "technical language" understanding

(Rauner o.J.), it is questionable whether there is or can be a separate identity-indicating technical language for commercial workers without relevant training in the commercial field. The work and approaches of Efig are helpful and supportive here, since it broadens the narrow understanding framework of the Rauner's terminology by differentiation. Efig differentiates on the one hand the educational language and the technical language – both components, the mastery of which significantly contributes to the acceptance in a professional or specialist group – and on the other hand the professional language. These types of language are elements of communicative competence, which Efig understands as an independent competence, which "should not be regarded as a partial competence of a social or interaction competence" (Efig, 2015, 20)

He sees the "language system competence" or "language standard competence" and "language use competence" as forms of communicative competence. "Language system competence" and "language norm competence" include in particular phonology (phonetics), morphology (inflection and word formation), semantics (word meaning) and syntax (sentence structure); "Language use competence" is characterized by appreciation of the context of the respective language use situation. (Efig, 2012, S. 7)

"(Written) language": more than a competence

The relevance of dealing with language broadens the limits of vocational training terms. For Vygotskij, language is the source

of social behavior and awareness. Language, and Vygotskij already wrote this in 1925, is a communicative element and as such embodies that

“The ability of people to be attractive to themselves is the basis of consciousness. One can already speak of an interaction of the individual reflex systems with certainty, of the fact that one system is reflected in the other.”

(Vygotskij, quoted from Papadopoulos, 2010, p. 41)

Communication is one of these systems of interaction; The stimulus “language” is potentially a source of personal awareness and controllability of one’s own behavior:

“Because this stimulus has the specific function of the feed-back action, it transforms the psychic operation into a higher and qualitatively new level and allows people to control their behavior from outside by means of extrinsic stimuli.” (ibid)

Written language can be derived as a historically grown everyday relevance of cultural action and commercial activity; The economic motives in the development history of writing – from the petroglyphs to the alphabet to the typewriter to the PC – are obvious. Writing has to be viewed in a differentiated way, as a cultural technique as well as a medium of commercial activity.

Figure 2 shows the pre-concepts on which our study is based, which were only sketched in a rudimentary manner – understood as associations – in order to keep the view of the actual as open and free as possible.

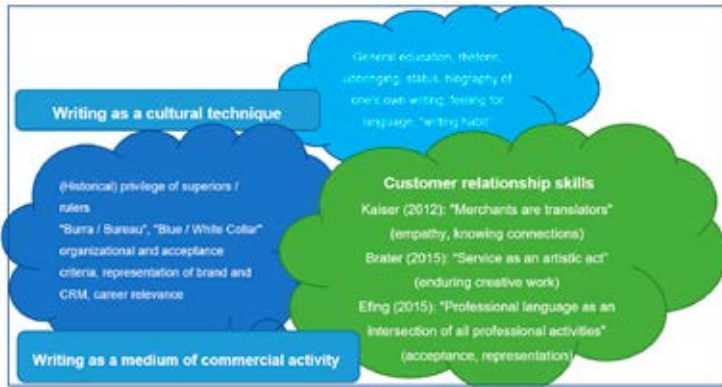


Figure 2: Pre-Concepts and Associations (Reinke, 2019, S. 72)

These skills of establishing and maintaining customer relationships are defined from three different perspectives:

The historical approach describes the evolution of writing and its meaning in terms of culture, society, power and later on in the world of work, where the ability of writing is a key competence. Ethymogological roots demonstrate the close links between cultural development and economical takeover – so, “bureau” (the room, where office workers usually write) refers to Latin “burra” which was the name for the fabric that monks weared when they accompanied traders, because of their exclusive writing skills. A wooden table covered by the monks coat – the burra – became the place to write, to sign contracts and continued through the centuries to become not any longer as the word for a desk but for the architecture given to office workers. Another link to the woven structure between clerical institutions – at least the first school offers took place inside monastaries – is “clerk”, the English word for bank employers.

Beside their function and importance as an instrument of business communication, both writing and literacy are indicators for education. The ability of written rhetorics is one of the dedeciphers of (appearancelly) being educated. So, when it comes to research the influences on individual addressed customer correspondence we have to keep in mind these pre-concept of writing as a cultural technique.

The third pre-concept we take into consideration is a mixture of the research results Kaiser, Brater and Efling came up with. The so called “customer relationship skills” are the ability of office workers to interpretater companies internal structures and tasks into communication with external addresses like customers; additionally the service that office worker provide is generated in open situation: at the beginning the office worker do not know if and how a service situation is going to end. It is in spite of all efforts of standardisation an open situation that needs the flexibility and movability of the office worker. And – the last ingredient is the used and engaged language itself. Is the language written to a customer suitable to represent the company and to meet the customers need? Does it fit to the role-image one has about him or herself being an office worker?

Together with the preconcepts described and the resulting implications, search heuristics arise, which are shown in the following graphic.

- Customer-oriented action and ambivalence
- Objectives of writing, types of text
- Creativity and artistic action
- Action orientation
- Structure and process organisation
- Technology/Media/Imagery
- Understanding the roles of office workers
- Language skills/education “Bildung”
- **NEW elements from the material?**
- Writing and self-understanding
- Write process details

In search of the
influencing factors
on the individual
writing of office
workers

These orientations enable universal and adaptable work on the material on the one hand, on the other hand, in order to be able to proceed with the greatest possible openness with the finds from one case for the analysis and consideration of the next case.

4. METHODS AND RESEARCH FIELD

To examine and to research the writing of commercial agents means understanding the use of language and writing up close – directly from the producer, from the source.

The idea of researching in the real world of work is based on activity theory and the assumption that

“the subject depicts the relevant characteristics of his environment and in his actions and thinking”. (Volpert, 1994, S. 16)

The relevance of the characteristics depends on this depiction: A relevance brought to the subject from the outside is not necessarily identical to that which the writing subject intended for

the characteristics of his environment and which is reflected in his actions.

“We are,” says Volpert, “neither automatons nor gods, and what is going on in us is neither a mechanical streak game nor an inextricable chaos [...] recurring in the flow of things and recognizing this flow in the path of one to control flexible order by creating a world of self-made and self-controlled. Acting and learning are discovering, using and creating redundancies.”
(ibid)

Following this point of view means both to be open to the field and to be patient when putting the field together. Precisely because this research is interested in how the texts are created and which influencing criteria can be identified, the step into concrete work practice is of great importance. So, there is no specific selection based on the job description, so there may also be people in the field of study who do not have commercial vocational training but who are nevertheless active in business. Accordingly, we consider the understanding of the meaning of written language competence in a broader context – as a competence in a commercial world, to which communication and correspondence with customers can be assigned without a doubt.

According to Granot (2012) the research was conceptualised as a participating observation, recording the keyboard and the PC-screen the office worker uses. In addition to that a conversation with the author about the real writing situation was recorded. So, the data we brought together contains observations and conversation in real writing situation. The text written during the researchers visits were really send out to a customer. It was no rehearsal.

Reinke is experienced in being a coach for business writing. Due to that it was important to integrate him as a research resource into the research process.

“One major difference between qualitative and quantitative research approaches is that researchers address the role of the instrument, the human interviewer. Rather than view the interaction as a negative [...] the interviewer can be a smart, adaptable, flexible instrument, able to respond to situations with skill, tact, and understanding. Only by recognizing that interaction and affirming its possibilities, can interviewers use their skills to minimize the distortion that can occur.” (Granot, 2012, 550)

The data-analysis was consequently done according to the methodology of the Reflexive Grounded Theory in the way Breuer (2010, 2020) understands it. Its major advantage is to integrate the researcher into the whole research process and to be open to the field. Based on the ethnological-psychoanalytical considerations of Georges Devereux on the connection between fear and method in behavioural science, Muckel 1998, in the context of Breuer’s approach, clarifies the necessity of self-reflexivity and acceptance of subjectivity in the research process. Ignoring the fact that the personality of researchers has an influence on the process is therefore self-deception, violence and a false striving for objectivity.

“From this point of view, many methodological optimisation efforts within science as resistance in the service of the researchers’ fear defence. Such optimisation efforts can be, for example,

the cementing of the claim to objectivity, but also the domestication of the test subject by specifying response categories and language, or the use of computers instead of experiment supervisors, etc.” (Muckel 1998, 66 – Original in German)

Therefore, Reinke’s personal, professional intertwining with the research topic, as a writing coach in business and years of working in the field of dialog marketing cannot be ignored. It is of decisive importance for the access to the research field in this case.

All coding and interpretation was communicative validated and discussed among the online research-network “AQUA” (Workinggroup for qualitative research approaches in social sciences). This network understands itself as a “research family for limited time” and works with max. 8 members – all of them belonging to social sciences as well – regularly.

The field consists of ten office workers from a total of nine companies in the sectors finance, fashion, cosmetics, medical technology, logistics, food and education services.

Since no orientation hypotheses are available in our study, also in order to remain as open as possible, the subject of the investigation “Customer correspondence of office workers” implies at least orienting characteristics. The criteria of selection:

- It was important for the inclusion in the data sample that customer correspondence is created by hand. The participants understand their paperwork as individual paperwork, i.e. to the question “Do you write individual texts to individual recipients?” they answer “yes”. This criterion serves to distinguish it from journalistic texts or pure advertising text production (slogan, ad texts, etc.), as they

are usually provided by trained journalists or advertising copywriters.

- The participants are in work, they are neither unemployed nor sick or on holiday. They are at their place of work.
- They want, can and can be visited there.
- They are really involved in the creation of correspondence texts to customers (optionally letter, e-mail, fax, posting, etc.).
- They write real letters or texts to customers during the visit; they are neither exercises nor examples, but real, real correspondence contributions.
- They agree to the recording of the conversation (audio) and the screen contents of the correspondence/text production (video).
- They participate voluntarily.
- They are commercial employees who do not have compulsory commercial training or study.

The following table shows the participants – who Reinke considers to be a kind of “knowledge islands” and to visit them as such. Every conversation, every workplace accompaniment takes place in a separate world of knowledge, a self-contained “island” of everyday knowledge, everyday rituals, processes, procedures, personal strengths, weaknesses, views, relationships. Each of these islands, to speak to Bourdieu, is its own social, multidimensional field (Bourdieu & Russer (2016)); a place of condensation, therefore, of principles of differentiation and distribution of those properties which within this field confer power, strength, position on their carrier or not.

Persons	Details
Jessica (35): Medical	German studies (early termination) For ten years in marketing Writes info letters to private consumers (pc)
Elke (32): Finance	Bank clerk, business woman For 14 years in the company Writes offers, contractual matters, requests from pc
Katja (38): Logistics	Logistic management assistant For 14 years in the sales department Writes offers, contractual matters, requests from commercial customers (cc)
Horst (58) : Fashion Customer Service	Shoemaker In the workshop for 42 years Responds mainly to complaints from pc/cc
Barbara (52): Cosmetics	Logistic management assistant 16years in export Writes offers, contractual matters, requests from cc
Silke (33): Dental technology	dental technician master Five years in customer care Answered questions, clarifies complaints cc
Petra (27): University of Applied Sciences	Germanist Two years in study counselling Writes about costs, audit topics, company enquiries (pc/cc)
Inge (29): University of Applied Sciences Colleague of Petra	Teacher For 4 years in study counselling Writes about costs, audit topics, company requests(pc/cc)

Ute (52): Beverage manufacturers	Industrial clerk For 22 years in the interior service, writes offers, reminders (pc/cc)
Anton (36): Service provider financial sector	Without detailed representation, since no new accents recognizable.

Figur 1: The researched field

In the presentation of the cases, a brief introduction describes the person, the access to him or her, the employer and the workplace. Since in some cases there was a division (one date “conversation about writing” and one date each “observation of the writing”) Reinke presents the contents of these two parts separately. In other cases, talking about writing and writing itself went hand in hand. If the researcher was allowed, he also picked up the screen content and, if allowed, he wrote the text that had been created there. Reinke was interested in what has been formulated as it has been formulated and interested in the actions of the counterpart. Where does she or he start the text? What is easy for him or her, what seems to be harder to do? Where does she or he set an accent (and what is it in her or his eyes)? That’s why Reinke includes the transcriptions of the screen contents captured on video in the report and uses excerpts from them in the case description.

So Reinke presents the material obtained from these encounters in his own sections: Framework Data – Conversation about Writing/Writing Observation – Screen Content – Interpretation.

In all cases, two graphs that illustrates the individual influencing factors and motives of each case were created.

To give an example and to illustrate the described procedure we will briefly show the case of Horst (H), the shoemaker.

H. works together with five other colleagues in an office that is above the production area. The way to this office leads along the production areas. If you turn around in front of the office, you will have a view from this position over the industrial area, which is about a football field. The black surfaces shown in the next figure symbolize the work surfaces in the Customer Service Department (CSD) office where shoes are stored or possibly repaired. Horst works on the red workstation on the left. The desks are equipped with a PC and printer, as well as a monitor. It uses the in-house CRM system, as well as MS Word and MS Outlook.



Figure 3: Workplace of Horst

The employer of H, “FashionH”, has around 1.000 employees. Headquartered in Germany, the company designs and distributes its own collections worldwide. Some parts of their own collections are manufactured at the headquarters in Germany, while others are manufactured by Asian subcontractors.

H. is a shoemaker and has been in the company for more than 45 years, which has also been his training company. H. is on the verge of retirement and has been transferred from production to customer service in the course of production outsourcing around 2005. In August 2013 Reinke met him for their first conversation at his workplace, the workshop, and sit in the social room (in Figure 3 the room with the light wooden floor) under a flickering neon tube, two cups of coffee on the table. The second conversation – the video session – took place in February 2014 directly at his desk in the workshop.

HORST'S WRITING WORLD – A SNAPSHOT

H. has worked as a shoemaker for most of his working life. He originally did not want to go to the CSD. In the course of an in-house realignment and restructuring of the production processes and processes, H. was nevertheless permanently transferred there, having previously been employed there on behalf of the company.

“And I had to take it over, because as an ASSISTANT I always joined the CSD. [...] And I DIDN't WANT to take it on at the time...”

(this is translated from German, the origin words are: “Und da musste ich es übernehmen, weil ich als AUSHILFE immer die

KDA noch mitgemacht habe. [...]Und ich WOLLTE seinerzeit das nicht übernehmen ...“)

H. has been working in the CSD since 1981 and has taken on the tasks of “totally incorporating himself into this topic”; (Original: “sich total in dieses Thema reingebaut“).

In 14-day quality meetings, in which there may also be disagreements, the CSD discusses all “things that occur where things get brittle” (“alle Sachen, die anfallen, wo es brenzlig wird“). “But I put everything on the table,” (“Aber ich haue alles auf den Tisch“,) explains H., emphasizing: “We have to!” (“Wir müssen das!“)

For H., quality is the decisive criterion for ModeH’s economic success. With his awareness of quality, H. sees himself in line with the deceased managing directors.

In the first three minutes of this first conversation about his writing with customers, Horst makes it clear that the quality of the products has had a significant impact on the company’s past and has also had a massive impact on the current work in the CSD. H. distinguishes between the former quality awareness – the basic requirement “AT THAT TIME” (“DAMALS”) which was always respected by the former managing directors: “Quality quality, quality” – and the type of work that is currently being carried out in the CSD. Horst explains that in the CSD errors are noticeable in the products, which he “always black on white. Always only with examples”, because: “Otherwise nobody believes me anyway.” He puts it on the formula: “Quality assur-

ance and so on.” (“immer schwarz auf weiß. Immer nur mit Beispielen“; “Sonst glaubt mir das sowieso keiner.“; “Qualitätssicherung und so weiter.“)

Reinke asked H. about the quality and its importance for writing. Quality, here H. comes back to his two minutes ago presentation, is from his point of view the “flagship of our company”, which leads to the fact that the employees of the CSD have also increased in terms of writing. Horst also formulates free texts, i.e. writings that are not based on templates. “You have it in the subconscious.” (“Man hat das im Unterbewusstsein so drin.“). It depends on what the customer asks. H. emphasizes that it is best for private customers to talk to each other, so “they should call me, most of them do it.” Difficulties in writing cause him topics such as choice of words and sentence, which is why he finds telephone calls more pleasant than writing. When asked who helps him finding the right words, H. answers within a second: “No one”. He formulates a text in the direction of the customer and sends it without rereading by another person. According to H., letter or e-mail is not read again, it is written and sent out. Nobody inside the company deals with it.

Some weeks after the first conversation took place H. was visited again and now the monitor of his PC was filmed while H. wrote several emails to customers. The main topic of this emails was answering customer complaints. H. wrote briefly and asked them to call him. He seemed to avoid long texts.

As an example of the finish of every researched case we show the graphic summary of H.

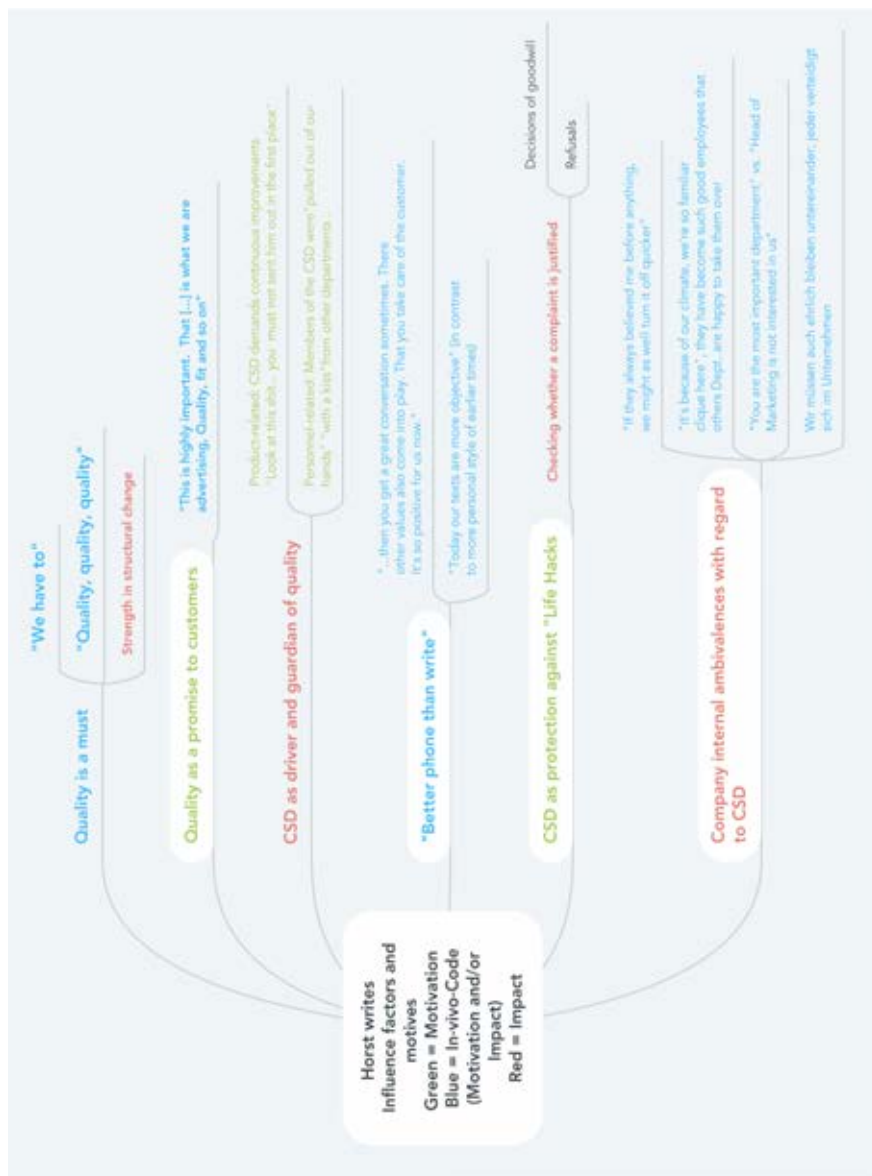


Figure 4: Influences and motives of H writing (Reinke)

“Quality is a must“ – this in-vivo-code¹ is seen as the headline of the influences on Horst when corresponding with customers. He sees the work of his department – the CSD – as an interface between customer orientation and their wish for satisfied needs on one side and as the company’s protector against greed and fraud on the other side.

H. on the other hand belongs to a generation of workers – and in his case: a generation of shoefashion designers and craftsmen who began their apprenticeship at the zenith of shoe production in Germany and then witnessed the decline of the manufacturing companies. It was still the quality of the shoes produced locally in-house, now it is the idea of a brand that is supposed to more or less replace the value of its product. H. has characterized in few words one of the most serious changes in the fashion industry of the last (globalized) decades.

“We can buy it cheaply, make a different label on it and because it is, is good. But that doesn’t get us any further.“
 (“Wir können das ja auch billig einkaufen, machen ein anderes Label drauf und denn ist, ist gut. Das bringt uns aber nicht weiter.“)

This is just a short view inside the field research to give an impression of how it was done. All cases were described and analysed by the scheme seen in the example of H. All these portraits – taking during a five year field research period were analysed under use of the Reflexive Grounded Theory by Breuer

1 In-vivo-code refers to a coding term that is taken from the respondents’ original language usage, “from life”, and whose meaning is explained in a memo.

and in an understanding of an explorative approach of qualitative social research methodology – lead to a common picture of the researched field, showing things in common as well as differences.

5. RESULTS

Looking closely into different realities of work in different branches and doing this under real conditions is a key to both very personal and subjective impressions and patterns that are able to represent common findings (Reinke & Kaiser 2018). All members of this study show an individual way of creating texts, of understanding text sent in by customers.

It was useful in individual cases to distinguish between influencing factors and motives. However, the merging of the cases creates a complex picture first of all and lead to these key terms:

- Jessica:** Creativity in Writing; Self-experience and self-assurance through writing; Ethics; Resonance in the form of click-through rate
- Elke:** Automatic; efficient routine; little reflected writing; Conversation more important; her own relationship with the customer and her own mood of the day influences her writing; strong influence of own educational background
- Katja:** Empathy, to be remembered, Sell, Exchange, CRM, Individual, “Open Up”, Customer Types, Language Feeling

- Horst:** Changing times, globalization, professional honor, quality awareness, cohesion, honesty, closeness
- Barbara:** On the front; decides for herself; Free space; lots of text = a lot of meaning; Structure is important in export; We; my colleague and I
- Silke:** Identification; task and role; personal appreciation; Rules
- Petra:** Service; People; address individually; have a personal effect; free-spirited writing or writing?
- Ute:** Self-empowerment; professional; We; Pick up customers; start business.

6. ANALYSIS – DIVERSITY, SIMILARITIES AND PARALLELS

But what is motive? What is an external influence? Jessica, Ute and Barbara have a strong personal and functional relationship. Jessica and Ute work with their language, with a sense of language for themselves and others, both discover and collect formulations, fine-tune individual sentences and terms, exchange ideas with others in the team or in the department. Both are more or less lateral entrants in their current world of work and assert themselves there, among other things, thanks to their written language competence. In both, although shaped differently, the effort to strike a balance between “business” on the one hand and “reaching people” on the other hand can be seen.

But they differ significantly in their self-assurance: While Jessica (and her colleagues) perceive the click-through rates as confirmation, Ute “feels” her “specialist status” for good formulations.

Barbara is somewhat weaker in her personal relationship. This becomes clear when she assesses the intentions of the prospective customer to become a customer and aligns her writing behaviour according to it. Here the functional reference is strong (the recipient is a customer, should become a customer and “princess dreams” are not a communication topic, but exclusion criterion). With regard to personal relevance, Barbara’s writing world shows distinct features: she works intensively with her colleague on texts and exchanges ideas, she sees herself as “at the front” and, in her role in sales, almost emerges with a reflected self-understanding of her own situation.

Strong personal reference and a slightly weaker functional relationship can be seen in Horst and Petra. Horst reacts very strongly to the people of his working world – be it customers, colleagues and superiors, or his team. He also describes his own behaviour and actions in this context. He sees less the customer, he sees more of his own situation, in which he has to pay attention to his formulations and in which he – and above all else – has to function himself. Writing is not his real professional home, not his world and working in the department is not his choice. He wants to be honest, he is looking for closeness, he is looking for conversations and he wants to do honest business with good quality goods. He knows the function of the correspondence he has to write and seeks his own way out in the phone call. Petra also sees her own person in her actions, she reflects on her writing, distinguishes between “producing texts” and “writing”, she “hears” whether a text has been written by

copy and paste and therefore rewrites everything over and over again. She wants to sound personal (and not to be personal, for us that is the distinction between functional and personal reference); she knows that the students are also customers and, seemingly unimpressed by this, wants to reach the individual in such a way that he feels addressed by her in his situation.

Katja and Silke show a weaker personal and functional relationship. We can also group Elke here, whereby the functional reference is more apparent. Elke is relatively little related to people in her letter, many things run automatically and writing is less important than the phone call. She uses the automatisms of the formulations, trusts in their effectiveness and makes it clear that she does not have much time to think about writing and its effects. She assumes that her own mood of the day “certainly somehow” has an influence on her writing – and this becomes apparent to her, for example, when writing birthday wishes. The functional relationship is very pronounced at Elke, which can be determined, among other things, by statements such as “tasks have to be done”.

Katja, on the other hand, tries to establish a personal connection in her texts, to be empathetic, and researches for customer information, which she puts into the limelight accordingly in her correspondence. The information refers to business rather than personal details. She writes to companies and searches for the “final sentence” with which the customer feels individually addressed. Katja writes to be remembered – she tries to reach people because she means the company. She knows the effect of functions such as the inclusion of hierarchically defined structures when she has her letters signed by an authorized representative and is sure that this impresses the recipient side. Katja

wants her letters to sell. There is a manager who, as a sales manager and after competitive analysis, sees a way to increase the profile of the firm's offer in using customer letters as a means of differentiation from competition and designing them accordingly. "Be different from everyone else" – this is his credo, which accompanied the introduction of a new, customer-oriented writing style in the department. Initially, according to the manager, there was resistance. But with the training and practice of the new letter, security, routine and success had ceased and the resistance had subsided.

Comparing the also sales-oriented Ute with Katja, shows the difference in personal relations in the preoccupation with formulations and the exchange with others. Katja is also very "interested in humans", as she puts it herself. However, the exchange with others is hardly recognizable with her. The empathy in the letter that Katja's superior speaks of sounds like the result of a mechanical process to be rehearsed, not a confrontation with language and writing – Ute pays attention to formulations in order to "pick up" the customer; Katja strives to live up to the requirement to appear empathetic.

Silke, on the other hand, shows a somewhat more pronounced relationship to the person. There is her boss, whose role and behaviour she describes quite ambivalently, but who undoubtedly have a strong influence on her writing. After all, she is the client and signatory of Silke's letter to dentists. Silke adapts these letters only in the short description of the causes of errors – this is the personal touch of the letter for her. It works. The function of the recipient – customer dentist – she also sees, but shows little interest in it. She wants to give the dentist a personal atmosphere, albeit a short one. And she, according to my

impression, wants to pave a meaningful path for herself through a writing world always more or less content-like texts.

Another aspect distinguishes Silke from Ute. She “feels” and empowers herself as a specialist. Silke, on the other hand, remains cautious. She says that she can also sign the letters that the boss would otherwise receive for signature. Nevertheless, Silke also shows activities of self-empowerment when it corresponds directly with a trading partner without further controls or releases.

7. DISCUSSIONS

Observing writing means exploring subject-inner processes, with which internal and external influences are processed in such a way that the activity is carried out as it is carried out (Engeström 2010). The knowledge of writing is revealed in the activity “writing”. Participating writing observation is not an in-depth analysis, but it provides a deep insight. Precisely because Reinke did not just talk to the participants about their writing, but observed their concrete writing,. That leads to the realization that the key category cannot mean a single aspect, but can be understood more holistically.

The key category for a theoretical concept is therefore not “the acting person” or “the writing employee”, but: the writing subject. The “Writing Subject” represents the key category recognized in the material and founded therein for the understanding of writing processes commercially active in correspondence with customers.

The connection between object and subject is the activity, the activity-being. The understanding of writing is in the subjective

activity -being “writing”. This has to be considered more conceptually, and this is the key to further insights.

8. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH AND PEDAGOGICAL PRACTICE IN VET

What does the knowledge of the “writing subject” mean for vocational education? The writing subject exists, it is not a theoretical idea, but occupies a recognizable and important position in the activity systems of writing. So it is realistic for me to find the answer to my question at the beginning about the meaning by means of the references anchored in my material.

“Language is the tool of merchants,” claimed Kaiser (2013) o emphasize that it is not the accounting. With a view to this new study, we supplement: writing competence, formulation competence or word-choice competence in writing are expressions of their consciousness and thus more than a tool. This usually remains in operation after the end of the shift. Language can be used as a tool – and it stays the inherent property and means of communication of the subject and not under the power of disposal of an employer or client.

If we look at our field from the point of view of the opening question, we see two positions that we like to take up in order to find an answer:

There is the manager of Katja, KV, who sees the individuality of the commercial activity as one of the last remaining and decisive keys of competitiveness and market penetration. He says “empathy” and “individuality” – and thinks that they are trainable like the corner kick on the football field: he relies on

mechanical repetition and practice. But by no means: empathy and individuality are hallmarks of a development associated with self-reflection and subject orientation. Promoting this development, making it recognisable and tangible is pedagogical terrain. The second position from my material can be found at Horst: "Then I am really happy, [...] that I wrote it myself."

Personal feeling of happiness whether the experienced own formulation competence on the one hand, marketing desires against this individual resource on the other. Both need not be contradictory, but it raises the question of the orientation of vocational pedagogical activities: Are vocational education and training companions of individual formulation skills? To stay in the picture of KV, are they the football coaches? Are they both?

What happens to Horst when he speaks of happiness, we understand as experienced education, that is linked to Böhmers conception of aesthetics in education:

"A person's situational response to the impulses that reach him from the fields within the world. Education thus loses its tendency towards increase and perfection, but retains its style of confrontation with the other and the resulting effort to formulate appropriate and therefore: normative answers. Now, however, these answers are not universal reason in general, but those given situationally for individuals and their individual rebuttals." (Böhmer, 2012, S. 402)

In Horst's happiness lies personal reflection of one's own performance or activity, and it is obvious that this feeling of happiness will find self-taught development in being repeated. According

to our understanding of pedagogical action, vocational pedagogy has the role of the critical-subject-oriented reflection assistant.

The writing subject is in direct connection with the customer relationship competence . The described field of investigation covers exclusively actors in customer contact and shows that any ideas for customer relationship competence are tied to the individual actions of the subject, his ability to reflect and his biographical-socialisational imprints – all this must be incorporated into the pedagogical action if

“Professional qualification, necessarily oriented to entrepreneurial and technologically induced requirements, does not necessarily lead to adaptation-oriented teaching, so that it can be designed with reference to critical-subject-oriented theory”.
(Schapfel-Kaiser, 1998, 15)

It is therefore necessary to think from the subject and to integrate – at the same time – the forces of the professional and working world. Subject-oriented writing pedagogy is a field of development that wants to be developed. Finally some reflections and conceptual approaches to how writing pedagogy can be implemented in education and training are introduced:

Much more attention needs to be paid to the subject of “writing” in VET².

Two examples: The framework curricula of the Conference of Ministers of Culture in Germany for the vocational training of merchants for forwarding and logistics services and merchants

2 The young German-language science journal “Sprache und Beruf” can be a good starting point here.

for marketing communications do not know the term “write”. It is true that communication skills are of great importance in commercial professions. However, how the training is specifically concerned with writing, i.e. individual customer correspondence, is not specified in these curricula of commercial training, which are mentioned on behalf of further framework curricula.

Subject-oriented writing pedagogy means promoting the individual: in his writing and in the awareness of texts, for language in writing as well as for the writing activity itself. It is a pedagogy that recognizes and values the individual, which is based on the fact that writing is learned in commercial activity in an action-oriented manner, by writing in a reflective way in commercial activity.

Methodically, this means creating customer letters – in dialogue, in small group work, in which not only and abstractly speaking of writing, but instead writing concretely. If the trust allows, the actors can also watch each other and observe the personal writing processes. The methodological focus is not on sensitizing the text, but on individual writing. How does my classmate write? How does my colleague write? How do I write? The possible diversity of creativity of all participants becomes the formulation aid for all if the open exchange succeeds. Thanks to the exchange about writing, this very one becomes a reflected activity as a personal cultural technique and commercial identifier.

Such teaching is interactive in the peer-group and can develop and strengthen the individual's trust in his own literary abilities reflected and strengthen with this strengthening “to promote the representation of one's own self as a social identity that is based on interactions, corresponding to the world, which is the basis of all trust”.(Luhmann, 1968, 59). The world, also in the sense of the world of work and its requirements, is taken into

account and integrated; it does not mean navel-gazing and egocentricity, not objectification and alienation of language, but the constructive power of subject-based action.

Not only in times of increased home-office activities and the associated force to be left to one's own devices, the written language of office workers needs to be given considerably more attention. However, this is not in the sense of control or censorship, but rather as an aid, as advice on writing and articulation. The studies on the writing subject show that the ability to write is not automatically the same as the ability to write in a business-world oriented way. Even an appropriate writing training for the handling and use of "corporate language" only seems to make sense if it accepts and integrates the existence of the writing subject – the individual person. The written form of expression in professional life is – and this is shown by the people portrayed – always also an expression of personal understanding, of personal interpretation, when it comes to producing individual correspondence addressed to a specific client. The alternative to the implicit expenditure of training, accompaniment and advice are standardised text templates which cannot be adapted or can only be adapted to a very limited extent – these in turn bear the risk of imitation and thus the loss of a unique position – and are at the same time also the subject of interpretation by the employees working with them.

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Processing dropouts within professional development processes – a professional biographical analysis

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Abstract: When students decide to leave the university without any degree, they will face the challenge of arranging their vocational careers. While rates of dropouts and their reasons are known (Heublein et al. 2017), there are research gaps regarding whose individual consequences. The question arises, how college dropouts reconstruct their individual vocational careers. Moreover, there is a need to clarify, how young people identify themselves with their vocational development.

The vocational career of college dropouts has been collected by autobiographical narrative interviews (Schütze 1983) and based on procedures used in the Grounded Theory (Strauß & Corbin 2010; Tiefel 2005).

Within the survey can be identified three types of identity formation of college dropouts. They are different in procedures, subjective construction, structural incorporation and in regard to their views on their vocational career.

While vocational development of the *'identity realisers'* is characterized by optimization, the career of the *'diffuse'* college

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dropouts is based on adjustment. Contrary to this, a vocational career of the *'developer'* marked by a finding process.

Keywords: college dropouts, vocational career, biographical analysis, educational mobility

1. PROBLEM OUTLINE

Educational mobility is a declared goal of educational policy efforts (cf. i.a. Hemkes & Wilbers 2019; Frommberger 2019) and involves the ability of actors to connect to their structural environment (Dick 2009). At the structural level, the mobility or permeability discourse has shifted 'downwards' in recent years (cf. Jahn & Birckner 2014) so that 'dropouts' have increasingly become the focus of the higher education and vocational education and training systems. At the personal level, the concept of mobility interlocks individual mobility between (educational) activities. Both levels are thus interrelated (cf. Dick 2009): increasing mobility requirements at the structural level increase the demands on individual vocational orientation services (cf. Bergmann 2020). Even if, as explained in the recommendations of the Council of Science and Humanities, downstream 'shifts of interest or personal developments take place' and 'decision revisions or reorientations' (cf. Wissenschaftsrat 2014) are legitimised, it becomes clear that although the personal level of educational mobility is marked, the questions regarding transition opportunities are primarily discussed at the structural level. With regard to dropouts, the problem of the creditability and certification of the competences acquired in the course of studies, which are neither transparent nor individually usable for their future career paths (cf. Jahn & Birckner

2014), leads to a restriction of structural mobility. The reciprocity of both mobility levels nourishes the assumption that dropping out of a degree programme is also problematic at the personal level. In order to understand this personal mobility level and determine what biographical relevance dropping out has in the professional CVs of former students, it is necessary to utilise a subject-oriented perspective on dropping out. In this paper, we want to clarify how dropouts shape their career path despite a discontinuous course, what subjective patterns of interpretation and processing underlie this, and what significance the professional development has within their career path.

3. THE DROPOUT AS A RESEARCH TOPIC

In addition to various changes (e.g., at the technical or university level), dropouts are a characteristic of the student decline at universities (see Heublein & Wolter 2011). University dropouts 'are former students who began their first degree at a German university by enrolling, but then left the higher education system permanently without taking their (first) final exams' (Heublein et al. 2017, 273). The issue of dropping out of university is characterised by multidisciplinary and complexity and is mainly reflected upon through questions around scope, causes, consequences, effects, and prevention, although it is not always possible to clearly distinguish between these aspects (cf. Schröder & Daniel 1998). Although the scope is not determined on a federal and university-wide basis, it is determined at regular intervals by the German Centre for Research on Higher Education and Science in the form of dropout rates (see inter alia Heublein et al. 2017). For example, the average dropout rate for bachelor's

programmes at universities is 32% (see Heublein et al. 2018, 13). However, due to the wide variety of types of higher education institutions, degrees, and subject groups, the informative value of a generally applicable overall dropout rate is limited (see Bergmann 2016). With regard to the causes of dropping out of university, these have been thoroughly researched (e.g. Stegmann & Kraft 1988; Schindler 1997; Schröder-Gronostay 1999; as well as various DZHW studies since the 1970s). The question of the prevention of dropout is also increasingly being addressed by university research (e.g. Pohlenz, Tinsner & Seyfried 2012).

The consequences and effects of dropping out are relevant both in terms of education economics and the educational system. From the perspective of education economics, due to the logic of efficiency and effectiveness, dropouts represent a waste of resources or a 'misinvestment by the state' (Schröder & Daniel 1998, 13). From an education system perspective, a lack of 'downward permeability' between education subsystems can be seen (Jahn & Birckner 2014, 14). Skills acquired in university studies are neither certified nor usable for the labour market (see *ibid.*).

The systemic shortcomings in the transition from higher education to the training and labour market not only significantly limit the structural level of the concept of mobility, but negative effects for dropouts can simultaneously be noted at the personnel level (cf. Bergmann 2020). Above all, the education economics perspective, which is geared towards efficiency and effectiveness, presents the view that leaving university prematurely represents a 'failure' or 'wasted time'. This, in turn, creates the idea that dropping out of university is an 'expression of individual biographical failure' from the perspective of the individual as well (Heublein & Wolter 2011, 214). In contrast, from an individual perspective,

dropouts can also be seen as a 'biographical reorientation' (Ahles et al. 2016, 130) or as a possibility to correct or optimise an individual's educational path (cf. Meyer et al. 1999). Although it is known that 43% of those who drop out of university go on to vocational education and training and 31% pursue a career after dropping out of university (Heublein et al. 2017), a considerable research desideratum can be identified with regard to individual career development. Against the backdrop of the discussions around occupation and occupational status, it is important to clarify the role that prematurely leaving university plays for individuals within their occupational biographies and the extent to which dropouts can succeed in shaping their career path in such a way that dropouts fits into their occupational biography as a consistent development process.

3. PROFESSIONAL IDENTITY DEVELOPMENT

After completing their studies, dropouts are faced with the challenge of redesigning or restructuring their career path. It is undisputed that events and professional stages relevant to the professional biography, such as the choice of career or study (cf. e.g. Mischler 2017; Eberhard, Scholz & Ulrich 2009) as well as the premature termination of studies, 'reveal forms of orientation in the job' (Schaeper, Kühn & Witzel 2000, 94). In addition to an object side, the occupation also has a subject side, which deals precisely with these vocational orientation achievements of dropouts within their occupational biography. The occupation is a multi-layered and fluid construct whose meaning is balanced between occupationality and employability (see i.a. Kraus 2007).

With regards to the further professional development of dropouts, the question arises as to what effects dropping out – as part of the objectively discontinuous events in the life course – has on the professional biographies of individuals. With regards to the subject side of the profession, the issue is the subjective meaning of dropouts, which, in turn, is reflected in existing interests, inclinations, and the formation of a professional identity. If one understands vocational identity as a ‘fit between the subjective and the objective (the occupation) that can be created by the subject himself/herself by means of a learning process’, the question arises within the occupational biography of the dropouts as to what the ‘horizon of meaning of the occupation’ is (Unger 2008, 42). Thus, on the one hand, it is possible that the occupation within the biography of the dropout represents a construct that supports or produces meaning and identity, which (also detached from a formal qualification) functions as an orientation framework. On the other hand, it is also possible that the biography primarily has a gainful character (in the sense of the employability approach) in which occupational identification processes play a rather subordinate role (Bergmann 2020, 80f.).

This raises the question of the extent to which the two polarising perspectives can support each other or to what extent ‘occupationality, as the form underlying the occupation, can represent a bridge or bracket ... with which discontinuities in the course of employment can be integrated at the individual level’ (Tiemann 2012, 50). Even if occupational and employment biographies differ from one another – not only terminologically but also in terms of content – because of their disciplinary location, it seems reasonable not to regard the two as

competing biographical characteristics. Rather, it is advisable to use a time-adequate understanding of occupation as a link to legitimise (supposedly) discontinuous biographical courses. For example, it may be the case that the discontinuous occupational biography of dropouts objectively represents an employment biography, but the individual frames the biographical course as a coherent and consistent occupational biography (Bergmann 2020, 85). The individual's biography is not oriented to the concept of the steady life occupation due to the working world that is characterised by dynamisation and flexibilisation, but is characterised by changes and breaks; hence, the question arises as to how the subject can constitute his or her occupational meaning. It seems open to what extent individuals can succeed in creating an individual degree of continuity and consistency within the (individualized) biography and in establishing a professional identity despite objective discontinuities (here: dropouts).

Vocational identity formation represents a development process for the subject (cf. Haußer 1983; Marcia 1966) in which individuals are called upon to make decisions or to question given actions due to crises. The development of professional identity is a continuous process of balancing, in which the subject's consciousness of consistency, individuality, and continuity is at stake (cf. Hoff 1990). Crises are existential to this development process (cf. Erikson 1989; Marcia 1966) and do not necessarily have to have negative connotations or be identity threatening. Rather, the aim within vocational identity development is to critically reflect on certain vocational situations in order to make decisions regarding vocational development.

4. STUDY DESIGN

4.1 DEVELOPMENT OF THE RESEARCH QUESTION

The central question of the present study was developed on the basis of the theories of dropout on the one hand and professional identity on the other. Since the personal mobility level with regard to dropping out of university has not been explored in the research landscape to date, the present study takes a subject-oriented perspective and examines the professional development of former students.

In order to understand how the (objectively discontinuous) professional development of dropouts takes place and which subjective views as well as patterns of interpretation and orientation are associated with this development, the present study focuses on the professional biographies of dropouts. Consequently, the following question is the focal point for this study: which forms of professional identity development are present within the professional biographical reconstructions of dropouts?

4.2. DATA COLLECTION, FIELD ACCESS AND SAMPLING

The career histories of dropouts, which constitute the data source in this study, were collected by means of autobiographical narrative interviews conducted according to the method outlined by Schütze (1981, 1983). The autobiographical narrative interview generates narratives of personal experiences that represent both the factual actions and the recapitulation of the subject's experiences (cf. Schütze 1977). A total of 18 interviews with former students were conducted, with subjects being selected on the basis of theoretical sampling. Prerequisites were

that the students who had dropped out of the study programme had left the university at least 5 years ago without a qualification and had not obtained a vocational qualification prior to their studies. This prerequisite created the possibility for the drop-outs to reconstruct their individual professional career (e.g., in the form of vocational training and subsequent employment) as well as the associated experience stratification in retrospect during the autobiographical narrative interview.

The following table presents characteristics of the study sample, which can be considered heterogeneous overall. The heterogeneity is evident in terms of age, the number of semesters studied, the field of study, the professional qualification after graduation, and the current job. On the basis of the last two aspects, it becomes clear that different forms of withdrawal from the higher education system can be defined. Furthermore, all interviewees were integrated into the labour market, regardless of having obtained a vocational qualification or not.

Table 1. Study sample characteristics

Age	Semesters	Field of study (canceled)	Vocational training after studies	Activity at the time of the interview
Paul	31	7	teaching position	physiotherapist and teacher
Amy	32	16	teaching position	artist
Maria	32	17	sociology/ politics	Yoga-teacher
Bob	29	2	Southeast Asian Studies; informatics	computer scientist
Walter	34	11	law	senior position in the furniture industry
Sven	40	10	law	senior position in purchasing
Mark	33	13	sociology/ politics	construction mechanics
Lilly	27	2	art history/ musicology	photographer
Clemens	30	6	industrial engineering	executive in retail
Sabrina	34	13	sociology/ pedagogy; teaching position	retail salesman
Robert	24	1	mechanical engineering	industrial clerk
Brad	32	9	sports/ technology	retail salesman
Fiona	26	4	public administration	distribution
Simon	35	8	industrial engineering/ informatics	informatics
Mick	37	13	economics; pedagogy	informatics
Steffen	35	8	electrical technology	process mechanic
Susi	30	5	security and safety regulations	distribution
			wholesale and export trader	
			process mechanic	
			wholesale and export trader	

4.3 DATA ANALYSIS

The data analysis was carried out using the system of grounded theory (cf. Strauß & Corbin 2010; Tiefel 2005) as well as the biographical analytical method (cf. Schütze 1981, 1983). In the circular evaluation process, the coding paradigm adapted by Tiefel (2005) to educational biographical research was used. This approach makes it possible to highlight not only the production of meaning by the subjects (i.e., the dropouts), but also the structures or social frameworks surrounding the biography in order to ultimately draw conclusions about the concrete action activities (cf. Tiefel 2005). A total of four constitutive characteristics of a vocational biography were inductively generated from the material ('modes of action', 'level of sense/subjective interpretation', 'structural level', 'process level'). In order to operationalise these characteristics, different dimensions of comparison were extracted from the material for each characteristic by means of different coding processes that enable a comparison of the occupational biographical representations. Within the groups formed, the assigned cases were compared with regard to their internal homogeneity ('level of type'). In addition, the groups were compared with each other at the 'level of the typology'. The aim was, therefore, to highlight a sufficiently high degree of external diversity – that is, the variance of the types formed and an analysis of the contexts of meaning (cf. Kelle & Kluge 2010, 91 f.).

Within the circular evaluation process, the combination and relation of the different comparison dimensions led to the generation of the key category 'professional identity development'. This category is central and has a clear link to all occupational

biographical characteristics with their corresponding comparison dimensions. The identification of these characteristics is described below.

The biographical characteristic *modes of action* can be operationalised on the basis of the comparative dimensions *occupational biographical decision-making level* (1) and *dealing with crises* (2). The dimension *occupational biographical decision-making level* (1) describes the characteristics from individual cases that can be linked to occupational decisions (e.g., choice of study or occupation). A wide range of occupational characteristics (inductively generated from the material) can be identified (e.g., ‘acting vs. reacting’, ‘self-determined vs. externally determined’, etc.). The comparative dimension *dealing with crises* (2) presents the actions and reactions of the biographers within emerging crises (such as problems in studies; Marcia 1966). It is a crisis (on a deductively derived level) when there is a restriction of the person–environment fit (cf. Aymanns & Filipp 2009), when the subject perceives the crisis as such (cf. Whitbourne & Weinstock 1982), and there is a temporal limitation (cf. Ulich 1985). Insofar as the biographical carriers exhibit a sense of crisis, this can be described by means of the (inductively generated) characteristics ‘attack vs. defence’, ‘activity vs. passivity’ or ‘maintenance vs. collapse’.

The biographical characteristic *level of meaning/subjective interpretation* can be described using the comparative dimensions *perception of crisis and attribution patterns* (3) and *endowment with meaning* (4). The former (3) describes how biographers perceive crises within their occupational biography and how they subjectively frame critical events or successes that occur or to which they attribute the causes in this context. Both minor and identity threatening (i.e., serious) crises can be identi-

fied. Crises can be differentiated in terms of ‘internal vs. external,’ ‘specific vs. global,’ and ‘stable vs. variable’ attribution patterns (see Seligman 2010). The comparative dimension *endowment with meaning* (4) incorporates the meaning which the biographer assigns to his/her professional development. Thus, the question arises as to what meaning the individual establishes a relationship with (internal vs. external factors).

The characteristic *structural level* can be further defined by the comparative dimensions *occupational attachment and fit* (5) and *social attachment* (6). The comparative dimension *occupational attachment and fit* (5) combines those characteristics from the individual cases that can be linked to the fit between the occupation and the subjective ideas of the person who has a biography. Based on the multidimensionality of the occupational concept, the identity status model (cf. Marcia 1966), and the data analysis, three differentiations were made with regard to the occupation: the formal occupation (including a qualification that qualifies the person for the occupation), the external occupation (the occupation in which the biographer works without a formal qualification), and the internal occupation (the occupation that corresponds to the inclinations and interests of the biographer). Within the professional biographies, the commitment of the subjects to the formal, external, and internal professions was identified. The comparative dimension *social commitment* (6) describes the relationship or non-relationship with structure-giving significant others. Within the occupational biographies, the question arises as to what extent social actors are subjectively relevant for the biographer and play a significant role within the professional development (e.g., fellow students from university, family members, or colleagues).

The fourth occupational biographical characteristic of the *process level* can be described by the comparative dimension *concatenation of occupational biographical events* (7). This relates to how the individual represents the process character within his or her reconstructed biography – that is, the concatenation of entries, transitions, or changes as well as the process logic or dynamics. Professional development is about the subjective ability of the biographers to frame their professional development as a consistent or inconsistent as well as a continuous or discontinuous path (cf. Hoff 1990).

5. TYPES OF PROFESSIONAL IDENTITY DEVELOPMENT

Overall, three different types of professional identity development can be identified on the basis of the biographical analysis: ‘identity realisers’ (Simon, Bob, Lilly, Sven, Max, Mick), ‘identity diffusers’ (Paul, Sabrina, Fiona, Robert, Steffen, Clemens, Mark, Walter), and ‘identity developers’ (Amy, Brad, Maria, Susi).

5.1 TYPE 1: ‘IDENTITY REALISER’

Procedures – With regard to the comparative dimension *occupational biographical decision-making level*, ‘identity realisers’ within occupational development are characterised by decisions made in the area of conflict between self-determination, self-initiative, and achievements. The decisions are initiated by the subject and are made in a self-determined way. Although the actions of this type are not primarily intended but rather determined by what has been achieved, they are characterised by the active

action of the biographer. Professional options are accepted and used for personal professional development. In addition, alternatives are consciously weighed up. Decisions are made primarily on the basis of existing interests and inclinations. If crises occur within the professional development (*dealing with crises*), biographers actions are characterised by exploration – an active search or striving for professional alternatives. When crises occur, they influence the biographer's logic of action by using them to proactively compensate for their career choices.

Subjective interpretation – A characteristic of this type is that the professional development, which is interspersed, for example, with (study) discontinuations or changes, does not necessarily have to be crisis-prone in subjective perception. Although, objectively, there is a restriction of the person–environment fit, this mismatch does not represent an immediate crisis threatening identity. With regard to the dimension *attribution pattern*, this type is characterised by variability (internal/ external or global/specific). 'Identity realisers' follow their professional interest center from the beginning of their studies. Throughout their entire professional development, 'identity realisers' orient their actions along an inner, meaningful identification anchor (see *Meaningfulness*).

Structural level – Institutional professional opportunities and scope for development are anticipated and proactively exploited. In this context, the corresponding occupation functions independently of formal qualification as a subjectively significant construct on the one hand and a structure-giving framework for action on the other (cf. Unger 2008). Because of its identity-forming character, the connection to the occupation is very strong (see *occupational connection*). In this context, it is irrele-

vant for the subjective significance of the structure-giving occupational framework whether a formal qualification (for example, through the institutional framework of vocational education and training) exists. Both formally and non-formally qualified dropouts show an inner bond with regard to their externally practised occupation, which is decisive for occupational identification. In addition to the occupation as a construct that provides orientation and structure, social relationships (e.g., in the form of fellow students) that influence the professional development of former students are also relevant at the structural level (see *social ties*). The subject is characterised by a world view in which significant others act as social factors that provide orientation and support.

Process level – The ‘identity realiser’ type is characterised by a ‘random’ concatenation of career entries, transitions, or changes beyond the reconstruction of the occupational biography (see *Attitude towards concatenations of events*). Despite an objectively discontinuous course of occupational life, happy coincidences arise for the subject, which he or she uses for his or her own benefit, so that occupational development is characterised by a subjectively consistent, individualised, and continuous (reconstructed) view.

5.2 TYPE 2: ‘IDENTITY DIFFUSION’

Procedures – The *occupational-biographical decision-making level* of ‘identity diffusion’ is primarily characterised by occupational decisions, which are a reactive consequence of events without alternatives. Even if the decisions are made in a self-determined way, they primarily represent a way out of the respective sit-

uation in order to maintain the corresponding ability to act. The *handling of crises* is characterised by the defence or maintenance of the professional status quo. For the most part, there is no active exploration of occupational alternatives. Rather, the modes of action of the 'identity diffusers' are characterised by passivity.

Subjective interpretation – This type experiences crises as both minor and identity threatening and makes a variable attribution regarding the causes of critical situations. While the cases that regard crises as identity threatening attribute them externally and globally, those with a low sense of crisis are characterised by an internal and specific attribution style (see *attribution pattern*). The professional development of the 'identity diffusers' is characterised by a diffuse set of interests. Within their overall professional development, former students do not succeed in constituting an inner professional meaning. Rather, their professional development is oriented towards instrumental factors such as degrees or earning potential (see *making sense*).

Structural bonding – It is characteristic of this type that the actions always take place within a structure-giving framework. This institutional framework (e.g., studies or vocational training) has an orientation-giving and protective function. If 'identity diffusion' is forced to leave this framework (for differentiated reasons), they move into a new pattern characterised by security. The passively acting subject is thus controlled by external factors. Due to this passivity, the 'identity diffusers' do not succeed in subjectively binding themselves to the corresponding professional activity. Despite this lack of commitment, the 'identity diffusion' type requires an institutional stabilising structure within professional development. It is irrelevant for the subject

whether the structuring anchor is the formal occupation or the currently exercised activity (see *occupational attachment*). Despite the search for a structure-giving anchor, social relationships in the role of significant others are of rather secondary importance. The 'identity diffusion' type tends to show a low degree of social ties which influence the career path as orientation or support factors (see *social ties*).

Process level – This type is characterised by an 'incidental' chain of career starts, transitions, or changes. In the case of 'identity diffusers', who perceive crises as threatening identity, their professional career is not only on an objective but also on a subjective level an inconsistent and discontinuous path full of breaks and changes. In this case, the subject shows a feeling of division, being torn apart, and being interchangeable. Those 'identity diffusers' who interpret the situations within their professional development as slightly crisis-prone reconstruct their professional biography as a consistent and continuous path.

5.3 TYPE 3: 'IDENTITY DEVELOPER'

Procedures – Within the category *occupational biographical decision-making level*, decisions of this type are characterised by the change associated with them. While the professional decisions and decisions made before or during the course of study were primarily influenced by external circumstances (such as the lack of admission restrictions or the adoption of traditional family expectations) as well as by reactivity, and a conscious weighing of interest-based alternatives was not given sufficient consideration, the 'identity developer' type succeeds in changing to the adoption of a self-determined ability to make decisions

due to biographical turning points within their professional development. It is no longer a matter of reacting, but rather of conscious biographical acting, which is determined by interests and inclinations. While this type of behaviour is primarily passive in dealing with initial crises, a change to active exploratory behaviour is taking place within career development (see *dealing with crises*).

Subjective interpretation – Although there is a change in the way crises are handled, the corresponding attribution pattern is characterised by stability (internal and global). The professional development of the ‘identity developer’ type is predominantly characterised by a turning point which functions as a trigger for an identity development process. Following this biographical turning point, former students successively develop professional interests and inclinations in the sense of a professional constitution of meaning and implement these in their activities. The ‘identity developers’ thus succeed in developing a professional identity beyond their professional development.

Structural level – Within the occupational biographical course of the ‘identity developer’ type, the occupation, following the corresponding (implicit or explicit) turning point, takes on the function of a structure-giving framework for action. At the time of the interview, the vocational possibilities and scope for design were fully exploited and served as a basis for orientation. The subject and the corresponding occupation are characterised by a pronounced solidarity. In this connection, it is irrelevant whether a formal qualification exists for this occupation (see *occupational attachment*). While the connection to the occupational station of the study programme or with regard to social actors was rather rudimentary at the beginning of the

occupational development, both aspects are subject to a process of change so that the biographers exhibited a pronounced occupational or social connection at the time of the interview (see *social connection*).

Process level – Overall, this type of career path is characterised by an ‘elaborated’ chain of entrants, transitions, and changes. Although the professional development is not yet complete, it is to be expected that former students will frame their professional path as consistent and continuous due to the process of change. The beginning of their professional development (with their studies) is characterised more by disorientation and only changes with an explicit or implicit turning point that changes the trajectory of their career path in the direction of the corresponding opposite pole. Although this turning point objectively represents a break in the chain, the professional development throughout the process is perceived by the subjects as consistent and continuous.

6. CONCLUSION

From the results of this study on the professional identity development of university dropouts, it becomes clear that it is possible in various ways to shape the professional career of these individuals in such a way that it fits into their professional biography as a consistent development project. Some of the former students (‘identity realisers’) succeeded in constituting or continuously developing their professional identity, which is based on a professional identification anchor (‘identity developers’). However, there are career paths whose professional identity development is characterised by diffusion and an orientation

towards external factors, such as earning potential ('identity diffuse'). Regardless of the degree of professional identity development, however, it is clear that the subjects play a central role as creators and organisers of their own professional biography. Within their (objectively discontinuous) professional careers, they are continuously required to make full use of professional opportunities and orient themselves in order to be subjectively professionally compatible. It is thus clear that the professional biographies of the dropouts show personal mobility. Even if this career path can be viewed as a subjective and crisis-ridden failure, the biographical analyses nevertheless show that it can function as an identity developing (educational) process in which the subject embarks on a search for a professional identity. Irrespective of the connotations associated with one's own career path, it becomes clear that personal (occupational) mobility or subjective vocational orientation performance requires an intensive examination of one's own vocational identity.

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Importance of Peer Projects in Vocational Education and Training for the Development of Social Skills

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Abstract: Social skills promote the development of social relationships, school success and professional careers. In addition, they support the accomplishment of developmental tasks and personality development and empower people to successfully participate in society. This article examines the question of which social skills among apprentices can be promoted through peer projects in initial vocational education and training in Germany. A self-developed, theory-related dimensional model of social skills based on the work of Kanning (2002, 2005), Caldarella and Merrell (1997) and Baecker (2001) is used as an evaluation template. The work is based on a data set of 16 guideline-based interviews. The coding is carried out along the content-structuring qualitative content analysis according to Kuckartz (2016), so that the inductive-deductive procedure can be used to further develop the dimensional model and to work out the frequency of the individual upper and lower categories. The article concludes with a comparison of the (content-related) significance of the theoretically and empirically derived dimension model of social skills and its practical relevance for vocational educa-

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tion and training. In addition, concrete approaches (such as peer projects) for the promotion of social skills in the learning places vocational school and enterprise are presented.

Keywords: Peer Learning, Dimensional Model of Social Skills, Peer Projects, Vocational Education and Training

1. INTRODUCTION

Due to social and labour market changes, the promotion and development of social skills in vocational education and training appears to be even more important. At the same time, it is to be expected that the scope and characteristics of the dimensions of social skills will change in perspective and that their significance for vocational education and training will continue to grow. This is also because the development of vocational acting skills (“berufliche Handlungskompetenz”) is a goal of vocational education and training. The German Conference of Ministers of Culture (KMK) accordingly defines the term as the willingness and ability of the individual to act in a properly considered manner in vocational, social and private situations and to behave in an individually and socially responsible manner (KMK, 2007). According to the KMK (2007), vocational acting skills include professional, human and social skills. In addition, it can be assumed that social skills promote the development of social relationships, school success and professional careers. In addition, they help to cope with development tasks, contribute positively to personal development and enable successful participation in society. Their active promotion in and through vocational training would therefore have extensive positive consequences.

This article therefore examines the question of which social skills among apprentices can be promoted through peer projects (such as peer tutoring, peer education, peer mentoring) in initial vocational education and training in Germany. For this reason, the influence and significance of peer projects in vocational education and training for the promotion of social skills are of central importance to the interest in the findings. First of all, a dimensional model of social skills is theoretically derived from the work of Kanning (2002, 2005), Caldarella and Merrell (1997) and Baecker (2001) and empirically tested by means of guideline-based interviews in order to analyse which social skills can be further developed and promoted by the peer projects among the apprentices. At the same time, the model analysis enables the model to be further extended by the empirical data.

In order to support apprentices in the development of social skills within vocational education and training, forms of social interaction such as partner and group work are frequently used methods. Social interactions with reference persons have a positive effect on personal development. In this context, the consideration of peers seems particularly suitable for the conception of approaches to the promotion of social skills (Baecker, 2001). Peers become the central reference and orientation group in adolescence, particularly because young people identify with their peers, experience assistance and can support themselves in overcoming problems (Nörber, 2003a). For this reason, peer structures have become established as an essential component in teaching, learning and educational processes, as they are seen as a valuable support in mediating social-communicative processes. The advantage for young people is, that learning content can be communicated credibly and with greater emotional involve-

ment, which is also experienced as beneficial. Accordingly, peer projects can be seen as a method for promoting social skills, with the aim of transferring knowledge from young people to young people (Kästner, 2003).

For a better understanding of the research project, a short definition of central terms is given in advance. Peers usually refers to people of the same age, as well as to meanings such as “equal rank” or “equal status” (Naudascher, 2003a, 2003b). A peer group is accordingly to be understood as a group of people of the same age (Machwirth, 1980). In peer relationships, different variants can be distinguished, whereby the present study focuses on the form of organised groups (Krüger, 2016), which are characterised by a common task, e.g. in the form of school classes. The peer groups examined here are in the same year of their vocational education and training and are therefore of “equal rank” or “equal status”.

For young people, the peer group can be seen, besides family and school, as an educational instance that enables young people to acquire social skills as well as technical and professional skills (Harring, 2007). The peer group thus forms a learning environment for young people that can promote and cause informal learning processes (Schröder, 2007) and the development of social skills, including aspects of the ability to cooperate and deal with conflicts, the development and maintenance of social networks (contact care), as well as the ability to argue, cooperate and empathise, and also technical and subject skills (in the sense of cognitive performance) (Harring, 2007). Furthermore, young people in the peer group find support in relation to the pressure to adapt from adults, they experience stress relief and understanding for problems in the form of reciprocal encouragement.

Peers thus also play a socialisation role (Machwirth, 1980). They act as role models by imitating the behaviour of their peers through model learning and observations, which unconsciously influences their later behaviour. However, the peer group also enables recognition, confirmation, belonging and security (Naudascher, 2003a). In most cases, adults have little influence on peer groups, so that a protected space is created for young people to try out their skills. This makes it possible for them to develop and test their own behaviour patterns that deviate from adult norms and yet can be carried out without fear of punishment. Such experiences accordingly contribute to the development of the young people's identity (Machwirth, 1980).

Various peer learning approaches intend to use these resources for the targeted promotion of skills. These are programmes that relate to the skills development of peers by peers in order to make targeted use of the positive effects of peer interactions (Harring, 2007; Nörber, 2003a). In addition, Köhler, Krüger and Pfaff (2016) also underline the relevance of increased research into social interactions in peer groups and the development of action skills among young adults (Köhler et al. 2016).

For the purposes of this article, the terms “peer learning” and “peer projects” will be used synonymously; they are the collective term for the three approaches considered here: Peer Tutoring, Peer Mentoring and Peer Education. Peer tutoring is a method to support apprentices individually (Haag & Streber, 2011). Young people of the same age work in tandem to repeat and deepen vocational knowledge together. One person assumes the role of the teacher or tutor, the second person the role of the learner (Tutand). The teacher has the task of transferring and checking knowledge and correcting the answers of the learner. This form

of collaborative learning can be a supplement to general teaching (Haag, 2014). In reciprocal partner work, the roles of teacher and learner are changed after a certain period of time, so that each young adult can always test himself in both roles. Within a class, the tandems are also constantly being remixed, so that everyone forms a tandem with every colleague at some point.

In the peer mentoring approach, third year apprentices were chosen as mentors, who then supported second year apprentices in their exam preparation. The election was carried out by their colleagues in the apprenticeship from the same year. They were asked who they would consider suitable from their own apprenticeship year to help the younger apprentices with their learning. (The option of self-nomination was not prohibited). According to Hattie (2015), it can be assumed that older learners provide younger learners with technical and social support and thus promote the development of personal, emotional, cognitive and psychological aspects (Hattie, 2015).

For the peer education approach, second year apprentices, following the same election procedure as for peer mentoring, chose educators from their own year of apprenticeship to help them prepare for the intermediate examination. This enabled apprentices of the same age to offer each other support and assistance (Nörber, 2003a). In the two approaches of peer mentoring and peer education, a small group tries to provide a larger group with information on a specific topic and to initiate successive learning processes (Apel, 2003). As a preparation, the elected mentors and educators received training prior to the project implementation to prepare them for their upcoming task.

The aim is to turn the educators and mentors into experts in mediating problems and conflicts, transferring knowledge and

modifying behaviour and attitudes by communicating with each other at equal level (Nörber, 2003a). The use of peers as teachers can succeed because it is expected that young people can more easily adopt ideas from their peers than from adults, since they are in the same life situation and are therefore better able to put themselves in the other person's position. In addition, there is already a certain basis of trust in a peer group that does not have to be acquired first (Schröder, 2003). Nevertheless, it is to be expected that the teachers, i.e. the acting peer educators and peer mentors, are the ones who experience the greater acquisition of knowledge and skills through the peer projects than the learning target group, due to their more intensive involvement in the planning and implementation of the peer projects (Nörber, 2003b).

2. THEORY AND METHODS

2.1 THEORY

In this chapter, first a definition of social skills is given and then the theoretical model of the dimensions of social skills is presented. At the moment there is no uniform definition of social skills. However, if the definitions of Kanning (2005, 2009), Hinsch and Pfingsten (2015), Greif (1994), Schmidt-Denter (1999) and Roth (1971) on the concepts of "social skills" and "socially competent behaviour" are compared, similarities can be identified: Social skills are described as the abilities, capabilities and/or behaviour of a person. Socially competent behaviour always takes place in social contexts, whereby a person's own interests take centre stage and the interests of the interaction partners must not be neglected in order to achieve peaceful

coexistence in a compromise based manner. On the basis of the various approaches to definition, the following working definition results for the present article:

The term “social skills” is to be understood as a multidimensional construct and subset of skills, which includes knowledge, as well as various abilities and capabilities of a person in the form of behaviour. The aim is to be able to realise the own needs, wishes and interests of a person in social interactions, taking into account the interests of the interaction partners, in order to make living together in social contexts appropriately positive for all participants in a cooperative and compromising way.

Based on the work of Kanning (2002, 2005, 2009), Caldarella and Merrell (1997) and Baecker (2001), the dimensional model of social skills is derived in the following.

According to Kanning (2005) social skills are seen as a multidimensional concept, which is composed of several partial skills. The behaviour of a person is thus not shaped by one skill, but by the interaction of several skills (Kanning, 2005). Kanning developed 15 skills, which he initially assigned to three different areas: the perceptive-cognitive, the motivational-emotional and the behavioural area. From these 15 skills he further identified five dimensions of second-order social skills: social perception, behavioural control, assertiveness, social orientation and communication skills (Kanning, 2002, 2005, 2009). Caldarella and Merrell (1997) also identified five dimensions of social skills: Peer relations, self-management, academic, compliance and assertion (Caldarella & Merrell, 1997). In addition to these

approaches, the dimensional model analysed here should have a school-based reference, which is why reference is made to the preliminary work of Roth (1971) and Baecker (2001). They see the ability to cooperate, the ability to deal with conflict and the empathy ability as the essential aspects of school-based promotion of social skills (Roth, 1971; Baecker, 2001).

The comparison of the three models shows some similarities, but it also shows considerable differences in the naming and assignment of the dimensions. In contrast to Baecker's model, both Kannings, Caldarella and Merrell's model contain five dimensions. In addition, Kanning's model contains the dimension "communication skills", while Baecker identifies communication as a prerequisite for being socially competent. In order to continue this and to order it as the basis of this article, a separate dimensional model is created on the basis of the three models (see Figure 1):

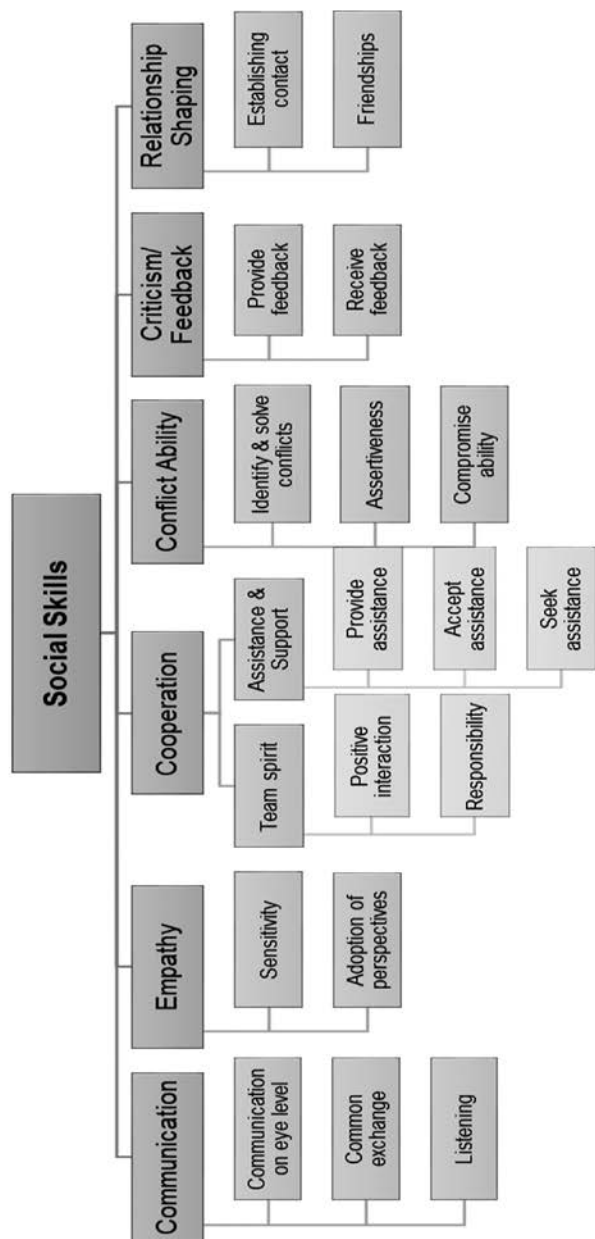


Figure 1: The "Dimensional Model of Social Skills"

With the theoretical development of the model, an attempt was made to combine the different approaches. Thus, some dimensions were adopted, some sub-capabilities of the individual dimensions were regarded as separate dimensions or subordinated to other dimensions. It should be noted that the dimensions named here are interdependent and should not be considered separately. In order to be able to solve conflicts, for example, communicative skills are necessary. Similarly, cooperative behaviour requires the ability to compromise, so the multi-dimensional concept of social skills, as Kanning (2005) calls it, only emerge through the interaction of the several sub-skills.

The high relevance for the active support of social skills seems to be obvious, especially when considering the consequences of the lack of these skills. This is because young adults who only have insufficient social skills sometimes face additional difficulties in their personal, professional and social lives. They fail more often at school leaving examination, in the search for an apprenticeship place or within vocational education and training. They also have difficulties in building relationships based on partnership or in assuming socially relevant roles (Jugert et al. 2009). Social skills are necessary in order to be able to interact successfully in private, at school and at work. They promote the development of social relationships, school success and professional careers. In addition, social skills enable the development of one's own personality in order to be able to act independently and self-confidently and enable them to live, work and take responsibility in the community in order to participate in social life as active citizens (Faix & Laier, 1991).

The increased interest in social skills and a growing importance of social relationships for young people illustrates the rel-

evance of further theoretical discourses and empirical findings. Especially since peers have a crucial role to fulfil in social development (Baecker, 2001). Thus, conceptual questions and problems of diagnostics are probably unsolved because there is currently no generally accepted definition of social skills nor an empirically based framework model (Wolf, 2003; Süß et al. 2005). This suggests that there is a need for further research, which is addressed in this article. The aim is to investigate the extent to which peer projects can contribute to the development of social skills of apprentices in vocational education and training in Germany. The importance of this question is also relevant because one of the tasks of vocational education and training is to foster social skills of apprentices and ensure the development of vocational acting skills. For this reason, the promotion of social skills is named as an educational goal in curricula (Baecker, 2001).

2.2 METHODS

In the further course, the informal learning processes as well as the social interactions of young adults within the peer projects in vocational education and training will be examined in order to ascertain what further developments the young adults were able to identify in themselves and in the group with regard to social skills which in turn contribute to the acquisition of the ability to act. In addition, the effectiveness of the theory-based dimensional model of social skills in relation to the peer projects will be empirically tested with regard to its applicability and its extension or reduction by several dimensions.

Before presenting the results of the study, the methodological procedure should first be described. A total of 42 interviews

were conducted with apprentices in various vocational education and training professions as part of a larger research project. From these, 16 interviews were selected for this article. These interviews were considered to be particularly revealing and varied for the dimensions of social skills. Methodologically, the selection of the cases was based on the strategy of targeted sampling (purposive sampling) according to Patton (2002). The 16 interviews considered (six female and ten male apprentices) were distributed among five different institutions (including three enterprises and two vocational schools), seven vocational education and training professions and three forms of peer projects (peer tutoring, peer education, peer mentoring). Furthermore, interviews with peer educators, peer mentors and peers from the target group (learners) were selected. Participating in the interviews was voluntary on the part of the apprentices and therefore required their willingness – sampling by self-activation according to Reinders (2005). The methodological approach of data collection was based on the problem-centred interview by Witzel (1982, 2000). In the face-to-face interviews, subjective views (Flick, 2009) and assessments of the interviewees regarding the process, content and subjective experience of the peer projects were examined. To this purpose, the respondents were asked to recall and recount events during the peer projects.

The coding and analysis was carried out along the content-structuring qualitative content analysis according to Kuckartz (2016). The inductive-deductive procedure allowed the further development of the dimension model. With the deductive approach, categories are created independently of the data material, whereas with the inductive approach, categories are created directly on the material (Kuckartz, 2016). Frequently, superordi-

nate categories are created deductively and sub-categories inductively, but it is also possible to build sub-categories before the material is viewed on the basis of prior knowledge. Similarly, superordinate categories can be added inductively if aspects are discussed during the material review that were not considered beforehand (Schreier, 2014). Accordingly, the dimension model of social skills functioned as a preliminary category system. The dimensions of social skills formed the upper categories and the various sub-dimensions the sub-categories. In the first phase of the project, the categories were created on the basis of theories, then the data material was entered and roughly coded along these categories (Kuckartz, 2016). In a second processing phase, the categories were further developed and differentiated inductively on the material, so that the data material was coded through again until no new categories were found or discovered.

According to Kuckartz (2016), the further evaluation was based on the category-based analysis along the main categories of social skills and arranged them in order of frequency (Kuckartz, 2016).

3 INTERPRETATION AND ANALYSIS

In this chapter the upper and lower categories of the dimensional model of social skills are presented, which could be identified from the material. The structure of the chapter is structured by the upper categories “Communication”, “Empathy”, “Cooperation”, “Conflict Ability”, “Criticism/feedback” and “Relationship Shaping”. In addition, for each sub-category, a sample sentence from one of the interviews is presented for better understanding. The arrangement of the upper and lower

categories is based on their frequency in the existing material. In addition, subcategories are presented which were developed (inductively) from the data material.

3.1 COOPERATION

The upper category of cooperation, to which most of the interview statements could be assigned, consists of two categories, which in turn comprise further sub-categories. “Assistance and support” is divided into three sub-categories: “Provide assistance”, “Seek assistance” and “Accept assistance”. The “Team spirit” is also composed of three sub-categories: “Positive interaction”, “Responsibility” and “Solidarity”.

“Provide assistance” means the willingness to give help and support to other apprentices if they have questions, but also to approach others in order to help, and to be happy to be able to help others and to want to help (example sentence: *“So where can you support if someone has problems and so that you don’t wait for them to come to you and say: ‘Yes, I have a little trouble here and here. But that you then also act independently as, I say mentors, uh, ‘approach them and then support them there’”*³; male, peer mentor).

“Seek assistance” means the willingness to turn to others when problems arise, the certainty of being able to ask someone for help and a reduced inhibition threshold to ask others for help that one might not have addressed before (before peer learning) (example sentence: *“And that one notices that when one*

3 The interviews were conducted in German. The original sentences from the interviews presented here have been translated by us into English for this article and some of them have been linguistically adapted beforehand.

has problems, one can go to someone. To the older person from the apprenticeship"; male, target group/learner).

The category "Accept assistance" illustrates the ability to accept support from others and to take the advice into account (example sentence: *"Just as the uncritical [smiles] you are happy if they accept help"*; female, peer mentor).

With the dimension "positive interaction" is meant to solve tasks or problems together, to work together, to help each other, whereby each group member recognizes the importance of his or her own contribution to the achievement of the goal, in the sense of teamwork (example sentence: *"They all supported each other a little bit, I liked that very much, that they worked together as a team. For example, one of them had a bit more difficulties there, then the others helped a bit, so that we as mentors did not stand there completely alone, but supported the apprentices among ourselves. And, in my opinion, it got better over the week that they worked independently as a team, which was really good"*; male, peer mentor).

According to the wording, "responsibility" includes taking over responsibility, e.g. for one's own subtask and completing it or feeling responsible (example sentence: *"The mentor took everything into her own hands and said: All right, we'll book the room and then we'll do it like this"*; male, target group/learner).

The subcategory "Solidarity" deals with the group's or individual's behaviour in solidarity to help the weaker ones, nobody should be left behind, in this way one's own needs can also be put aside to help other apprentices (example sentence: *"Well, we have one with us in the apprenticeship year who is a bit slower, who is now a lateral entrant, who has not been with us from the beginning. And he was very, very slow towards the beginning. And*

we noticed that at the beginning. Then we just talked about it again in the group. How they see it and what we expect the best or a little bit, that we all support a little bit”; male, peer mentor).

In the peer projects the willingness to give help and support to others was very high among the peer educators, peer mentors and the target group. The young adults were always ready to help and support others in case of questions, problems or difficulties and even enjoyed doing it. The interviewees also report that through the peer projects the willingness to provide help and support has increased, so that as a result, apprentices who previously had little contact with each other also help each other. The young adults stated that they were not reluctant to seek help and support from others within the peer projects. The willingness to help each other was also there before, but this willingness has increased again through the peer projects. The increased willingness and openness to address each other was explained by the peers of the same age. They experienced it as reassuring in the Peer Projects that they could turn to someone at any time for advice.

Furthermore, the Peers confirm a positive interaction during and after the Peer Projects, especially by helping each other and jointly dealing with audit or work tasks and problems. Respondents also noted a change in work attitudes, as the class was more open with each other. Through the initiated cooperation and reciprocal support during the peer learning, the ability to work in a team also improved and the apprentices looked forward to the examinations in a more relaxed mood, because they experienced how they could rely on each other and had helped each other.

The apprentices also noticed that they showed solidarity within the peer projects, e.g. apprentices asked the teacher

anonymously for a classmate who did not dare to ask by himself. Other apprentices helped a colleague who was slower in completing the task. The whole group paid more attention to their colleagues by taking care of those who were not doing well, so that nobody was left behind and all apprentices could be at the same level of performance.

3.2 COMMUNICATION

The communication dimension comprises the subcategories “Questions”, “Common exchange”, “Communication on eye level”, “Talk to each other”, “Plan and moderate conversations” and “Listening”.

The subcategory “Questions” means daring to ask other apprentices questions when problems arise (also outside of class and at work) but also to answer the questions of others (example sentence: *“Well, we, as I said, have all become a bit more open, I think. That they, um, also ask someone else’s questions. Well, not my girlfriend sitting next to me, but also the one behind or in front of me, I would say”*; female, peer educator).

The “Common exchange” includes the exchange of thoughts, feelings, opinions and professional topics in the whole group, or even in pairs. This includes aspects such as reciprocal explanation of professional topics or joint practice (example sentence: *“Yes, the togetherness that one could talk openly, that one simply stimulated a discussion. I liked that, too, because that’s what you learn most when you discuss with others and think about it yourself, and how does it actually work now”*; female, target group/learners).

“Communication on eye level” means the interaction on the same level, and the aspect or the expectation that apprentices

can explain better and communicate more relaxed because of the same age (example sentence: *“That one could simply ask questions and was not so inhibited and that one was simply at eye level, on one level, so to speak, and thus could simply, yes, speak more freely and simply dared to ask more questions than when a senior physician is standing there and one is a little more inhibited, yes”*; female, target group/learner).

“Talk to each other” means that, after the respective peer project, more was talked to each other than before, including private topics of conversation, as well as an increase in openness in communication in general (example sentence: *“I think for them it was also like this as a group, that they simply talked more about all kinds of stuff”*; male, peer mentor).

The sub-category “Plan and moderate conversations” takes into account statements made by the apprentices in their communicative preparation for the peer project, such as, for example, consultation with the full-time vocational instructors, with other apprentices or the preparation and discussion of a work plan (example: *“Well, we always agreed what we would like to do the next day with those with the apprentices and we always made a rough plan”*; male, peer mentor).

By “Listening” we mean aspects such as being attentive, listening to others, letting others finish and not interrupting them (example sentence: *“Simply that they never interrupted us when we were talking. Always listening, always waiting until we were finished, only then saying something”*; male, peer mentor).

Overall, the peer projects were able to contribute to becoming more communicative in dealing with questions. Above all, the presence and availability of the peer educators and peer mentors were positive for the target group because they knew

that they had a contact person to whom they could turn in case of questions, problems or uncertainties. This was also due to the great willingness of the peer educators and peer mentors to clear up ambiguities and answer questions in detail. However, it was not only the peer educators and peer mentors who were addressed by questions, but also the rest of the classes. In addition, the inhibition threshold to approach instructors has also fallen. In addition, apprentices within the peer group were also approached reciprocally who had previously had less contact with each other. Accordingly, peer projects can help to deal with questions more openly, as there is certainty that they will be answered by both, individuals and the group as a whole.

Furthermore, the interviews showed that the peer projects also fostered reciprocal exchange. The young adults prepared together for the upcoming exams by exchanging professional information about possible exam contents, discussing old exams or trying out technical discussions. In addition to technical content, new learning methods were acquired through the common exchange. The peer projects have also made the young adults more open to communicate their own thoughts, experiences, opinions and feelings. The promotion of common learning and more intensive communication, even without the presence of a teacher, was particularly beneficial to those who had previously been less socially integrated in the group and who tended to hold themselves back.

The improved learning activity arose mainly because the young adults were in the same age and thus on the same level, which simplified reciprocal communication. In case of problems or uncertainties, young adults find it easier to talk to someone in the same age than to an adult instructor. The interviews also

confirmed that young adults prefer to address peers because they are in the same situation in life, they have the same problems and can understand them better.

3.3 RELATIONSHIP SHAPING

The category “Relationship shaping” consists of seven sub-categories: “Group atmosphere”, “Establishing contact”, “Group cohesion”, “Motivation”, “Respectful interaction”, “Appreciation” and “Friendships”.

“Group atmosphere” refers to the atmosphere within the group during and after the peer projects, this refers to the cooperation, the working atmosphere and the interaction with each other (example sentence: *“Very relaxed and it was a nice atmosphere, everything was much more relaxed and not as exhausting as in class, so you could talk about it in a relaxed atmosphere, also because it is simply the classmates and the friends, you know each other and could discuss well, you could ask questions, it was a pleasant atmosphere. Just not this stupid school learning”*; female, target group/learner).

“Establishing contact” includes approaching other apprentices, making contacts and getting to know each other, this also includes the development of professional or private contacts (example sentence: *“So just because you got to know each other better that way, that was perhaps something good in retrospect now”*; male, peer mentor).

“Group cohesion” means the cohesion of all apprentices in the respective learning group, in the sense of strengthening class cohesion (example sentence: *“That it really does strengthen cohesion. That you just know that it is ok, you can talk to him,*

he will explain it to you again without being looked at stupidly or being annoyed. And that's really a great thing"; male, target group/learner).

"Motivation" means, on the one hand, to be more motivated to learn, but also to continue the peer projects and to motivate other apprentices to learn (example sentence: *"And I think you are a bit more motivated to do something for school, because you are not doing it just for yourself, but a bit for everyone"*; female, peer educator).

The category "respectful interaction" combines quotations of statements in which other apprentices were treated with respect, such as fair interaction and increased respect for other apprentices (example sentence: *"They were now respectful as well. That was very good"*; male, peer mentor).

"Appreciation" is when an apprentice is appreciated and accepted by another person or is accepted as he or she is (example sentence: *"The appreciation from my colleagues, that has increased as a result"*; male, target group/learner).

"Friendships" is defined, if friendships have been formed or consolidated through the peer project (example sentence: *"Yes, a little bit of friendship has been formed. Yes, we can invite each other to a birthday party or something"*; male, target group/learners).

Differences in the group climate between the individual learning and project groups were observed during the peer learning process. The majority of the respondents stated that during the peer projects a relaxed and friendly working atmosphere was created in which nobody was afraid to work with others. It was an advantage that peer learning was a change from regular lessons and work, so that it was perceived as less strenuous. Only in two peer education groups was it not possible to create a positive

working atmosphere due to unresolved conflicts and tensions in the two respective classes, partly because individual peers (intentionally) disturbed their classmates in the concentrated cooperation. Nevertheless, the young adults overall said that they experienced a lot of fun and joy during the peer learning.

The group dynamics could be sustainably improved because the apprentices knew that they could turn to each other in case of questions or problems. This could additionally ease up the group atmosphere. In this way, the awareness of being able to help each other and being well prepared developed, which is why the apprentices could take their exams in a more relaxed way.

Peer learning also helped to increase the contact between the apprentices. The peers reported positive developments, getting to know each other better and establishing new contacts through the peer projects. They also understood each other better after the end of the project. Accordingly, the peers reported that they found it positive to spend more time together again within the peer projects, to develop a closer relationship with one another and to be able to laugh together. As a result, professional and private contacts were expanded and strengthened, and some young adults met outside of class after the end of the project to spend time together and to learn together for the exams.

Accordingly, the majority of young adults report that the peer projects have strengthened cohesion. They concluded by describing peer learning as a group-strengthening and team-building measure. This was achieved in particular through communication on eye level and the realisation that they could ask each other for help at any time.

In the two classes in which the peer education projects were only partially accepted and used by the apprentices, correspond-

ing positive and negative statements were made about cohesion. Thus, it can be stated that peer learning can contribute to strengthening the group, but there is no guarantee of this. If class-internal conflicts have existed for a long time, peer learning has not been able to solve them either. During peer projects, however, there is a strong cohesion in the group if they pursue a common goal.

3.4 EMPATHY

The upper category Empathy comprises three subcategories: “Personal feelings”, “Sensitivity” and “Adoption of perspective”.

The subcategory “Personal feelings” characterizes the perception of one’s own feelings as well as the ability to understand and express them (better) or to communicate them to others (example sentence: *“And that is a nice feeling, when others approach you like this, you think like this, I make a competent impression or they trust me”*; female, peer mentor).

“Sensitivity” means being able to put oneself in the thoughts and feelings of other apprentices, to have understanding for the feelings of other apprentices and to understand their emotional problems (example sentence: *“One understands one’s colleagues better in some situations now, let me put it this way. When they come to work in a bad mood”*; male, target group/learner).

“Adoption of perspectives” on the other hand means putting oneself in the position of other apprentices and understanding their views, e.g. the role of the full-time instructors (example sentence: *“Yes, I found it particularly positive to have slipped into the role of instructor, to have seen the whole thing from a different perspective, to have been in a position to communicate things to other people or other apprentices again”*; male, peer mentor).

The interview partners reported through or within the peer projects that they were more aware of and understood their own feelings and thoughts and were able to express themselves better. They noticed such changes in themselves and in their relations with other apprentices. The peer educators and peer mentors enjoyed helping other apprentices and noticed an improvement in the learning behaviour of their classmates. It was also a good feeling for them to know that their fellow apprentices had elected them and trusted them. This together strengthened their self-confidence and confidence in their own abilities (self-efficacy).

In addition, the peers learned to reflect on their own social skills and to get to know themselves better in the projects. They found that they had become more open-minded and relaxed towards other apprentices and were able to help them even if they did not know them well before. Likewise, they would now take more time to help others because they can better understand the emotional state of the other apprentices and show more understanding for each other, e.g. when someone is stressed or has a bad day.

3.5 FEEDBACK

“Feedback” is not divided into further subcategories.

The dimension deals with the ability to accept constructive criticism or feedback from other apprentices, to receive or give it and to ask for it (example sentence: *“Well, everyone saw everyone else this way, everyone also looked. So if something wasn’t clear to me or my classmate: “Hey, come here please! Is that right?” “Yes, everything’s fine. You can go like this.” So, that’s what I mean.”* (male, target group/learner).

Compared to the other dimensions, fewer answers were assigned or coded to the Feedback dimension. However, the interviews showed that the target group/learners as well as the peer educators and peer mentors give and accept feedback. No criticism was expressed. Rather, the peers gave each other positive feedback and showed each other tips and advice, e.g. how to achieve better results in an examination situation.

3.6 CONFLICT ABILITY

Three sub-categories are grouped under the category “Conflict Ability”: “Identify and solve conflicts”, “Assertiveness” and “Compromise ability”.

The category “Identify and solve conflicts” deals with the (timely) recognition of conflicts and overcoming them through constructive conflict resolution. The problems can concern the group organisation, the working atmosphere or the way of treating with each other (example sentence: *“Well, we had some tensions in class. That two groups have formed. And it’s always difficult to interact with them, but we had the idea that we would simply try to mix the groups. That the people who are not always in the group are not always those who are usually in a group. But, that was a bit the problem”*; female, peer educator).

“Assertiveness” means the ability to achieve one’s own goals and to represent one’s own opinions and points of view, including giving instructions and guiding groups (example sentence: *“Because otherwise you were always the one who had to do something, but this time you were in a position to tell them what had to be done now”*; male, peer mentor).

The “Compromise ability” takes into account the ability to social exchange and to consider the interests of other appren-

tices, so that a common agreement can be reached (example sentence: *“Because you always have the different priorities. And it was still normal teaching. The first year of apprenticeship was still there. And then you always had to come to an arrangement. I think you only had two or three welding booths for five or six people. But everyone always does something different, so that it was always possible to change, so that a continuous station operation took place”*; male, target group/learner).

Not all respondents commented in the interviews on aspects that could subsequently be assigned to this upper category. Nevertheless, the majority of respondents reported that they had identified conflicts within the peer projects and had searched for constructive conflict solutions. It should be noted that no major disputes or disagreements arose during the peer learning process, but rather mainly minor issues. In two similar classes, in which the peer education approach was carried out, however, internal class conflicts occurred which had already existed before the peer project. This led to a separation of the group in both classes and peer learning did not bring about any improvement. The peer educators tried to overcome the tensions, but some apprentices were not interested in the project and their behaviour disturbed the concentrated work of their classmates. So it can be stated that although the apprentices are able to recognise conflicts, they could only partly overcome them by constructive conflict solution. This was also due to the fact that some peer educators were uncomfortable to intervene and admonish their classmates if they did not want to cooperate or learn together.

4. DISCUSSION OF THE RESULTS AND FURTHER DEVELOPMENT OF THE DIMENSION MODEL

To summarise, it should be noted that the peers further developed their communicative interaction with each other by now approaching others more openly and uninhibitedly to ask questions or answer the questions of others. In addition, the peer projects created free time for professional exchange, common learning and cooperative exam preparation. Along with communication on eye level, it was easier for the young adults to approach their fellow apprentices because they were in the same life situation and in the same age. This was one of the reasons why they were able to communicate more easily with people with whom they had less contact before. This enabled the apprentices to behave empathetically and reveal their own feelings to each other. This enabled the apprentices to understand and get to know each other better. As a result, the willingness to cooperate within the peer projects was strengthened, especially as the peers had helped each other with questions, problems and uncertainties. This is one of the reasons why many young adults found it easier and more open to ask others for help and to accept the support of others through peer learning, because there was a great willingness to help each other. This also improved the ability to work together in teams in many of the classes. Solidary behaviour was also evident, as consideration was given to individual lower-performing apprentices and they received support.

The research question of this article was to analyse which social skills can be promoted through peer learning among apprentices in vocational education and training in Germany. In

addition, the theoretically derived dimensional model of social skills should be empirically validated and, if necessary, extended. In summary, it can be stated that the young adults interviewed were able to expand their social skills through the peer projects. This showed, as Nörber (2003b) expected, that the peer educators and peer mentors could potentially benefit more from their active role and participation in the peer projects in the development of social skills than the learning target group.

In the introduction and in chapter 2.1, the lack of an empirically based dimensional model of social skills that includes all potentially relevant dimensions was objected. A further research aim of the present study was therefore to empirically verify our own theoretically based dimensional model. The evaluation was able to confirm the applicability of the social skills model because it can be applied along the peer projects in vocational education and training and also because the sub-categories could be confirmed by interview statements. In addition to confirming the model, new subcategories were identified on the data. Thus the model of social skills, which was empirically adapted to the data, includes additional sub-dimensions. The model in Figure 2 should be regarded as the theoretical-empirical result of the present study and it also reflects the frequencies of the individual categories of social skills in the arrangement of the subcategories (from top to bottom) and the arrangement of the upper categories (from left to right).

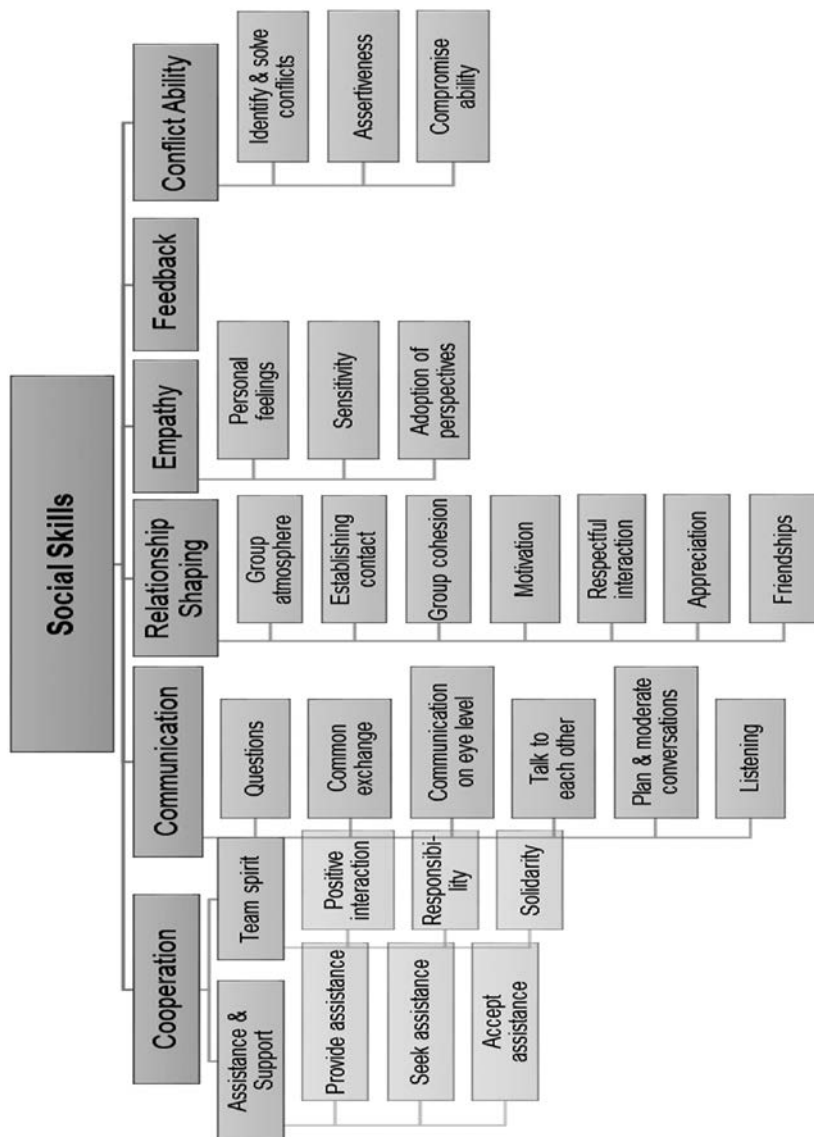


Figure 2: The empirical-adapted "Dimensional Model of Social Skills – DMSS"

5. CONCLUSION

In summary, it can be said that the young adults were able to develop their cooperation and communication skills, as well as their ability to build relationships and empathy, through the peer projects. The ability to give, take and obtain feedback as well as the ability to deal with conflict could also be improved, but to a lesser extent than the first mentioned dimensions, so there is still a need for improvement. However, it should be noted with limitations that the young adults already possessed social skills before the peer projects, but they were able to use these to expand and consolidate them.

It should also be noted that the cases examined were selected by means of targeted sampling and an attempt was made to achieve maximum variation by means of defined criteria (Flick, 2009). This approach has been confirmed. However, and this should be noted as a limitation, the cases were selected positively. A potentially larger data set would have made it possible to obtain potentially more differentiated findings, especially in the developmental trends. In addition, it could have increased the quality of the process of coding the interview material, if at least two persons had coded independently (Kuckartz, 2016). This could potentially have led to a shift in the frequencies of individual subcategories and improved the reliability of the individual coding. It would also have enabled the discovery of additional dimensions of social skills. It should also be noted that although the inductive search for categories is an open ancestor, a partially restricted perspective cannot be completely avoided due to the previous knowledge and the dimensional model that has been developed. It must also be added that the results are subjective assessments of the apprentices surveyed and that

socially desirable statements may have been made, which is why the results should be interpreted with caution. This could have been counteracted by comparing further interviews with the teachers and instructors involved in order to obtain an outside view of the acquisition of social skills.

Nevertheless, the model in Figure 2 should be regarded as the theoretical-empirical result of the present study. Further research is necessary, but can and should build on this preliminary work and the present model. Thus, it can be stated, modestly formulated, that a contribution has been made here that extends the current state of research. However, peer learning approaches for the promotion of social skills must also continue to be evaluated in their practical implementation in vocational education and training. This is particularly valid because peer projects offer apprentices in vocational education and training a wide range of development opportunities to strengthen their social skills and to be able to act successfully both, at work and in social life. This would accordingly also justify an increased use of peer learning in vocational education and training in schools and enterprises and at the same time increase their awareness. With these approaches, teachers and instructors could make the learning activity for apprentices in vocational education and training more varied, increase learning success and, through the high level of self-activity of the peers, relieve the burden on themselves.

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Citizenship education for VET students: Learning through active participation

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Abstract: Democratic education (DE) can be defined as learning about, for and/or through democracy. ‘Learning through’ should be the best way of DE for vocational learners who, compared to academic learners, are equally intelligent and more ‘hands-on’. However, researchers such as Gordon (e.g., 2006) and Öhrn et al. (2011) argued that pupils’ living democracy is hardly compatible with the social structuring of schooling. This paper, drawing, like Öhrn et al. on Bernstein’s (e.g., 1990, 2000) code theory, exploits the theory’s special potential to theoretically outline alternative modalities of education (cf. Moore 1984). Briefly, Bernstein’s ‘code’ is a function of classifications (boundaries, resulting from power relations) and framings (control over the interaction). From Öhrn et al.’s findings, the paper highlights critical structural factors of schooling that encumber DE as ‘learning through’: interrelations between the programmes’ prestige, the classification of learners and the classification in the curriculum organisation. The paper, then, argues that a change in the underlying macro-social power relations, from state and pedagogic field to agents from the community, leads

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to changes in the critical classifications, and concurrently eludes narrow technical training. The paper concludes that this theoretically constructed modality of education supports acquirers' legitimate control-taking over issues of pedagogic interaction (framing) and the possibility of DE as 'learning through' for vocational learners.

Keywords: Democratic education, Citizenship, Pupils' influence, Social structuring of education, Basil Bernstein

1. INTRODUCTION

The Council of Europe defines Education for Democratic Citizenship (henceforth: DE) as learning about, for and/or through democracy (Birzea, Kerr, Mikkelsen et al. 2004). 'Learning about' implies lessons on citizenship-related subjects, such as processes and structures of political life. 'Learning for' implies a focus on attitudes and soft skills required for democratic cohabitation. 'Learning through' implies learning democratic behaviour through active participation in the development of the present environment, that is, in the school, and a democratic teaching-learning pedagogic relationship. For vocational learners who, compared to academic learners, are equally intelligent and more 'hands-on', learning through active participation should be the best way of DE.

Participation in the development of the present environment can be realised by different degrees between non-participation, degrees of tokenism and citizen power (Arnstein 1969). For democracy 'learning through', citizen power or, here, students' power, would be required. 'Participation relies on social structures permitting enabling, fostering and, at best, legally anchor-

ing participation. At the same time, optimal structures are of no avail without people using and filling them. Individual and structure are not hierarchically related, but interrelated. Structures enable and foster participation, but cannot guarantee it without the individual's activity. Reversely, the individual molds participation, but, as a rule, can act only within the boundaries of the structurally given (minimal and maximal) possibilities' (Urban 2005, p. 3f; author's translation). Researchers such as Gordon (e.g., 2006) and Öhrn et al. (2011) argued that the structurally given possibilities of schooling encumber students' living democracy. Öhrn et al. (2011) arrived at this conclusion as a result of an extensive ethnographic study on democratic education in schools, including also two vocational programmes (a Vehicle Programme and a Child and Recreation Programme). In their search of explanations for their complex and contradictory findings, they drew on several different theories and found that Basil Bernstein's (1971, 1977, 1990, 2000) 'code theory' had the overall greatest explanatory power: the power and control relations, i.e., the social structuring of schooling constitute an obstacle to DE as 'learning through'.

This paper is highly appreciative of the Swedish findings and builds on them. In order to theoretically advance one step further, the paper takes advantage of a special capacity of Bernstein's theory, which is, above 'thick explanation' (Maton and Muller 2007, p. 17), its generativity. It 'has a capacity to point beyond what is to what is possible, but as yet unrealized' (Moore 2006, p. 35), for instance, to point to shifts in the social structuring of learning which would lead to maximizing the possibilities for learners' democratic participation in the development of their everyday learning and working environment and so would

legitimize DE as 'learning through'. The paper, first, summarises relevant features of Bernstein's code-theory. Second, it recaps in a descriptive language Öhrn et al's findings and, third, re-describes them in the language of the theory. Finally, following Moore (1984), the paper exploits the theory's special potential to theoretically outline an alternative modality of education, where, arguably, students are vested with power and which thus enables students' democracy 'learning through'.

2. THEORY

This paper's theoretical section cannot pay justice to all the theories that Öhrn et al. examined for their power to explain their findings. It focuses on Bernstein's (1971, 1977, 1990, 2000) code theory and its central concepts classification (C) and framing (F), as Öhrn et al.'s (2011, p. 150) summary of findings is: 'Joint initiatives from the students to influence the core of teaching – that is its level, contents and methods – ... constitute a threat to strong classification and framing of upper secondary education'.

Classification (C) is Bernstein's analytical concept for boundaries between agents and categories in the same set. Classifications are created as a result of power struggles between agents occupying different positions in a social division of labour. In scholastic education, macrosocial agents are the state and the pedagogic field in relative autonomy, more or less strongly influenced from the world of work and from international contexts (Bernstein 1990, 2000). The boundary rule is: 'things must be kept apart: things must be put together... How things are put together depends upon the formulation of the organising principle to generate a range of forms' (Bernstein 2000, p. 123f).

Concurrently, the questions arise: in whose interests is the apartness of things/the togetherness of things? And 'whose power is relayed by whose boundaries?' (ibid.)

Categories that can be described by their classification strengths are

- contexts (for instance, education and production)
- agents (for instance, transmitters and acquirers, teachers and pupils, or pupils and agents from a community outside school, or teachers and agents from a community outside school)
- discourses (for instance, discourses transmitted in a school, following a curriculum, that is, an organising principle, and discourses transmitted in everyday life, not following any organising principle)

Depending on the strength or permeability of the boundary, classifications can range between stronger and weaker ($\pm C$). 'In the case of weak classification there is an integration of generative principles, whereas in the case of strong classification the principles are kept apart and are differently specialised' (Bernstein 1990, p. 195). Thus:

- The fundamentally strong *classification between education and production* as categories of function (Bernstein 1990, p. 195) can be weakened, i.e., becomes permeable, for instance, when vocational knowledge is brought into the school.
- School *knowledge* can be classified from non-school or everyday knowledge by the form of its curricular organi-

sation. Everyday knowledge, Bernstein (2000, ch. 9) sees as segmentally organised, i.e., without a necessary connection between what is learned in the different segments. The classification of school *knowledge* from non-school knowledge is strong, when the curriculum is organised vertically. Vertical discourse means that ‘knowledges’ build on each other systematically, with a clear organising principle; e.g. Natural Sciences. The classification is termed weaker, when the curriculum is organised horizontally (‘knowledges’ are horizontally aligned, e.g. Social Sciences) (cf. Bernstein 2000, ch. 9). In the latter case, the recognition of specific curricular demands becomes more difficult.

- The ‘knowledges’ in vocational programmes are per se less strongly classified from everyday knowledge than those in academic programmes. Yet a vocational programme that transmits a clear identity and prepares learners for a distinct occupation or set of occupations, has to organise its knowledges according to an inherent principle, so that the knowledge becomes more strongly classified from everyday knowledge than that in a vocational programme leading to more general qualifications.
- Academically strong *learners* are strongly classified (C+) from agents in the world of work and in the local community. Academically weak or disinterested learners are weakly classified (C-).
- *Teachers* as transmitters are specialised agents (specialised in pedagogy) and thus set apart (classified) from agents outside the school context (C+).

Framing (F) is Bernstein's analytical concept for the locus of control within a division of labour, for instance in the teacher-pupil-relationship in a pedagogic interaction. Here, framing refers to the selection and sequencing of learning contents, the pacing or expected speed of acquisition, the evaluative criteria and the hierarchy in the relationship. Framing is termed stronger or weaker ($\pm F$), depending on the degree of participation the dominant partner in the interaction allows the weaker partner.

Framing and also Classification can have internal (i) and external (e) values. F^i refers to relations within a communicative context such as school or family or community or work, as was just described in the previous paragraph; F^e refers to communicative relations between contexts. 'Where there is weak framing of external values ($-F^e$), the home's [or community's, or work's; addition GH] communication, practices and values are brought into the school...' (Bernstein and Diaz 1984, p. 129f). Thus F^e provides an index of the strength of the boundary between school and non-school knowledge (cf. Moore 1984, p. 400). Internal classification (C^i) refers to boundaries within one context. For instance, within a school 'certain spatially related functions may become candidates for spatial regulative marking practices' (Bernstein and Diaz 1984, p. 134), that is, for establishing boundaries. 'Where classification of space is strong then its ritual realisation celebrates hierarchy. All boundaries produced by the classification spark with explicit power' (op.cit., p. 135). External classification (C^e) refers to boundaries between different categories in one set. Such a set is, for instance, is the category 'transmitters', containing the sub-categories 'teachers' and 'other transmitters'. 'Where there is more than one category of transmitter and more than one category of acquirer we

can ask questions not just about the classification and framing of the relationships between the transmitters and acquirers but also about the classification and framing of the relationships between the categories of transmitters and between the categories of acquirers' (Moore 1984, p. 404f).

Bernstein's *Code* is a function of classification and framing. The concept 'classification' captures structural characteristics, the concept 'framing' captures interaction within these structures. Structures can be enabling or encumbering participation and, thus, DE as 'learning through', as Urban (2005) pointed out. Öhrn et al. (2011) showed that the classifications and framings of the school code, as they are realised in the teacher-pupil-relation in schools, encumber democracy 'learning through'. Consequently, changes are required here to create a social structure enabling participation.

Öhrn et al. (2011) focussed their ethnographic research on the level of pedagogic practice. According to Bernstein (1977, ch. 5) the pedagogy is one of three 'message systems', via which, in educational institutions, the code is transmitted from the macro-social level to the micro-level of transmission, the other two being curriculum and evaluation. Within the construction and articulation of these three systems, the categories of transmitters and acquirers are constructed and articulated in terms of Cs and Fs (cf. Moore 1984, p. 404). The three message systems are interrelated and transmit not only learning contents, but also power relations and positionings. The macro-social power relations invisibly influence the micro-level pedagogic interaction, as they produce the pedagogic discourse underlying the transmission and regulating it in a non-determinative way. Thinking of alternative classifications and framings enabling DE as 'learn-

ing through', requires to take into account all three interrelated message systems and the power relations behind them.

The code positions acquirers in relation to knowledge, to the means of knowledge production and in relation to a community of knowers. Acquirers can accept this positioning or turn away. 'The positioning of culturally specific categories of subjects under the regulative principle of the school system reproduces social structure (the structure of relationships) through logical structures (the system of values and meanings)' (Moore 1984, p. 180).

'Bernstein's mode of theorizing', Moore (2006, p. 35) pointed out, 'has the following features:

- It provides principles whereby empirical instances can be understood as instances of a set of possibilities represented by a generative rule.
- These rules systematically generate sets of instances of particular types that can be provided with empirical referents or indices.
- It is historically contingent which of these possibilities is realised in practice and, hence, might be present to us in experience.
- It is sociologically contingent as to how these realizations (or their absences) occur and are distributed and how they are open to change. It is within that distribution that power comes into play and positions are socially and politically valorized within particular historical configurations.'

For the purpose of this paper, this means that the empirical phenomena, which Öhrn et al. encountered in their ethnographic

study, need to be understood as instances of a set of possibilities represented by a generative rule and thus re-described as $\pm C/\pm F$. The findings have to be translated from complex empirical descriptions into a language of theoretical conceptualization in order to show the categories encumbering DE as 'learning through' as a historically contingent realisation of classifications and framings. Then other modalities of $\pm C/\pm F$ become thinkable that would, in contrast, enable DE as 'learning through'. As a comparable example from natural science, Moore (2006) mentions the invention of the periodic table of chemical elements, which Mendeleev arranged by their atomic weight and family characteristics. Empty places should be occupied by elements unknown or untheorized at Mendeleev's time, but deducible by their characteristics. Likewise, modalities of Cs and Fs can theoretically be developed that are so far unknown, with different power relations and differently valorized positions, so that, for instance, students' power becomes thinkable.

3. THE SWEDISH FINDINGS

3.1 EMPIRICAL DESCRIPTION

The Swedish study (Öhrn, Lundahl und Beach [eds.] 2011) was located in three upper secondary schools in different Swedish towns and looked for instances of all three forms of democratic education (learning about, for and through democracy). Two schools ran both general and vocational programmes, and in the course of one year, classes were observed in a Natural Science, a Social Science and a Vehicle Programme as well as in a Child and Recreation Programme. An 'Individual Programme' was observed in the third school. In addition to participant observa-

tions, individual and group interviews were carried out with students and teachers. This paper presents only a very crude summary of a huge amount of observations and interview extracts published elsewhere. It puts a special gloss on the findings concerning democracy 'learning through' participation.

Lessons for 'learning about' the functioning and processes of democracy, researchers found in the Social Science Programme only. But possibilities for 'learning through democracy', researchers found in all programmes, wherever students attempted to collectively influence the pedagogy and the teaching. In the Natural Science and the Vehicle Programme, such attempts received ad hoc informal support from teachers, who pointed out democratic procedures and rules. In the Child and Recreation Programme, parents, teacher and head teacher quickly took over. In the 'Individual Programme', the space teachers gave for students' initiatives to influence their learning or working environment, was used mostly to avoid work, for instance, by film-watching or earlier ends of lessons. Findings in this programme, presented under the suggestive title 'Can this be called democracy?' (Dovemark in Öhrn et al. 2011), will not be discussed in this paper which focuses on improving learning through democracy for vocational learners.

In the Social Science Programme, students, against expectations, were not interested in exercising democratic influence in class, although, for instance, at the beginning of the year, a teacher gave deliberate space for learners' participation. On the contrary, these students preferred clear indications of what is a right answer. This made learning more effective and safer for them. Consequently, in the course of the year, pedagogic practice became more teacher- and fact-centered. Rosvall (in Öhrn et al. 2011, p. 89) summarises that the students in the Social

Science programme were ‘conceptualized towards a citizen that might be involved later’.

Students from the Natural Science and the Vehicle programmes initiated collective actions with informal support. The Natural Science students, first, told their parents that they suffered from too rapid advances in mathematics; these, then, told the class teachers. At a class hour, a class teacher suggested a fair procedure: Not the whole class, but a delegation should talk to the mathematics teacher and negotiate a pace reduction. However, the mathematics teacher replied that nothing could be changed, as his classes were designed for strong students and mathematics had to be taught step by step in a pre-determined order (Hjelméri in Öhrn et al. 2011, pp. 40ff, 44). Eventually, the students gave up their initiative.

The Vehicle students demanded compensation for frequent cancellation of mathematics lessons due to teacher’s illness. A vehicle mechanics teacher, experienced in trade union work, supported them in turning the class council into a formal meeting, leaning on trade union meetings. Concurrently the teacher warned the students not to make public that he told them about such procedures, as this had got him into trouble before. However, a meeting protocol did not materialise, and the request was taken to the head teacher informally. The head teacher postponed a solution until the coming school year and, in an individual interview with the researcher, justified the non-change with students’ high absenteeism in mathematics, that is, with their lack of interest (cf. Rosvall2 in Öhrn et al. 2011, in particular pp 102, 103). Good mathematics knowledge as a prerequisite to become a successful vehicle mechanic was not taken into consideration.

In the Child and Recreation Programme, parents and the class teachers forwarded students’ complaints about too rapid

advances in computer classes to the head teacher, and she immediately supported the complaint, taking sides against the computer teacher. Few students warned that, as a consequence of a speed reduction, time would not be sufficient to teach all the modules foreseen in the computing curriculum. But these warnings were uttered only in individual interviews with the researcher. Indeed, one out of five modules was not taught at the end of the year (cf. Hjelmér² in Öhrn et al. 2011).

Programme	Learning of democratic rules	Goal of attempted change	Success of participation
Natural Science	Informally ad hoc from class teacher	Slower pace of teaching in mathematics	no
Social Science	In lessons	Clearer explanations of what is the right answer	yes
Vehicle	Informally ad hoc from vehicle mechanics teacher experienced in trade union work	Compensation for cancelled mathematics lessons	no
Child and Recreation	Parents and head teacher took over; no transmission of democratic rules	Nicer behaviour of teacher and slower pace of teaching in computer classes	yes

Table 1. Table of observed students' attempts to influence their learning and working environment (own table G. Höhns, summarising Öhrn et al., 2011)

Successful learning of democratic rules expectedly comes to show in students' practical participation in their everyday learning environment. But goals and outcomes of attempted participation turned out to be diverse and contradictory, and the only successful attempt to influence the pedagogic interaction was that of the Child and Recreation Programme students, where democratic procedures were bypassed and which lead to a dilution of the curriculum. How was this possible? The Swedish research team, in an abductive move, tested several theories which might be able to explain the findings and concluded that Basil Bernstein's (1971, 1977, 1990, 2000) 'code theory' had the greatest explanatory power: 'Joint initiatives from the students to influence the core of teaching – that is its level, contents and methods – seem to receive especially little encouragement. Such actions constitute a threat to strong classification and framing of upper secondary education. Hence, the defence of teachers' knowledge-based superiority, particularly in subjects with a vertical discourse, still constitutes the greatest obstacle for students' initiation and carrying through of actions aiming to change aspects of education and for other adults in school to interfere and support such efforts of change' (Öhrn et al. 2011, p. 150). After this empirical description of the Swedish observations, this paper's next section summarises the central findings in the language of the code theory.

3.2 DESCRIPTION IN THE LANGUAGE OF THE THEORY

From the perspective of Bernstein's code theory, the Swedish students' activities can easily be identified as attempts of control-taking over the pedagogic practice, that is, the *internal*

framing relations, of which pacing (the expected speed of acquisition) and evaluative rules are a part. Indeed, the pedagogic practice and the elements of framing render themselves for students' democracy learning through participation, as this is their immediate learning environment. In two programmes (Natural Sciences and Child and Recreation), students attempted to weaken the pacing, in two programmes they called for stronger framing (stronger pacing in terms of compensation for cancelled mathematics classes in the Vehicle programme; stronger evaluative rules in the Social Science programme). Changes in classifications were not aspired to. Yet classifications are important to understand the differential outcomes.

Given the fundamentally strong *classification* between scholastic education and the world of work, the Natural and Social Science programmes are strongly classified programmes; the vocational programmes Vehicle and Child and Recreation are comparatively weakly classified. The stronger classified programmes are more prestigious. This shows in self-reflections of teachers and students in the Child and Recreation Programme (cf. Hjelmér² in Öhrn et al. 2011, p. 54) and even in the distribution of learning spaces in the Vehicle Programme, where the rooms are located at the periphery (cf. Rosvall² in Öhrn et al. 2011, pp. 93, 100).

The classification of school knowledge from everyday knowledge is strong in the Natural Sciences with a vertically organised curriculum, and it is weaker in the Social Sciences with a horizontally organised curriculum; that is, the recognition of specific curricular demands is more difficult in the Social Sciences Programme. The knowledge in vocational programmes is, per se, more weakly classified from everyday knowledge than that in

academic programmes. From the two vocational programmes, the Vehicle Programme's knowledge is more strongly classified from the everyday knowledge, as it transmits a clear identity and directs students towards a distinct (set of) occupations, with general educational subjects such as Swedish, English and Mathematics closely related to the vocational qualification (e.g., Swedish for vehicle students). The Child and Recreation Programme leads to a more general qualification; its knowledges are more horizontally aligned, that is, more segmentally organised, with a less strong relation between them.

The *learners' classification* from agents in the world of work and in the local community differed in interpersonal perception (by the teachers) and in self-perception. The Natural Science teacher perceived his students as being or becoming academically strong (C+) and, consequently, disregarded the students' plea for slower pacing. The Social Science students saw themselves as aspiring high academic achievements (C+). The teacher agreed with this self-perception and adjusted his teaching accordingly, that is, the pedagogic practice became more fact- and teacher-centered, so that higher achievements would be easier to gain.

The vocational students in the study often had a working-class family background. For the Vehicle students, Rosvall² (in Öhrn et al. 2011, p. 94) noted: "All the students in the class were male, with a working-class background." Hjelmér² (op. cit., p. 53f) wrote with regard to the Child and Recreation students: "The ... Programme mainly attracts young women from working class backgrounds with low social capital, often from homes with poorly educated parents ... This corresponds well with the background of most of the seventeen girls and four boys in the

class studied here. Furthermore, some of their parents were on long-term sick leave or unemployed at the time of the study. Two students had an immigrant background.” Notwithstanding their background, the Vehicle students saw themselves as aspiring high academic achievements (C+), as mathematics knowledge was a requirement for becoming a successful vehicle mechanic, and they demanded more of it. The head teacher, however, who justified the non-change with students’ high absenteeism in mathematics classes, perceived the vehicle students as academically weak and disinterested (C-). Likewise, in a different school, the students in the Child and Recreation Programme were seen as C- in interpersonal perception (by their parents who supported their wish for less time pressure in computer classes, the class teachers and also the head teacher), although some students warned against a speed reduction in computer classes (C+ in self-perception). In other words, teachers constructed the vocational students with working-class family background as C-, and positioned them to knowledge correspondingly: a dilution of the curriculum appeared acceptable, compensation for cancelled lessons not so. Thus the vocational students who saw themselves as C+, as aspiring to learning the full curriculum content, were deprived of their assumed learning potential. This positioning must have been frustrating, and the students’ later withdrawal is understandable.

Table 1 (observed students’ attempts to influence their learning and working environment) can now be modified and extended:

Programme	Learning of democratic rules	Goal of attempted change	Success of participation	Programme	Organisation of curriculum	Imaginary learners
Natural Science	Informally ad hoc from class teacher	Slower pace of teaching in mathematics F-	no	Academic C+	Vertical C++	Academically strong C++ (in interpersonal perception)
Social Science	Formally, in lessons	Clearer explanations of what is the right answer F+	yes	Academic C+	Horizontal C-	Academically strong C+ (in self-perception)
Vehicle	Informally ad hoc from vehicle mechanics teacher experienced in trade union work	Compensation for cancelled mathematics lessons F+	no	Vocational C-	Vertical C+	Academically disinterested C- (interpersonal p.) Academically strong C+ (self-perception)
Child and Recreation	Parents and head teacher took over; no transmission of democratic rules	Nicer behaviour of teacher and slower pace of teaching in computer classes F-	yes	Vocational C-	Horizontal C-	Academically weak C- (interpersonal p.) Academically strong C+ (self-perception of some learners)

Table 2. Extended table of observed students' attempts to influence their learning and working environment, including classification values (own table G. Höhns, summarising Öhrn et al. 2011)

The re-description in Bernstein's conceptual language brings to light that the success of a students' initiative depended on the teacher's or head teacher's reaction, which in turn correlated with their perception of the learners' classification and the classification of the programme's knowledge. Clearly, the classifications are not amenable to changes initiated by students, neither the classifications of programmes and the resulting higher/lower prestige nor the classifications of knowledges by curriculum organisation. In conflicting perceptions of learners' classifications, the teacher's perception was the dominant one. In academic programmes (C+), the students' initiative ended successfully that aimed at learners' higher achievement (becoming C+), like in the Social Science Programme, although stronger framing ran counter discourses of students' participation. The students' initiative ended unsuccessfully that aimed at reducing the pace (in the Natural Science Programme). In vocational programmes (C-), the initiative of Child and Recreation students ended successfully, that aimed at a dilution of the curriculum (which corresponds to the teacher's and head teacher's perception of the vocational learners as disinterested (C-) and in need of protection). However, the dilution of the curriculum is not a desirable result, and to reach it, democratic procedures were bypassed, so that DE learning did not occur, either. The Vehicle students' initiative ended unsuccessfully that aimed at a compensation for lessons cancelled, that is, at stronger framing (which ran against the head teacher's perception of the stu-

dents as disinterested (C-), notwithstanding the verticality in the curriculum).

A final glance at the classification between transmitters and non-transmitters in the Swedish study confirms that only teachers are valued/legitimate transmitters. The agency of non-transmitters such as the parents was put into effect through the class teachers (sparking off a discussion during the class hour in the Natural Science Programme and a talk to the head teacher in the Child and Recreation Programme). The vehicle mechanics teacher assumed the role of trade union functionary, when he brought into the school his knowledge about trade union work that he had obtained earlier, while working outside the school. He, thus, weakened the external framing; however, he warned that this had got him into trouble before (cf. Rosvall² in Öhrn et al. 2011, p. 102f). In short, the classification between who can be a transmitter (teachers only) and who cannot be a transmitter (parents, trade union functionaries) in the Swedish case is strong, as all activity from non-teachers in the school takes place under teacher control. Clearly, neither students nor even other adults are equipped with a power to effectively challenge the teachers' dominance, a power that would be required for DE as 'learning through' democratic participation in the everyday learning/working environment.

By now, Öhrn et al's (2011, p. 150) conclusion should have become clear: 'Joint initiatives from the students to influence the core of teaching – that is its level, contents and methods – seem to receive especially little encouragement. Such actions constitute a threat to strong classification and framing of upper secondary education. Hence, the defence of teachers' knowledge-based superiority, particularly in subjects with a vertical

discourse, still constitutes the greatest obstacle for students' initiation and carrying through of actions aiming to change aspects of education and for other adults in school to interfere and support such efforts of change' (Öhrn et al. 2011, p. 150). This paper's summary of findings in the conceptual language of classifications and framings is, naturally, very crude. Still, it conceptualizes the observed facts behind Öhrn et al's conclusion systematically, and it provides a starting point to think of possible structural changes.

4. SHIFTS IN THE CLASSIFICATIONS AND FRAMINGS TOWARDS A MODALITY ENABLING 'LEARNING THROUGH'

How can an educational system be conceived where joint initiatives from students to influence the core of teaching would not constitute a threat to the fundamental structurings of classification and framing? A simple weakening of classifications and framings is not the solution, as the Swedish example showed. Horizontal discourse like that in the Social Science Programme is more weakly classified than that of the Natural Science Programme's vertical discourse. But weaker framing of pedagogy here led to students' uncertainty and to their call for stronger framing, i.e., their refusal to take influence. Vocational programmes are weakly classified, as their content is less isolated from the world of work than that in academic programmes; but in the school context, they go along with a positioning of vocational students as more weakly classified. This positioning makes students' influence acceptable for teachers, when it aims at a dilution of learning, even when bypassing democratic

procedures. To enable real participation of students and DE as 'learning through', a re-classification is required, a change in the underlying regulative principle of scholastic education, its 'doxa' (Moore 1984, after Bourdieu 1977).

Bourdieu's schema of orthodoxy, heterodoxy and doxa, Moore (1984, p. 179) explains as follows: 'The first two terms refer to positions that are explicitly articulated within a social field [such as education or schooling; GH]: the official and the oppositional. Doxa is the underlying, unifying (regulative) principle of the field: that which is tacit and taken for granted. Doxa is "the guilty relationship" of heterodoxy to orthodoxy.' The Swedish findings showed that students' influence on the core of teaching, their real participation ran counter the orthodoxy and was suppressed, and the social structure of the school (+C/+F) was reproduced. The re-description in Bernstein's conceptual language also showed that the teachers, the acquirers' classification and the classification of knowledges played a decisive role in the differential outcomes of students' participation, as Moore (1984, p. 182) predicted: school's structural reproduction primarily is achieved 'by reproducing the classification of agents (transmitters/non-transmitters, acquirers/non-acquirers) and of knowledge (the hierarchy of school knowledges and school/non-school knowledge) and by maintaining the boundaries of the categories so produced (regulating the relationship between the categories).' Moore (1984, p. 404) argued: 'Simply liberalising or democratising that [transmitter-acquirer-]relationship (though justifiable on other grounds) does not fundamentally challenge the principle of the relationship. It is the category transmitter that is critical because it is here that fundamental questions about what counts as knowledge and as a valid rea-

lisation of knowledge are ultimately raised'. Consequently, to theoretically develop a social structure enabling DE as 'learning through', categories of transmitters must be changed in a way fundamentally challenging the principle of 'doxa'.

Who are categories of transmitters, and how can they be changed? While the Swedish study identified teachers as transmitters and parents and trade union functionary as agents entering the school under the auspices of teachers, Moore (1984) usefully expanded this list. In a study on community education, Moore found non-educationalists entering the school in the following different capacities: as private citizens (like the Swedish parents), as supervisors, functionaries (like the vehicle mechanics teacher acting as trade union functionary) or as representatives of occupational roles, yet, like in the Swedish study, all under teacher control; i.e., the school's doxa was always maintained. 'The significant features of these groups are: (1) the manner in which they are constituted as categories (principle of **classification**) and, therefore, the way in which the members are positioned as culturally specific subjects; (2) the strength of their inputs into the programme (representing the relationship between school and non-school knowledge – the more 'relevant' the curriculum, the greater the status accorded to nonschool knowledge) (principle of **framing**); (3) the degree of control they exercise over the transmission process (reflecting the degree of specialisation of transmitters, the insulation between categories of transmitters, and, ultimately, the criteria governing the definition of the transmission process as such (**classification and framing**))' (Moore 1984, p. 399f). Moore's wider range of categories of transmitters highlights an increasing permeability of the boundary between who can and who cannot be a tea-

cher, a 'progressive expansion of the categories of publics involved in the transmission process' (Moore 1984, p. 399). Concurrently with the progressive expansion of categories, of which the Swedish findings showed two examples, Moore noted a shift in the classification of school knowledges, from strongly classified academic knowledge towards less strongly classified vocational and community knowledge which different categories of transmitters brought in. With this shift 'in the definition of what counts as valid knowledge and in the degree of control that non-teacher transmitters have over the knowledge that is transmitted' (Moore 1984, p. 403), the external framing, the index of the strength of the boundary between school and non-school knowledge, also weakened. In sum, 'The progression of categories registers changes in the values of C' and F^e' (Moore 1984, p. 403.). But the degree of control that non-teacher transmitters had over the knowledge transmitted, still remained limited. This limit, however, is 'the key factor in defining the limit of the field of the doxa as such and which represents, therefore, the principle of the doxa' (Moore 1984, p. 403). This limit also is the limit of students' participation.

To fundamentally challenge this principle of the doxa, Moore (1984, p. 403, underlinings original) concluded, 'we have to track the progression of categories of transmitters alongside an increasing control by transmitters over the transmission process to a point where that control can transform the principle regulating the categories as such – a point where the public becomes the agent of the transmission process'. This movement, Moore (op. cit., p. 406; underlining original) specified, '...does not simply index a shift of function from one group of personnel to another. It signifies a fundamental change in the principle regulating who

can be a transmitter and what counts as a valid transmission. It marks a shift from a principle of exclusion in which strictly defined categories are kept apart and hierarchically ordered, to a principle of inclusion in which categories (both of knowledge and agents) can be mixed (according to a different principle)'. When categories of agents (transmitters and acquirers) can be mixed according to a principle of inclusion, the hierarchy in the transmitter-acquirer-relationship would be abolished. Students would obtain power, and, consequently, opportunities for DE as 'learning through' participation in developing their learning and working environment would be feasible.

As this theoretical movement is so unusual, this paper provides more quotations from Moore (1984) that further illustrate his point. Moore (op.cit., p. 406ff) summarizes, how categories of transmitters and acquirers are transformed by the different principles. For transmitters, the principle of exclusion means that teachers only are transmitters and exercise strong control – the Swedish study provided a vivid example. When this principle is loosened, citizens also may become transmitters under the control of teachers; the Swedish study provided two examples; the study on community education Moore referred to, provided a few more. The shift towards a principle of inclusion implies external agents themselves controlling the transmission process. This shift, a 'yet to be realised possibility', 'would occur where the community effectively colonises the school, where representatives are present not simply to provide knowledge or a point of view within a radical teacher based educational programme but as agents directing activity and drawing upon the resources of the school (including, most crucially, the intellectual resources of the teachers – the representatives of the forms of knowledge) accor-

ding to their own criteria of relevance' (Moore 1984, p. 399). Notably, Moore (1984, p. 13) explains: 'These communities (the material locations within social structure of educational decision fields) are identified with "labour market segments" characterised by distinctive socio-economic features'. Moore seems to suggest here that labour market segments could be conceived as the communities that, in his theoretically developed modality of education, would direct activity of the school. These socio-occupational communities would be the dominating agents in a social structure fostering DE as 'learning through'.

When the public or a socio-occupational community becomes the agent of the transmission process, then the forms of knowledge can take on their social forms, and also acquirers are positioned differently. This is because 'pupil behaviour within the regulative context of the school', as Moore (1984, p. 13) suggests, 'reflects pupil identity (as a culturally specific subject) and [that] identities are constructed and located within social careers, the trajectories of which are embedded within (and at the same time constitutive of) the material cultural practices of broad-based "socio-occupational communities"'. Pupils' identity-ascription and -construction or, in other words, pupils' positioning by others and their self-positioning within the regulative context of the school, bear a relationship to socio-occupational communities. The Swedish findings showed just this – teachers positioned vocational students with their working-class background as disinterested and in need of protection, i.e. as weakly classified. In the theoretically constructed modality of education, however, 'As far as the category of acquirers is concerned the weakening of the principle of classification involves a) the relationship between categories of acquirers and b) the

relationship between those who can be acquirers and those who cannot' (Moore 1984, p. 406). For acquirers, the principle of exclusion means that pupils only are acquirers. Teachers cannot be acquirers in the same context as pupils, as Moore (*ibid.*) pointed out, arguing: 'If teachers are acquirers it is in a different context (e.g. an in-service training course)'. Moreover, the principle of exclusion means that pupils are selected, mostly by age, but also, as the Swedish case shows, by their interest in academic or vocational programmes; and pupils have no control over selection criteria. They only can accept their positioning (like the Swedish students in the Natural Science Programme did, when they gave up their initiative to take influence) or turn away (like the vocational students, in particular the Vehicle students after their unsuccessful attempt to receive compensation for maths cancellations). A shift towards a principle of inclusion would mean that acquirers are not any more selected, but 'elect for membership of categories (and in so doing generate categories)', as Moore (1984, p. 407) noted. Although Moore does not explain further, which categories are generated by acquirers, the whole of chapter 7 in Moore (1984) makes clear that acquirers create categories of transmitters and of knowledge. When acquirers choose which socio-occupational community they wish to join, then they turn agents from this community into transmitters, and they turn the knowledge residing within that community into their educational knowledge. Thus in Moore's theoretical mode, where socio-occupational communities become the agent of the transmission process, acquirers are equipped with power.

In sum, the shift away from a principle of exclusion towards a principle of inclusion implies an abolition of the social principle

of hierarchy, so that 'all agents can in principle freely exchange knowledges regardless of social hierarchy' (Moore 1984, p. 408). This does not imply, as Moore (1984, p. 407) stressed, 'the abolition of specialist teachers or 'standards' or distinctive realms of knowledge'. It does not imply, either, that learning takes place only in a localized context and only limited local knowledge is transmitted. Bernstein's (1977) theory reminds researchers of the three interrelated message systems of education: not only the pedagogy, where acquirers can take control, but also the curriculum and the evaluation, which, in Moore's theoretical mode, are all in the hands of the community. 'What is changing is the principle generating and regulating categories and the relationships between them and within them' (Moore 1984, p. 407). A social structure following a principle of inclusion, where agents from a community, such as a socio-occupational community, control the transmission process, so that the hierarchy in the transmitter-acquirer-relationship is abolished and acquirers have the power to elect and to generate categories, such a social structure enables DE as 'learning through' in the sense of Arnstein's (1969) 'citizen power' or 'student power'.

5. SUMMARY AND DISCUSSION

This paper theoretically drafted a social structuring of education enabling Education for Democratic Citizenship (DE) as learning through students' active participation in the development of their present environment. Arguably, this is a particularly good way of citizenship education for vocational learners, who, compared to academic students, are deemed to be more 'hands-on', more comfortable with experiential learning. The paper built

on findings from an ethnographic study in Swedish schools, covering both academic and vocational programmes (Öhrn et al. 2011), as well as on Bernstein's (1977, 1990, 2000) code theory. The Swedish findings showed that, speaking in Bernstein's theoretical language, the classifications and framings of scholastic education encumber DE as 'learning through'. To draft an alternative enabling modality of education, the paper proposed a shift in the principle underlying education.

The categories that the Swedish study found encumbering DE as 'learning through' are 'transmitters' and 'valid educational knowledge'. This paper drew strongly on Moore (1984), who considered these same categories central to the realisation of the principle of educational 'doxa', which he revealed as a principle of exclusion. Following Moore (1984), the paper proposed to shift this underlying principle by expanding the categories of legitimate transmitters to a degree where agents from the community, possibly a broad-based socio-occupational community, do not just enter the school under the auspices of teachers, but control the transmission process 'according to their own criteria of relevance' (op.cit., p. 399). Notably, a change in the principle of who can be a transmitter and what counts as a valid transmission, requires the community to control all three educational message systems, that is, not only the pedagogy, but also the curriculum construction and the system of evaluation. Agents from the community would have to direct the pedagogic practice of the educational institution, bring in their own knowledge, shape the curriculum accordingly and evaluate the acquisition, and also draw 'upon the intellectual resources of the teachers' (ibid.). Such a shift beyond the limits of educational 'doxa' goes along with acquirers' equipment with power, the power to elect for

membership and for creating categories, instead of being selected and having no influence on selection criteria. The paper suggested that Moore's alternative model of education provides a structure enabling DE as 'learning through'.

Socio-occupational communities often are equalised with employers in a particular labour market segment. The struggle between educationalists and employers about the power to shape curriculum, pedagogy and evaluation, is widely known in many countries (for Sweden, see, e.g. Lundahl's (in Öhrn et al. 2011, chapter 2) review of reforms and governance changes during the last fifty years). A major argument is that education, under the direction of employers, would turn into narrow technical training, providing no more knowledge than what is required to perform simple jobs; moreover, such narrow training would deprive students of the possibility to learn to critically assess their learning and working environment. Yet to equalize employers with socio-occupational communities is, perhaps, a short circuit. The Swedish project's findings remind researchers that, besides employers, trade unionists are likewise a part of socio-occupational communities. The example, in the Swedish findings, of the Vehicle mechanics teacher, who acted as trade union functionary, is merely small, but it points to the special potential of this sub-group to induct young people into democracy learning through active participation in the development of their environment. This potential could not be actualized within the educational 'doxa', where it ran counter the dominance of teachers and of academic knowledge. But it may well be actualised if Moore's theoretical educational mode outside the limits of doxa is ever realized, if employers and trade unionists together form a broad-based socio-occupational community direc-

ting education according to the community's relevancies. These relevancies, then, must be conceptualised more broadly than skills to perform simple jobs in one company. Acquirers must be granted space to create categories, to elect who to learn from, what and when, yet all within the framework of a curriculum established by the broad-based community which also includes academic knowledge. Moreover, to include practice in industrial democracy, the transmission site must be weakly classified from the world of work.

Democracy education through learners' active participation in the development of their present environment is particularly important for vocational learners who, compared to academic learners, are equally intelligent and more 'hands-on'. The Swedish study showed how the school's social structuring hampers such participation. Moore's theoretical modality of education is an inspiration for a change. Thinking further about how this theoretical mode could be realised in practice, is worthwhile – for the benefit of vocational students and of democracy.

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Status of Facilities Adequacy of Technical Drawing Studio in Nigerian Universities for Vocational and Technology Education program

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Abstract: The necessity of Technical drawing and its importance in vocational and technology education program cannot be under rated. The main purpose of this study was to investigate the status of facilities adequacy of Technical drawing studio in Nigerian universities. Specifically, the study seeks to find out the extent of adequacy of tools/equipment in the Technical drawing/Graphic communication studio and to determine the condition of the Technical drawing/Graphic communication studio. A sixty (60) items structured questionnaire was used for data collection. Purposive sampling was used in this study. Frequency percentage, mean and standard deviation were used for data analysis. The findings of the study revealed among others that there was inadequacy of tools and equipment and unfavorable condition of the Technical drawing/Graphic communication studio. Based on the findings, it was recommended that adequate tools and equipment should be provided in order to produce competent and skill technologists/engineers. Also,

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standard studio should be provided with regular maintenance of all the facilities.

Key words: Status, facilities, adequacy, technical drawing, studio, technology Education

1. INTRODUCTION

Technical drawing/Graphic communication is one of the core subject in Technology Education program in Nigerian Universities. Also, Technical drawing played a vital role in practical application of technology. While, teaching and learning of Technical drawing/Graphic communication is taking place in studios. A studio is practical oriented based whereby the skills students learned were putting in practice. According Othman, Ahmad, and Ajis, (2017) studio is a place for students sharing information, learning and interacts with their studio mates and spend a lot of time in the studio.

Studio is workroom or workplace and the word *studio* is derived from the Italian while in Latin refer to as *studium*. There are many types of studio, however in this study, focus on educational studio, specifically technical drawing studio (TD studio) and sometime called technical drawing room. Technical drawing studio is workspace where students learn and practice drafting and design with and without an instructor. Technical drawing studio comprises many facilities such as physical facilities, environmental criteria and training facilities. Riley, Kokkarinen, and Pitt, (2010) viewed facilities are meant to facilitate the provision of learning environments, conducive to student's academic success throughout their life cycle. Therefore, an effective technical drawing studio facilities is responsive to the teaching and learning of technical drawing.

Furthermore, educational Facilities generally refer to the amenities and services that can be used to achieve educational goals and objectives. These include physical facilities, environmental criteria, training facilities, and human resources. Physical facilities for TD studio include: TD room, exhibition room, instructor's office, storage, lockers, toilet, etc. Beynon, Hallak, and Postlethwaite, (1997) asserted that typically, within an educational system, the costs for physical facilities are second to those for teacher salaries. While environmental criteria of TD studio consist of natural temperature, natural lighting, artificial lighting, ventilating system, electricity system supply, heating system, drinking water facilities. In addition, training facilities involve drawing instruments and equipment for both teachers and students, drawing table and stool, Podium, models and so forth.

Availability and adequacy of technical drawing studio facilities is highly needed and essential for student learners' competency and industrial demands. Kpanep (2011) viewed that quality technical vocational education facilities assures student learners' competency in practical knowledge, skill and mastery of their chosen career which finally will translate into technological education development. Also, Beynon, Hallak, and Postlethwaite, (1997) argue that students could not be expected to learn effectively if the studio did not have fundamental facilities such as physical and training facilities. In addition, the quality of educational facilities has a great impact on the student achievements in technical drawing/design studio facilities, the need for the provision of state-of-art educational facilities can never be over emphasized (Hassanain, Mohammed, & Cetin, 2012).

Despite the importance of facilities adequacy of technical drawing studio in Nigerian universities for vocational and tech-

nology education program, however it has been agreed that facilities provided in some universities in Nigeria for instruction are inadequate (Besmart-Digbori, 2010; Uwaifo, 2011; Onosele & Ejodamen, 2018; Isa, & Yusoff, 2018; Edokpolor, & Dumbiri, 2019). That means if equipment and facilities are lacking at the training point, the probability of producing 'half-baked' technicians will ensue (Ogbuanya, & Okoli, 2014).

Extensive literature reviews have shown that very few research publications are devoted to status of facilities adequacy of technical drawing studio in Nigerian universities for vocational and technology education program. Therefore, this study seek to determine the facilities adequacy of physical facilities, environmental criteria and training facilities of TD studio in Nigerian universities.

Purpose of the studies

The purpose of this study is determine status of facilities adequacy of technical drawing studio in Nigerian universities for vocational and technology education program. Specifically, the study seeks to determine:

1. Adequacy of physical facilities in technical drawing/Graphic communication studio of technology education program.
2. Adequacy of environmental criteria of technical drawing/Graphic communication studio of technology education program.
3. Adequacy of training facilities of technical drawing/Graphic communication studio of technology education program.

Research questions

1. How adequate are the physical facilities in technical drawing/Graphic communication studio for Vocational and Technology Education program in Nigerian Universities?
2. What is the adequacy of environmental criteria of technical drawing/Graphic communication studio for Vocational and Technology Education program in Nigerian Universities?
3. What is the adequacy of training facilities of technical drawing/Graphic communication studio for Vocational and Technology Education program in Nigerian Universities?

2. METHODOLOGY

The study used a descriptive survey research design aimed at determining the facilities adequacy of technical drawing studio in Nigerian universities for vocational and technology education program. That is adequacy of physical facilities and environmental criteria as well as the adequacy of training facilities (instruments/equipment) in the Technical drawing/Graphic communication studio. The study was conducted in the Nigerian universities. These include technical drawing (Machine and Building drawing) lecturers from the public Nigerian universities offering technology education program. The entire population was used as a sample, because it was relatively manageable.

The research instrument was validated by three experts from Abubakar Tafawa Balewa University Bauchi. The internal consistency of the instrument was established using Cronbach's Coefficient Alpha. The value obtained for the reliability test shows Crunbach coefficient of 0.8. The data collected was

analyzed using IBM SPSS statistics version 25. Descriptive statistics such as frequency percentage, mean and standard deviation was used to answer research questions 1, 2 and 3.

The instrument used for data collection was structured questionnaire. The values represent Likert rating of 1–4, where 1 point grossly inadequate; 2 points inadequate; 3 points adequate; 4 points most adequate. In term of analysis values from 1.00 to 2.49 pints considered low and 2.50 to 4.00 points considered high (Uneke, et al. 2013). This means that items with mean values of 2.50 and above were considered as adequate while items with value 2.49 and below were considered inadequate.

3. RESULTS

The demographic information obtained shows that in term of gender all the respondents were Male 19 (100%) and academic qualification 19 lecturers have master's degree. The main area of specialization of the lecturers is Mechanical 7 (36.8%); Woodwork Tech 3 (15.8%); Auto Tech 5 (26.3%); Building Tech 4 (21.1%). While registration with professional organization shows that 7 (36.8%) register with Teachers Registration Council of Nigeria (TRCN) and 12 (63.2%) register with TEPAN (formally National Association of Teachers of Technology, NATT). Explicitly the result shows lack of female TD lecturers.

Research Question 1

How adequate are the physical facilities in technical drawing/ Graphic communication studio for Vocational and Technology Education program in Nigerian Universities?

The data in Table 1 revealed that 19 out of 20 items of the means response is below 2.5 and decision shows inadequacy. And only item 9 with $M = 2.5263$ indicated divergent view among the respondents that there is adequate Instructors' office. Specifically, there is an inadequacy of TD studios, consumable, and lockers. In addition, the results show inadequate floor space, emergency exist and storage area. Also, insufficient wheelchair entrance and usage in most of the TD studio. Generally, data analysis regarding the respondents concerning the adequacy of facilities are scanty.

Table 1 Technical Drawing Studio Physical Facilities Adequacy

S/N	Statements	X	S.D	Decision
1.	Technical Drawing Studio in my school are ...	1.7895	.41885	IA
2.	Technical Drawing studio floor space in my school are.....	1.3158	.58239	IA
3.	Adequacy of floor material and consumable in Technical Drawing/Graphic studio	1.8421	.37463	IA
4.	Adequacy of the Technical Drawing/Graphic studio auxiliary space are ...	1.7895	.78733	IA
5.	Provision of store and relative humidity of the storage area	1.2105	.41885	IA
6.	Total space for student's property	1.5789	.76853	IA
7.	Display room/ exhibition room are ...	1.3684	.68399	IA

8.	Technical Drawing/Graphic studio size	1.4737	.51299	IA
9.	Instructor's office	2.5263	.51299	A
10.	Space for large project storage (e.g. models)	1.6316	.49559	IA
11.	Provision of emergency exist and rescue outlets	1.7895	.63060	IA
12.	Suitability of furniture sizes in my studio are ...	1.5789	.60698	IA
13.	Adequacy of visual aids areas	1.7895	.41885	IA
14.	Provision of lockers	1.4737	.51299	IA
15.	Provision of acoustics (sound carries)	1.3158	.47757	IA
16.	Gangways (space between tables)	1.5263	.61178	IA
17.	Accessibility of wheelchair entrance ramp are ...	1.1053	.31530	IA
18.	Provision of wheelchair usage in my studio are ...	1.0526	.22942	IA
19.	Fire extinguishing agents for the Technical Drawing/ Graphic studio	1.6316	.49559	IA
20.	First – aid cabinet supplies	1.6842	.67104	IA

X = Mean; SD = Standard Deviation; A = Adequate; IN = Inadequate

Research Question 2

What is the adequacy of environmental criteria of technical drawing/Graphic communication studio for Vocational and Technology Education program in Nigerian Universities?

Analysis of mean responses of items 21 through 31 as presented in Table 2 for the adequacy of environmental criteria of

technical drawing studio show that heating system used (mean = 1.6316, SD = .49559) and students ration per studio (mean = 1.8421, SD = .76472). The result shows lack of heating system and students' ratio not in conformity with the standard. Also, the respondents indicated insufficient natural temperature and natural lightning as well as lack of air movement and air filter efficiency in the TD studio. Therefore, the participants illustrated in all of the items that there is lack of environmental criteria of technical drawing studio.

Table 2 Adequacy of Environmental criteria of Technical Drawing Studio

S/N	Statements	X	S.D	Decision
21.	Natural Temperature of TD studio are ...	2.3684	.49559	IA
22.	Natural Lighting of TD studio are ...	2.4211	.50726	IA
23.	Artificial Lighting of TD studio are ...	2.3684	.49559	IA
24.	General electricity system supply	2.2632	.45241	IA
25.	Heating system used in Technical Drawing/Graphic studio	1.6316	.49559	IA
26.	Minimum quantity of air per pupil supplied by ventilating system	2.1053	.56713	IA
27.	Air movement in my studio are ...	2.1053	.80930	IA
28.	Air filter efficiency in my studio are ...	1.9474	.62126	IA

29.	Students ration per studio	1.8421	.76472	IA
30.	Drinking water facilities	2.0000	.74536	IA
31.	Regular building maintenance and repair are ...	1.9474	.62126	IA

X = Mean; SD = Standard Deviation; A = Adequate; IN = Inadequate

Research Question 3

What is the adequacy of training facilities of technical drawing/ Graphic communication studio for Vocational and Technology Education program in Nigerian Universities?

Research question 3 addressed the items 32 through 52 in Table 3. For items 41 and 42, respondents believed that there are adequate white boards, markers, dusters and podium ($M = 3.0526$ & 2.6316 respectively). However, the means for items 32 to 40 with regards to TD teachers, drawing instruments, TD tables, stools, and chairs are below 2.50 which considered inadequate. Also, in response to items 43 to 52 analysis indicate inadequacy of projectors, projectors screen, models, flip chart and card board papers. Therefore, training facilities were found inadequate in all of TD studios.

Table 3 Adequacy of training facilities

S/N	Statements	X	S.D	Decision
32.	Adequacy of Technical Drawing teachers	2.0000	.81650	IA
33.	Adequacy of audio-visual aids	1.8947	.56713	IA
34.	Adequacy of training equipment	1.8421	.60214	IA

35.	Adequacy of Technical Drawing/ Graphic studio for instructional Needs	1.7368	.65338	IA
36.	Adequacy of provision of drawing instruments and equipment (for students)	1.5789	.60698	IA
37.	Adequacy of provision of Black Board drawing instruments and equipment (for teachers)	2.4737	.77233	IA
38.	Adequacy of provision of Chair and Table (for teachers)	2.0000	.57735	IA
39.	Adequacy of provision of training manuals for the assembly and maintenance	2.1053	.73747	IA
40.	Adequacy of Drawing tables for students	2.0000	.81650	IA
41.	Adequacy of White boards, markers and dusters	3.0526	.70504	A
42.	Adequacy of Podium	2.6316	.49559	A
43.	Adequacy of Chairs and stools for students	2.2105	.41885	IA
44.	Adequacy of Projectors	1.6842	.67104	IA
45.	Adequacy of Projectors screen	1.7895	.53530	IA
46.	Adequacy of Models	1.7368	.56195	IA
47.	Adequacy of Safety rules cards in the studio	1.9474	.84811	IA
48.	Adequacy of Drawing sheet and Card board papers	2.1579	.68825	IA
49.	Adequacy of Flip chart	1.4211	.50726	IA
50.	Adequacy of special instruments e.g. flexible rule	1.4737	.51299	IA
51.	Adequacy of standard and qualitative facilities	2.1053	.73747	IA
52.	Adequacy of current and up-to-date facilities	1.9474	.70504	IA

X = Mean; SD = Standard Deviation; A = Adequate; IN = Inadequate

4. FINDINGS AND DISCUSSIONS

The findings of this study revealed that physical facilities are inadequate such as TD studios, consumable, lockers, floor space, emergency exist and storage area. Also, the findings indicate insufficient wheelchair entrance and provision of wheelchair usage in most of the TD studios. With regards to the TD studios environmental criteria the study discovered that insufficient natural temperature and natural lightning as well as lack of air movement and air filter efficiency in most of TD studios. Ibáñez, Zafra, & Sacht, (2017) stressed about the problems of glare in a TD studio and suggested the need for internal surfaces (wall and ceiling), light fixtures repositioning, and use of strategies that allow distribution of lighting.

The findings of this study show that the TD studios training facilities such as drawing instruments, TD tables, stools, and chairs, projectors, projectors screen, models, flip chart and card board papers are not adequate. Furthermore, the finding revealed that most of the TD lecturers are inadequate as well as not specialize in drafting technology education or design and technology. The findings discovered gender disparity as a result of lack of female TD lecturers. This finding is in line with Besmart-Digbori, (2010); Uwaifo (2011); Edokpolor, and Dumbiri, (2019) noted that facilities provided in some TD studios in Nigerian universities for VTE program instruction are found inadequate.

Also, the respondents revealed total inadequacy of standard and qualitative facilities. Abdulkadir, and Ma'aji, (2014) noted that vocational and technical education program are not achieve as a result of inadequate facilities and lack of storage as well as

effective maintenance. However, the participants confirmed about adequacy of Instructors' offices, white boards, markers, dusters and Podium.

5. CONCLUSION

Technical drawing studio is a working environment whereby practical based for teaching and learning of technical drawing is taking place. Based on the findings of the study revealed that there is inadequacy of physical facilities, environmental criteria and training facilities of technical drawing studio manifest in Nigerian universities for vocational and technology education program. It is also concluded that there is lack of effective maintenance for physical and training facilities of technical drawing studio.

6. RECOMMENDATIONS

Base on the findings, the researcher made the following recommendations

1. Enough technical drawing instruments and materials should be made available to reflect the real working environment and industries.
2. Preventive maintenance of physical and training facilities for technical drawing studio should be observed regularly.
3. Replacement of dilapidated and broken-down facilities of technical drawing studio.
4. Provide adequate standard environmental criteria for technical drawing studio so as to improving learning and technical drawing.

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Millenials experiences of meaningful and engaging work – a study conducted at Finnish ICT and Social- and Health Care organizations

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Abstract: The social- and health care and the ICT-sectors will within the next 15 years have a shortage in staff. The retention is a problem among millennials. It is important to study how to engage recently graduated employees at work. The article aims at answering questions related to meaningfulness at work for millennials through adapted approaches involving Appreciative Inquiry and Autophotography. The research involves 20 recently graduated from five related organizations. The results indicate that psychological safety, values, appreciation, self fulfilment and growth seem to create meaningfulness and construct drivers to hinder retainment and enhance engagement. Collegial support was valued, and interest was expressed in getting to know your peers also through after work, in order to collaborate better. For millennials meaningful work is a value of

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importance. Learning at work was not only seen as a prerequisite for development, but also as an appreciated privilege.

Keywords: millennials at work, social- health care, ICT-sector, meaningful work

1. INTRODUCTION

In future Finland there will be a shortage of employees in the fields of ICT, and social- and health care (Skillspanorama, 2016). According to the Finnish Nurses Association as many as 25% of nursing students consider a career change (Sairaanhoitajaliitto, 2019). A possible effect is a shortage of nursing staff (Flinkman et al. 2013). Nurses' voluntary turnover is a worrying global phenomenon which affects service quality. Retaining nursing staff within a hospital is important (De Simone et al. 2018). According to Emerging Europe (Istrate, 2019), also the tech industry in the Nordic countries is struggling with talent shortage. It is hence, of outmost importance to research what engages and retains millennials in the two sectors. One measure that has been suggested to solve retention is work engagement, as work flow and positive emotions have proven to have a direct impact on organizational productivity, retention, innovations and sickleave rates (e.g. Hakanen, 2009). Further, a good emotional work culture supports wellbeing, and reduces the feeling of stress (Dackert, 2010). Negativity is dangerous in multiple ways, and 'negative footprints' can have long and sometimes even physical effects on young recently graduated employees.

The article is related to a research project labelled 'Engaging Talk' in which we collected data in 2020 from millennials applying an appreciative inquiry approach, using autopho-

tography and group discussions as methods. The article aims at answering what engages and brings meaning at work for millennials within the ICT- and Social- Health care sectors in order to hinder retention.

1.1 THEORETICAL FRAMEWORK

Numerous studies on employee engagement at work has been introduced by Kahn (1990, 1992). Kahn claims that employees should be seen as true partners, making them constantly involved in dialogues and processes about their job roles, including tasks and working relationships. Duffy (2018) argues that one should not treat employees like an employee, but ‘as a real person’. Kahn’s theory of employee engagement rely on three aspects -meaningfulness, safety and availability. Kahn (1990, p. 703) defined psychological meaningfulness as a “feeling that one is receiving a return on investments of one’s self in a currency of physical, cognitive, or emotional energy”. Hence, the employee needs to practically understand the value and impact her role has on the organisation as a whole (Young, 2018). Further, it is this genuine appreciation of employee contribution that enhance workers to engage themselves fully to their role. Psychological safety is assumed in this article to have impact on retainment and engagement, defined as “feeling able to show and employ one’s self without fear of negative consequences to self-image, status, or career” (Kahn, 1990, p. 708). Psychological availability is the “sense of having the physical, emotional, or psychological resources to personally engage at a particular moment” (Kahn, 1990, p. 714).

Google, the tech giant conducted a massive two-year study on team performance, which revealed that the highest-perform-

ing teams have one thing in common: psychological safety, the belief that you won't be punished when you make a mistake. Studies show that psychological safety allows for moderate risk-taking, speaking your mind, creativity, and sticking your neck out without fear of having it cut off. (Delizonna, 2017.)

Engagement is proposed to hinder retention, and defined by Schaufeli & Bakker (2004) as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. Work-flow on the other hand is as a state in which the employee is both physically, cognitively and emotionally present at work (Kahn, 1990). An employee who experience work-flow is often proud of her work, and resilient in challenging situations.

Ojala and Ahonen (2005) distinguish between six levels of work related needs applying Maslow's hierarchy of basic human needs, ie: Physiological needs (health, physical shape), Safety needs (physical and social safety, continuation of work), Need of closeness (teams, colleagues, peers, community), Appreciation (professional and own contribution), Self Fulfillment and growth needs (continuous development of one's own work), Mental needs (flow, own ambitions and values). These fulfil the basics of work-related needs including mental, social, physiological and physical needs.

Commitment is seen as psychological affiliation between human and target, a person's attitude and adherence (Hietamäki, 2013, p. 38; Lämsä & Hautala, 2005, p. 92). The concept of commitment has been used in work-life studies, in reference to organization, aims, behavior, motivation, emotional commitment, content, work centredness and career (Mamia & Koivumäki, 2006), but few studies have empirically substantiated generational differences in work values (Twenge et al. 2010).

Based on a comprehensive literature review, Martela and Pessi (2018) have concluded that meaningfulness means significance as a subjective evaluation of work as intrinsically valuable and worth doing. Significance can be further divided into two sub-dimensions: 1) work as serving some greater good or prosocial goals and 2) self-realization as a sense of autonomy, authenticity and self-expression at work (Martela and Pessi, 2018).

Zemke et al. (2000) have divided meaningfulness between generations as follows: The aging baby boomers (born 1946-1960) find meaning through high work moral, diligence and success at work. The so called generation X (1961-1979) is interested in remuneration, career- and continuous learning prospects. Technology being part of their lives. The Y generation or millenials (born after 1980-1994) find meaning in networks and virtuality. Hobbies may be equally or more valued than work. Further, the millenials have grown in a more egalitarian society (Twenge et al, 2010). These elements are reflected by the values of the millenials, who are more tolerant, more open and more diverse than any other known generation in for example the US (Greenberg & Weber, 2008), a generation that stress questions regarding sustainability, peace and cultural diversity. In their view, the traditional workplace does not exist; they prefer horizontal communication and collaborative working, based on projects and clear objectives, not on a strict working schedule (Erickson, 2008, p. 60). **Loveland** (2017) on the other hand claims that the Z-generation (born 1996-2010) consist of initiative taking young individuals, who value social questions and hope for a better word. Hence, there are gaps between generations, also in relation to work committment and length of career. Whereas the older generations tended to stay for an

extended period with one employer, the millenials is the generation most likely to switch jobs (Gallup, 2016).

Both the Youth Barometer (Haikkola & Myllyniemi, 2020) and Gallup (2016) have conducted large studies on millenials. Further, the Innovation Fund Sitra (Lettenmeir et al, 2019) has conducted a study on Finnish lifestyles, and report among other things, that when 37% of the respondents claim to work actively towards environmental friendly approaches and solutions, a much larger percentage (44 %) of the 30 year olds and younger work for the environment. At work and during studies about a fourth actively support user friendly solutions, whereas 34 % of the below 30 year olds act upon user friendly solutions correspondingly (Hyry, 2019).

Millennials, wish to be unattached, connected, unconstrained and have idealistic views on life. Work ambience, ecological values, supportive supervisor and flexibility in addition to interesting work tasks create meaning at work for millenials. For well educated millennials work often means competence development. Millennials want to be free of old workplace policies and performance management standards, and they expect leaders and managers to adapt accordingly. Millennials look for work that fuels their sense of purpose and makes them feel important, as work must have meaning. They want to work for organizations with a mission and purpose. Back in the old days, baby boomers didn't necessarily need meaning in their jobs. Millennials care about having managers who can coach them, who value them as both people and employees, and who help them understand and build their strengths. (Gallup, 2016.) According to the Youth Barometer (Haikkola & Myllyniemi, 2020) 88 % wish their work to aligned with their own values. The expecta-

tions regarding supervision is often based on feedback and fairness (Pakka & Rätty, 2010.) Much has hence been claimed about the millenials, however, the voice on meaningfulness at work of millennials is largely absent (Rentz, 2015).

1.2 RESEARCH

The method of research was inspired by autophotography, adapted from Glaw et al. (2017) and the practice of Appreciative Inquiry (AI) adapted from Watkins & Mohr (2001). Both are based on positive psychology and engagement at work (Hakanen, 2011). The AI-method include an appreciative inquiry cycle in which the research team (1) Choose the positive as the focus of inquiry, (2) Inquire into exceptionally positive moments, (3) Share the stories and identify life giving forces. Autophotography is asking participants to take photographs of their environment. Autophotography captures the world through the participant's eyes with subsequent knowledge production (Glaw et al, 2017). We asked the informants to bring along three photos that for them express; joy, engagement, meaning and wellbeing at work. To put them in the right mood and mindset, we encouraged the informants to think about the following questions upon participation. We did not conduct the interview directly and chronologically through these questions, but conducted the open dialogues through their photos, related meanings, and follow-up questions:

- what brings joy to your work?
- in which situations do you feel joy and engagement?
- what puts you in a good mood?

- what happens in those situations?
- give examples on moments that stimulated you emotionally, positively?
- depict your dreamday at work?
- what do you consider important in your work?
- what gives you meaning at work?
- are the organizational values aligned with yours?
- how important for you is professional development and learning at work?
- describe your career prospects
- how do you enhance wellbeing at work?

In total, 20 millennials from five social- and health care and ICT-organizations were interviewed. We met with 14 of the young employees twice. In the first phase, groups of 2-6 recently graduated employees or millenials from each organization were invited and encouraged to talk about positive, significant, engaging and meaningful work experiences. We asked the informants to bring with them photos taken at work. The photos were not only excellent icebreakers, but increased reflexivity and safety among informants. Photos capture particulars that the researcher would not otherwise know to ask about or the participant would not think to mention (Tinkler, 2013, p. 179). We hence applied photos (autophotography) and Appreciative Inquiry as a method for engaging the recently employed to talk about positive and meaningful experiences at work. In the second phase, in-depth focus-group interviews took place with the same groups on certain topics, for example values, that emerged from the first phase. In the third phase, supervisors from the respective organizations responded to an e-inquiry on how to engage, shape and create

an organization that encourages engagement, commitment and engaging talk. The dialogues were conducted in Finnish and Swedish, taped and transcribed.

Appreciative inquiry and autophotography as adapted methods were found to be effective tools for understanding millennials engagement and meaningful work propositions and values in day-to-day work. Visual methodologies can be used on almost any population by allowing participants to express their ideas in a nonverbal way, but have until now been underutilized in engagement and values research among millennials in social-, health care and ICT-work.

An abductive research approach seemed most suitable given the nature of the research objective. Unlike inductive and deductive reasoning, abductive research can explain, develop or change the theoretical framework before, during or after the research process. In fact, abductive research moves back and forth between inductive and open-ended research settings to more hypothetical and deductive attempts to verify hypotheses (Dubois & Gadde, 2002). In the following an analysis is provided through theoretical reading and thematic analysis.

2. FINDINGS

The following four themes and sub-themes sprung out of the data, through thematic analysis, categorization and iteration. The themes evolved in an abductive process through interaction between data, analysis and theory. The citations are embedded in the theoretical reading and analysis. Citations expressed in *italic* evolved from data.

Wellbeing is constructed among other things through **appreciation** (Ojala & Ahonen, 2005) and **safety** needs. Kahn (1990,

1992) claims that employees should be seen as true partners, making them constantly involved in dialogues and processes about their job roles are designed or altered, including tasks and working relationships. Duffy (2015) argues that one should not treat employees like an employee, but ‘as a real person’. *For me it is important that I am treated well and kindly. In retrospect I do the same, I am honest, and treat everyone equally.* It is important for management, staff and supervisors to create a psychologically safe environment where employees dare to speak about their work experiences, concerns and development ideas openly. *My closest supervisors give responsibility, are trust in me and my work. Our supervisor pursues matters, listens to everyone regardless of position, gender or race; cleaner, kitchen staff or caretaker.* Psychological safety is defined as “feeling able to show and employ one’s self without fear of negative consequences to self-image, status, or career” (Kahn, 1990, p. 708). *“We have a trully good team leader who does not control but gives space, and everyone is allowed to develop in her own way. Respect, inclusion and responsibility go hand in hand. Appreciation and safety needs are created through equality and trust.*

The Safety needs also involve the **need of closeness**, teams, peers, colleagues, community which here also includes AW (after work) and joy: *We have good selection of clubs here. It is fun to meet different people through a hobby, even if we are here in the same building. AW matters, you learn to know people. We have an annual event, where we go to meet each other outside or work. When you learn to know a person it is easier to collaborate.* Happiness has not been much researched in the context of work, but has recently gained some interest as an influential variable in managing the employment relationship, as stud-

ies have suggested benefits for productivity and performance (Suojanen, 2017). *What brings joy for me is a good team, I have fantastic colleagues, and because of them it is fun to be here.* The need of closeness through teams, peers, colleagues and community were endlessly emphasized through expressions of joy: *Joyful, happy moments when we laugh together. Satisfied customers bring joy. When the customers are content, the whole team feels joy.* According to Hakanen (2017) the ones who feel joy, engagement and professional pride are more creative and social. The need of closeness and safety needs are fulfilled through peers at work, happiness and after work.

Another theme that evolved from data was **feedback** and **competences**, how to give it or the lack of it. *When I do not hear back, I wonder if I did well or poorly, and if I do not receive new tasks I wonder if that is a statement.* The need for feedback is human and relates to emotions and the continuous need of competence development. The expectations regarding supervision is often based on feedback and fairness (Pakka & Rätty 2010.) Even if the negative and positive feedback are in balance, humans often hear the negative feedback as criticism, harder and more sensitive to it. To give critical feedback demand emotional intelligence and skills. The feedback giver need to steer her own emotions and have the ability to also sense empathy. (Ruben, 2009.) *Flexibility and good management, to be able to bring your own ideas, develop your own work.* This requires a psychologically safe environment. *To have the mandate to learn and be able to develop my competences* builds motivation, learning and development. *At this work I can grow as a human.* Continuous, supportive feedback and competence development supports a person's work-identity and the perception as employee. Human

growth and participation in organizational development is like cement that creates a psychologically safe emotional state. Feedback and competences in this study is shaped through safety and the mandate to learn and develop.

Flexibility and safety at work. *To be able to effect your own workschedule.* The traditional workplace does not exist; the millennials prefer horizontal communication and collaborative working, based on projects and clear objectives, not on a strict working schedule (Erickson, 2008). *Distance work is based on a balance between trust and responsibility. The feeling of safety is important and the feeling that you are trusted both as a person and professional is crucial. It gives freedom that is not given in 'normal' situations. Instead of control, the focus is on content and results. I value distance working. To give responsibility and to show trust strengthens the employee's commitment to work. (Salmenperä, 2007.) To collaborate across teams, to share experiences and meet people is both engaging and committing.* Engagement and commitment are also enhanced by trust at management, experience of own work's significance, development possibilities, diversity of tasks, recognition of success, independence, instant feedback, client work and social support (Hakanen, 2011). Flexibility at work is based on trust.

In the following the results evolved from the analysis are presented below.

3. RESULTS

Martela and Pessi (2018) concluded that meaningfulness means significance as a subjective evaluation of work as intrinsically valuable and worth doing. Significance can be further divided

into two sub-dimensions: 1) work as serving some greater good or prosocial goals and 2) self-realization as a sense of autonomy, authenticity and self-expression at work.

The intrinsically valuable values for a greater good include:

- 1) *Appreciation and safety* needs at work: to be seen, heard, and respected on equal basis, and equal measures
 - kindness
 - honesty
 - listening

Appreciation and safety needs are created through equality and trust

- 2) *Need of closeness at work*; to be allowed to laugh, collaborate and network at work
 - happiness
 - after work
 - peers
 - respect, collaboration, networking, belonging, wellbeing

The need of closeness and safety needs are fulfilled through peers at work, happiness and after work.

The worth doing values for myself include:

- 3) *Feedback and Competence at work*; to be encouraged to develop, grow and learn at work
 - continuous feedback
 - the mandate to learn
 - participation in organizational development processes

Feedback and competences is shaped through safety and a mandate to learn and develop.

Worth doing values include:

4) *Flexibility and safety at work*; to be able to affect your own work and schedules

- organizational culture, trust and management
- distance work
- emotional trust
- work schedules

Flexibility at work is based on trust.

In conclusion, good introduction to work, a positive, supportive collegial attitude combined with interesting, value created work assignments, diversity and flexibility at work supports engagement. Young employee need to have the mandate to learn and develop, grow, be part of development, and shared experiences. A good work atmosphere, joy, laughter, and customer, supervisor and peer feedback are essential, as well as, flexibility, safety and functional team-work, after work and values such as diversity and equality supported by the organizational structure. It is question for millenials to be both seen and heard on equal basis.

Hence, safety, appreciation, need of closeness, competence development and flexibility at work seem to create meaningfulness and construct drivers to hinder retainment and enhance engagement among our respondents.

4. DISCUSSIONS

The article aims at answering questions related to meaningfulness at work for millennials. The approach stemmed from positive psychology, the questions posed and the discussions held concentrated on the positive aspects of work, i.e. on what brings joy, meaning, positive emotions in work engagement on a daily basis. The approach was justified through previous research in which involvement in dialogues about one's own work and work roles, appreciation and work culture can hinder retention and enhance wellbeing at work. Further, according to Rentz (2015) the voice of millennials regarding meaningfulness at work is largely absent.

There were some differences between social- and health-care as well as ICT- millennials at work in their talks on meaningfulness. Clearly, the ICT millennials value distance work, and argued that distance work enhance their quality of life, allowing a successful combination of family life and voluntary work. The ICT millennials work primarily in projects suited for distance work which is not an option for social- and health care workers, who stressed respectful relationships and ethics in client work. Both groups were equally keen on learning and in developing themselves, advocating flexibility and partaking in cross-sectoral teams. Also a shared interest in receiving continuous feedback, good supervision, happiness and after work was reported. Collegial support and peers were mentioned endlessly, but the interest in getting to know your peers after work, in order to collaborate better, was a novel aspect and unexpected outcome of this research. Another outcome was the need for safety, i.e. to be able to express yourself without being punished, disrespected, disregarded or diminished.

5. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

The selected methods of research, including appreciative inquiry and autophotography proved to be successful. The participating organizations approved of the approach and the photographs brought added value to the scene among informants. The photos functioned as icebreakers and eyeopeners. The informants shared information they would not otherwise have shared, and the photos created a base for trust building.

The Millenials are different, and for them, in contrast to previous generations, meaning at work is a value to be taken seriously. In addition, learning at work, personal competence development was not only seen as a prerequisite for development, but also an appreciated privilege. The millenials wish to be treated equally, as professionals. They wish to be seen and heard, included and be part of teams. Inclusivity and diversity as well as climate change matters, as well as safety and trust, the need of closeness and flexibility.

Coaches, mentors and onboarding were reported in vague terms, as well as a more thorough approach and process for feedback. To research on those questions further would benefit organizations that wish to further learning, competences and equality.

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Developmental trends in Cuban *Educación Laboral* – From Sloyd to polytechnic education

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Abstract: The subject *Educación Laboral* is the Cuban equivalent to Technology Education in other education systems. The history of the development of this subject in Cuban compulsory school is associated first to the Swedish sloyd, followed by an influence of the Industrial Arts from The United States and lately the polytechnic education as developed in the Soviet Union and Easter European bloc. A communality along the historical development of the subject is related to the influence of Cuban philosopher such as Felix Varela and Jose Marti who considered practical oriented subjects in school to be highly beneficial for the holistic development of the individual. This chapter looks briefly to the historical transitions of a subject that today (20020) is to be consider of core importance for vocational education and training but due to its relevance as motivation for practical oriented profession and as a way to develop different skills of relevance for the future work life of the students.

Key words: Educación Laboral, sloyd, polytechnic education

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INTRODUCTION

This chapter tries to introduce and make an overview on the development of technology education within the Cuban educational system from its early starting to the present trends. An attempt at summarising the complex process of establishment and further development of the subject in Cuba is indeed vulnerable due to the remarkable variety of intervening factors. This development is, from our perspective, a socio-economical and culturally conditioned phenomenon. In line with the theoretical approach developed by Goodson (1988) in relation to curriculum development, the establishment and further lines of the development followed by Cuban Technology education was, and still is, conditioned by socio-economic climates of opinions (ideas and interests) ruling the society in different historical stages.

The above-mentioned regular feature is a ground to understand the changes in the development of Technology education within Cuban educational system. In general terms is possible to talk about changes as a consequence of mutual influences between pedagogical ideas developed in the country and those from international education. This fact permits to assume that the development of the subject in Cuba has followed the international trends in the field but at the same time evolved with characteristics of its own. The methodology of teaching is perhaps the area where this particular stands out with major emphasis. Finally, according to the perspective that we are trying to bring forward, sloyd and polytechnic education rather than opposite poles are seen as important stages in a development spiral, which ought to continue its evolution.

BACKGROUNDS

Before 1900 did not exist in the Cuban schools any subject related to what at present we are calling Technology education. In regard to practical work at school the most important backgrounds were the embroidery work in girls' education and the notions of agriculture and trade according to the locality for boys. At the so-called "Escuelas de Amigas" (schools of friends), dedicated to the education of children from the lower classes of society, some kinds of craft activities were taught. There were also schools of arts, vocational schools, charity houses and religious institutions in which different kinds of practical work was taught with utilitarian aims (Moreno Herrera & Mejías, 1990).

There was an important tradition of craft activities in Cuba but they never became part of a school subject. Knowledge and skills in relation to traditional handicraft was mainly transmitted through family members. The study plans stated by order of the Royal Spanish Crown in 1842 and 1863 did not make any particular contribution to the subject at issue; in fact, this subject was very poor developed in Spain compared to other European countries.

The ideas and concepts about practical education of the most outstanding Cuban philosophers and educationists during this period have major historical importance. The priest Felix Varela, considered the father of Cuban philosophy, pointed out the need of practical and experimental education in Cuban schools and the importance of considering children's needs in their education: *"Let's talk in the language of children and they will understand us"* (Moreno Herrera & Mejías, 1990; Moreno Herrera, 1997). José Martí, one of the most outstanding Latin

American writers and educationist of the 19th century, brought forward in his works the need for practical-aesthetical education at school: *"Physical, mental and moral advantages come out of the manual work [...] The man grows with the work he does with his own hands"* (Moreno Herrera, 1997; Pedagogía, 1984). His pedagogical ideas became the main basis of contemporary Cuban educational system and to a great extent are influencing present development in technology education.

THE SLOYD HERITAGE IN CUBAN TECHNOLOGY EDUCATION

With the above-mentioned background in 1901 Swedish sloyd is introduced in the Cuban educational system as part of a process of major changes in education carried out by the USA military occupation government (Alfonso, 1929; Moreno Herrera & Mejías, 1990). An important fact at this stage was that the subject kept the external features as developed in Sweden but it considerably changed in content searching for adapting to the Cuban socio-cultural conditions; in this way Cuban sloyd as a new subject with own characteristics started to arise. The development of Cuban sloyd started rather late (1901) in relation to the beginning of the process of internationalization of Swedish sloyd around 1890 (Reincke, 1995; Thorbjörnsson 1989, 1990). The sloyd was introduced in Cuba when it had already started to receive serious criticisms from leading representatives of the progressive movement. This in particular seems to explain some of the new features of Cuban sloyd in comparison with its original source the Swedish sloyd. A leading figure in this early devel-

opment was the Swedish teacher Aron Heidengren who acted as inspector for sloyd for the whole country from around 1907 to 1911. His book *Manual de sloyd cubano* (manual of Cuban sloyd) (Heidengren, 1906) besides being the first methodological material for the teaching of the subject in Cuban schools, is an excellent summary of contribution from different sources. In its content there is an integration of the best contributions from Otto Salomon (the creator of Swedish sloyd), the progressive movement and the Cuban pedagogical thought. In this early stage the experiences developed in the USA by the Swedish sloyd teacher Gustav Larsson (Bennett, 1937) were also very influential in Cuban sloyd due to the fact that many Cuban teachers were trained in summer courses in his Sloyd Seminarium in Boston. In Figure 1 the main sources of Cuban sloyd are presented.

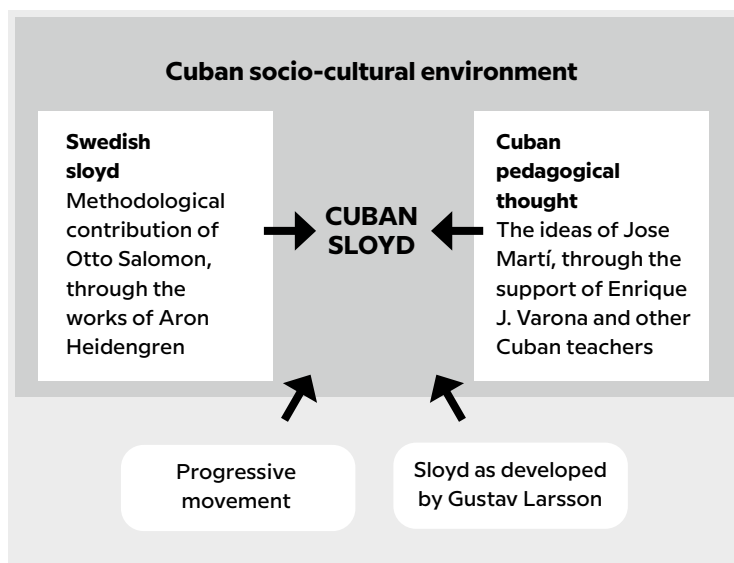


Figure 1: The main sources of Cuban sloyd (Moreno, 1998, p. 99).

Cuban sloyd can be shortly defined as a pedagogical system resulting from the meeting between the Swedish sloyd and the Cuban pedagogical thought which also integrate contributions from the progressive movement and the experiences of sloyd developed by Gustav Larsson (Moreno Herrera, 1998).

FURTHER DEVELOPMENT OF CUBAN SLOYD

From the beginning of its development and in the subsequent historical periods Cuban sloyd was considerably enriched by the contributions of Cuban educators. In the late forties and early fifties, the introduction of industrial arts following the patterns of development in the USA, meant a withdrawal in the evolution process of the subject. The strong emphasis in technical know-how harmed the educative dimension of the subject, which had kept a leading role. In the sixties the trends in the development of the subject changed considerably as a consequence of the great changes in Cuban society after 1959. The principle of combination of study and work started to be a milestone for the development of the whole educational system and had a particular impact in the subject (Abascal, et al. 1981). During the decade of the sixties there was still a strong influence from the previous development of Cuban sloyd.

POLYTECHNIC PRINCIPLE

The National Congress of Education and Culture held in 1971 is one of the most relevant turning points in the whole development of the Cuban educational system during the latest three decades. As a consequence of this congress a process of improve-

ment of the educational system started which lead to the introduction of the polytechnic principle in the school subjects.

The ideas of polytechnic education are rooted in the works of Nadieska and in summary relate to the need of linking the school life to the society with emphasis in the working life and technological world. Polytechnic education is essentially to be carried out through the interaction of the following aspects:

- Knowledge of the main bases of sciences.
- Practical knowledge of the production and functioning of technological devices.
- Knowledge about the application of the bases of science to the technological processes.
- Acquisition of a system of physical and mental abilities connected with modern production through the working process in the school workshop (Abascal, et al. 1981; Pedagogía, 1984).

In the school practice polytechnic education is meant to be developed through the following activities:

- The uncovering of the scientific bases of the process and phenomena within the different technological objects.
- Demonstration of the general character of the processes and activities carried out in the subject in relation to those of the technical world.
- Instruction about the application of the different principles of technology in the activities of the subject and their similarities in different technical-productive processes.
- Comparison between the technical objects existing in the school workshop and their similars in industry.

- Formation in children of a set of productive abilities during the working process (Abascal, et al. 1981).

The above-mentioned aspects greatly influenced the present features of the subject. There are important values in polytechnic education particularly if we considered the continuous increasing of the technological development of society at present taking place. In previous works the limitations faced in the implementation of polytechnic education in regard to technology education has been pointed out (Moreno Herrera, 1997). The assumption of polytechnic education as a compilation of technical knowledge and abilities to be brought to the children seriously harmed the best contributions of this educational ideal. The changes in the curriculum of 1989 were an important attempt at improving the negative situation on this issue, however there is still a long way to go in search for a proper balance between development of productional skills, technological knowledge and the affective-motivational enrolment of children in the activities of the subject. Based on cultural historical activity theory and expansive developmental research (Engeström, 1987) a contribution to this desired improvement has been made by one of the authors of this chapter (Moreno Herrera, 1998).

The problem of improvements of present practice has also been a major concern in Cuban research within the subject field (Borrito, 1990; Cerezal, 1990; García, 1993). Though the focus of these research works goes from technical thought, technical creativity and integration, in all the cases the contributions emanating stress the need to involve children's affective world as a main guarantee for further development.

CONCLUDING REMARKS

An overview on the historical development of technology education in Cuba gives important grounds for what we consider an expected further development. Some important issues to consider in planning the future development are the following:

- The sloyd contribution in terms of:
“Functional work and design, common sense logic for work, contact with the historical-cultural development stages of work” (Kananoja, 1993).
- Technological literacy:
Understanding of the relationship technological world & human kind.
Technological skill (intellectual and practical-productional).
- Entrepreneurship & sustainable development.
- Creativity & personal values; affective-motivational engagement in the production process at school.

Again, these are but items for reflection; others review of the development from sloyd to polytechnic education could considerable enrich future practice in the subject field within the Cuban context. We have already put our “grain of sand” and are committed to keep on doing it!

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Rethinking VET with a Perspective of Capability Approach: a Theoretical and Practical Issue

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Abstract: The paper intends to argue about the value that *the capability approach theory* can offer to the ongoing debate on VET improvement strategies. The first part deals with the value of the Capability approach to integrate and overcome a vision of VET, oriented above all to technical training for the adaptation to the world of work, to underline instead the need for an *integral and global education of the person*. As argued by J. M. Bonvin and others, there are most interesting implications of the capability approach for vocational and educational and training debate: the paper will present some issues and a brief discussion on this debate. The second part aims to present in particular the *concept of agency* as a possible important framework for educational curricula, consistent with the idea of an adequate training of Vet Teachers. "Agency" is one of indicators in a taxonomy TIQ –WBL (Taxonomy of quality indicators

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of WBL) of V.M. Marcone to analyze some relevant area of educational goals in VET environments.

Keywords: VET curricula, Capability approach, Educational justice, work based learning

“The aim of human development, as well as that of effective national politics, is to allow people to live a purposeful and creative life, developing their potential and organising a meaningful life in line with their dignity”.

Nussbaum, M. 2010

INTRODUCTION

This contribution points to the relevance of the notion of “human development” as explored by Martha Nussbaum, professor of Politics and Philosophy at the University of Chicago, and Amartya Sen, who was awarded the Nobel Prize in Economics⁴. The key idea of “development as freedom” (the title of one of the Sen’s most famous books, 1999) is that the economic growth can be achieved by means of democratic growth, that is participation of every individual, not only of the élites, and developmental opportunities of one’s capabilities through educational and formative experiences. Clearly, Nussbaum and Sen echo Dewey, as he argued that “the educational process is one with the moral process”, adding that “according to this approach – gaining skills

4 *The Human Development Capability Association* (HDCA) has been established in 2004 to gather experts and scholars who are interested in the topics of human development and capability approach. The HDCA carries out interdisciplinary research on the foregoing subjects related to quality of life, poverty, justice, gender studies, and environment. Further areas of research are economics, philosophy, political theory, sociology and development studies

and possessing knowledge and education is not to be intended as the final goal, but as an indication of growth and a reason to carry on". Dewey also argue that "Democracy has different meanings, yet its moral meaning lies in deciding that the supreme evaluation of political institutions and productive assets draws on the contribution provided by every member of society to steady growth".⁵ In other words, Sen investigates the set of resources, opportunities and principles regulating both justice and liberty to conceive their functioning and opt for those available in order to decide how to live. By way of examples, those suffering from health problems or facing economic hardship possess a limited set of capabilities, while the reverse is true for wealthy people.⁶ One major point here is that the range of capabilities measures one's freedom. Drawing on this argument, it is also possible to appreciate the criticism made by Sen to "human capital", for the manner this notion is employed in everyday discourse falls short of the wider meaning of "human capability".

Work and "*education to and with the work*" have an *apical role* within the framework enabling human development, beyond the prominence only of quantitative growth and of efficiency and functionalist values (Nussbaum 1997, Sen, 1999).

- From this point of view, there are different research questions: human development can be examined from perspectives other than those including quantitative analysis-

5 J. Dewey. 1916. *Democracy and education*, Mac Millan

6 Margiotta, U. 2013, "Dal welfare al learnfare: verso un nuovo contratto sociale," in *La formazione al centro dello sviluppo umano. Crescita, lavoro, innovazione*, ed. Alessandrini (Milan: Giuffrè); Margiotta, U. 2009. *Genealogia della formazione. I dispositivi pedagogici della modernità*, Venice: Libreria Editrice Cafoscarina; Sen, A., *op. cit.*

based on a merely *functional approach* which considers economic growth – which might also investigate on issues such as social life of people as a whole (wellbeing, social justice, inclusion, etc). For example:

- the need to tackle the conditions that generate unemployment, especially youth unemployment (e.g., the persistence of a significant proportion of young people in NEET;
- the need to improve education and vocational training not only as a “second or third choice” for the student;
- the transformation of work processes in progress against the “scenario” that emerge from the digitalisation of organisational processes in companies (Industry 4.0).
- Two research streams are of interest, how we can see:
1) to what extent the Capability Approach can be turned into a theory of education that can be applied in different environments and topics such as VET education, teacher training, and lifelong learning?; 2) Which educational policies grant to reach the results about the individual’s capabilities in the complex period of the transition from school to work?
- Changes in work’s scenario create a new form of job polarisation but it essential for the future to increase social inclusion and equality of opportunity.
- To do so, a social contract should have at its center equality and opportunity for all, but no more social inequality;
- The global platform based business differs from traditional production process for the lack of a traditional form of social protection ;
- The changing nature of work demands skill of adaptability of workers allowing them to transfer easily from one

job to another... Which are the consequences for learning strategies and didactic models?

- Another element which is increasingly and universally acknowledged as crucial is that of placing formal, informal and non-formal learning on the same footing. Indeed, vulnerable groups – low-skilled youngsters, the unemployed, socially disadvantaged people, workers facing skills obsolescence, and people with disabilities – are those who are concerned the most in this respect.

In conclusion, the *risk of increasing of dis-equality* can create more implication for all societies also at level of social cohesion and civic engagement. The role of education and training (VET) for low educated adults – as a political issue – is the basic element to create a good quality of life for all. We need to link VET with adult education (positive narrative of VET as a crucial value for modernization). Moreover we need to link adult education to citizenship education and renewed democratic solidarity. An OECD Survey in Italy has recently (2017) outlined a proposal of re-launching VET role in our national context. This perspective aims to overcome a vision on VET as a second chance for students. Recent data show that the employability of students coming from VET is better than that for students coming from other sectors. Higher VET curricula and qualifications mostly maintain the traditional focus on applied knowledge.

According to Sen, three elements need to be considered in order to appreciate the role of capabilities in education: the direct relationship with human wellbeing and freedom, the indirect impact of capabilities on social changes, and the indirect effect that capabilities have on economic production. In

Sen's terminology "the welfare of capabilities" allows individuals to demand the exercise of their own rights, first of all learning.⁷ This right is a lifetime one and relates in important respects to the right to citizenship. The validity and forward-thinking which characterize "lifelong learning" – a concept which has been circulating since the 1990's – should be given more significance and form the basis of a new welfare. There is a need for developing political awareness on the issue. This includes widening the *right to education through life*, devising a system of skills certification and validation to ensure full active participation to social life. To do so, people should be helped to familiarize themselves with such an evolutionary approach, focusing on capability through "lifelong guidance".

The key aspect of "development as freedom" – which also recalls the title of Sen's volume – lies in the idea of economic growth, combined with democratic development arising out of everyone's participation – thus not referred to the élite on an exclusive basis – to opportunities in terms of people's capabilities, for people improve themselves through education and training.

THEORY AND METHODS

THEORY

According to Martha Nussbaum, "profit" is the means intended to support human existence, yet "the aim of global development, as well as that of effective national politics, is to *allow people to live a purposeful and creative life*, developing their potential and

7 Sen, A., *op. cit.*

organising a meaningful life in line with their dignity”.⁸ In Sen and Nussbaum’s speaking, *capability is the real potential upon which “human flourishing” is built*.⁹ People’s wellbeing goes far beyond their wealth, for it involves the opportunity to develop their life plan in accordance with their capability.

People empowerment is the first step towards “substantial freedom” that is – to use Sen’s words – “a kind of freedom which involves the capability to convert available goods and resources into freedom to pursue one’s objectives and goals, conduct alternative lifestyles and develop one’s life plan according to individual values”.¹⁰

Capabilities are thus essential rights that need to be safeguarded and granted, although differently, to all citizens.

The theoretical framework underlying the capability approach was already formulated by Sen in the mid-1980’s. Recently, the original frame of reference was expanded by a number of authors to consider such aspects as public policy and to investigate issues such as law and ethics from different perspectives (among others, Robeyns).¹¹

As argued by Jean Michel Bonvin, there are most interesting implications of the capability approach for vocational and educational and training debate.

8 Nussbaum, M. 2010. *Not for profit. Why Democracy needs the Humanities* Bologna: Princeton University Press,

9 Nussbaum, M., *ibidem*.

10 A similar approach can be found in the OCSE Job Strategy and in the EU Employment Strategy,

11 *The Human Development Capability Association* (HDCA) has been established in 2004 to gather experts and scholars who are interested in the topics of human development and capability approach. The HDCA carries out interdisciplinary research on the foregoing subjects related to quality of life, poverty, justice, gender studies, and environment. Further areas of research are economics, philosophy, political theory, sociology and development studies.

According to Nussbaum, ten capabilities are necessary to accomplish social justice, which can be classed in “internal capabilities” (personal traits, intellectual and emotional capabilities, capabilities in terms of perception and movement) and “combined capabilities” (resulting from interaction with environmental factors) and might result in certain “functionings”.

1. *Life*. Being able to live to the end of a human life of normal length; not dying prematurely, or before one’s life is so reduced as to be not worth living.
2. *Bodily Health*. Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.
3. *Bodily Integrity*. Being able to move freely from place to place; having one’s bodily boundaries treated as sovereign, i.e. being able to be secure against assault, including sexual assault, child sexual abuse, and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.
4. *Senses, Imagination, Thought*. Being able to use the senses, to imagine, think, and reason, and to do these things in a “truly human” way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing self-expressive works and events of one’s own choice, religious, literary, musical, and so forth. Being able to use one’s mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to search for the ultimate meaning

- of life in one's own way. Being able to have pleasurable experiences, and to avoid non-necessary pain.
5. *Emotions*. Being able to have attachments to things and persons outside ourselves. Supporting this capability means supporting forms of human association.
 6. *Practical Reason*. Being able to form a conception of the good and to engage in critical reflection about the planning of one's own life. This entails protection for the liberty of conscience.
 7. *Affiliation*. Being able to live for and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another and to have compassion for that situation; to have the capability for both justice and friendship. Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedoms of assembly and political speech. Having the social bases of self-respect and non-humiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails, at a minimum, protection against discrimination on the basis of race, sex, religion, caste, ethnicity, or national origin.
 8. *Other Species*. Being able to live with concern for and in relation to animals, plants, and the world of nature.
 9. *Play*. Being able to laugh, to play, to enjoy recreational activities.
 10. *Control over one's Environment*. Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free

speech and association. Being able to hold property in terms of real opportunity; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. Being able to enjoy the right of property.

Yet the essential component of a just society lies in the link between education and the right to choose the way to live one's life. Safeguarding this right results in effective freedom. The main goal of a just society should be that of providing its members with the same range of capabilities

METHODS

Desk research on international literature and theoretical debate.

RESULTS

The analysis conducted on a theoretical level opens up *new perspectives regarding the contents of VET education, methods and teacher training*. How could we help building a set of competences useful to promote agency and learning to learn for the students? Rethinking values of educational goals with the capabilities theory can implement high quality didactics in VET education.

During the preparation of his doctoral thesis, Valerio Massimo Marcone developed a pedagogical device called "TIQ – WBL" (Taxonomy of quality indicators in work based learning) (*Tabl. n 1* – TIQ – WBL) and applied it in an empirical research. The research project, therefore, stems from the awareness that the training experiences of the young people involved in the WBL pathways should be observed and studied not only in the

measure of “how much” the young will learn and not only from his perspective of employability, but with respect to the characteristics of the cognitive processes activated, to the relevance of changes in relationship with knowledge, to the participation in the process of constructing meanings.

Basically, it is about understanding the effects of work experience on the training plan with respect to the cognitive structures of the subjects, and therefore on a long-term plan and the transferability of the willingness to learn. The doctoral thesis cited above asks some “key questions” such as: how to design new effective learning curricula for the student to facilitate school-work transitions? How can VET teachers enable the learner’s agency for life long learning approach? For the elaboration of Taxonomy, as a pedagogical device, the thesis’ work used some relevant theoretical frameworks that are part of the broader context of constructivism: learning by doing and experiential learning (Dewey), the construct of community of practice (Lave and Wenger), transformative learning (Mezirow) and finally the capability approach (Sen and Nussbaum).

The empirical-descriptive research involved the use of qualitative-quantitative tools: focus groups, interviews and self-assessment questionnaires to the actors involved in the training processes related to the case studies (students, VET teachers). Through the analyses present in the empirical research work, a framework emerges with respect to the lines of development of a quality training process for VET teachers oriented towards an “agency role”¹².

12 For further information on the sample used see in the bibliography Pedagogical concerns and market demands in VET Network – VETNET Valencia, Spain, 2-3 May 2019

Marcone therefore indicates, below, five educational didactic areas for VET teacher training process inspired by said Taxonomy and used in the empirical survey (see Annex 2).

One of conclusive reflections is that the teacher, as a tutor, plays a determining role in helping to “give shape” to the action of the learning subject, in order to active him to generate new values. For example: in transferring the knowledge learned in the classroom by combining it with the technical and transversal (“soft”) skills; to learn by working, and to reflect while working; to relate with colleagues, primarily with the most experienced ones, to share new forms of socialization within a community of practice, to take responsibility. The role of teacher in this perspective can become the main *factor of expansion* in the learning process of the subject, within the dual paths. This opportunity of expansion is very relevant if we reflect about some very important transformations of labour’s market.

Many jobs today and many more *in the near future* will require specific skills; building these skills requires human capital foundations and life long learning;

- a combination of technological know how, problem solving and critical thinking – as well as soft skills, like perseverance,
- collaboration and empathy (World Bank Group Flagship Report, 2019);
- advanced cognitive skills, such as complex problem solving, social behavioral skills, such as teamwork;
- skill combination that are predictive of adaptability, such as reasoning and self efficacy;

ANALYSIS

What is the concept of the Capability Approach? Two research streams are of interest: a) to what extent the Capability Approach (Nussbaum 2011) can be turned into a theory of education that can be applied in different environments and topics such as VET education, teacher training, and lifelong learning for low skilled adults; b) what educational policies at local, national and international level grant the educational guidance to individual's capabilities in the instability of the transition from school to work.

In a nutshell, there are some basic conditions that convert into a set of recommendations for teachers and educators interested in the capability approach as theory and practical way from an educational point of view. These conditions are:

1. focusing on the anthropological issues such as individual's wellbeing, freedom and development of student's potential;
2. concentrating on a formative welfare concerned not only with the conditions of education for employability, but also with the defence and promotion of the individual's opportunities for self-development through an inclusive educational environment;
3. giving proper relevance to the role of the "agency" in educational environment .

"Agency" is an important concept in Nussbaum's Capability Approach, for it clarifies the process intended to change values and objectives. A just society should be accomplished throughout the realization of equality concerning the capabilities of its

members. The capacity to act (agency) is the fulcrum of an educational project centered on the professional dimension. It is not a matter of developing professional behaviors, which are functional to the processes of adapting young people to work contexts that are already given, but of setting the conditions for development, through the strengthening of the capacity to act of young people, of a fruitful collaborative experience between business and educational institution. By way of example, let us imagine a high-school professor who needs to provide young students with some theoretical insights on sustainability. To do so, she might refer to relevant literature and reports. This state of play represents a set of values. However, whereas the same professor commits herself to implement these values – e.g. for instance, by developing innovative items in the academic programmes and supporting research groups which set-up out-of-school initiatives (through the Internet, web communities and so forth) – she prompts her students to develop a number of agents, for she sets some objectives in order to endorse certain values. A just society should be accomplished throughout the realization of equality concerning the capabilities of its members. Consequently, it is not convenience that should be pursued – like redistributing primary goods – but developing capabilities to utilize such goods, in order to convert them into standards of living.

This paper proposes five educational didactic areas of a tutor training process inspired by Marcone's Taxonomy and used in the empirical survey cited above: The educational areas are: A) Reflexivity, B) Participation, C) Agency, D) *Capabilities* E) Generativity (see Annex 1 and 2).

From this point of view the teacher, as a tutor, – as stressed before – plays a decisive role in direction of the action of the learning subject, in order to active him to generate values. For exam-

ple: in transferring the knowledge learned in the classroom by combining it with the technical and transversal skills; to learn by working, and to reflect while working; to relate with colleagues, with the most experienced, to share new forms of socialization within a community of practice, to take responsibility. The role of teacher in this perspective is the main factor of expansion in the learning process of the subject, within the dual paths.

DISCUSSION

A lot of issues concern the main topics of our analysis. For example:

- The focus on the idea of social responsibility of educational providers as a leverage for a shared and effective process of educational growth: what are the concrete possibilities for teachers in the VET area to take charge of educational objectives related to the values of active citizenship and critical thinking (as reflexivity, self orientation, responsibility)?
- The strengthening of the dual learning system good practices; what can be the different roles of company tutors and teachers in the school to work jointly on objectives that are not only related to technical and professional skills, such as those indicated in the taxonomy (cited in Annex 1)?
- The openness of mid/long term employability perspectives for VET students, also in the field of job creation and entrepreneurship; To what extent the development in the curricula of training objectives related to agency,

or the ability to act, can reinforce an effective orientation towards entrepreneurial skills.

- An investigation into new professional and expert pathways with regard to the fourth industrial revolution: To what extent the new soft skills required by digitization and new ways of working can be encouraged by an educational and training approach aimed at opening the minds of young people and adults in training towards the values of the capability approach?
- Proficiency in the profession in current work scenarios can and must also include agency and skills such as self orientation, reflexivity and the ability to develop independent judgment?
- Which teaching techniques and which teacher training guarantees adequate skills to develop not only training skills but also related to training in the values of the person towards the improvement of their capabilities?

Conclusions and suggestions for further researches

- We would like to stress that VET curricula should not only create efficient producer, but also “active citizen” able to reach their potentials, aspirations and capacity of thinking as member of a democratic community. The role of education, also for adult students, is very important to create the conditions to realize social justice in an inclusive world.
- In the future, a work lifecycle approach will be very important with regard to the labour market transformation, so we should also rethink the conceptual frame of VET research against the Life Long Learning paradigm;
- We should investigate deeper, and from a theoretical approach, on the issue of professional knowledge, like,

- e.g. the notion of holistic and contextual knowledge (as argued in Billet, Engstrom et alii);
- The main issue is how to develop the political move from generic recognition of the right to learn throughout lifespan, to a system of certification and recognition of competences assuring the individual's access to participation and active citizenship.

Individual development needs to be accomplished within a more articulated system of skills certification and mapping, which should bring together technical expertise and relationship skills (knowledge sharing, reciprocity, trust, and commitment).

Vocational guidance – including skills assessment, coaching, and individual interviews -should be given priority, to help boost employability, particularly among younger people.

Vocational training programmes for adult workers should be devised to favour the transition among jobs, particularly if one considers the precarious nature of many occupations. In this connection, they should enter such programmes while waiting to start a new job. On-the-job training should be implemented in order to foster growth in terms of social capital. Favouring active participation to working life – at both individual and collective level – might benefit workers in cultural and professional terms.

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ANNEX 1

Tabl. N. 1 – TIQ –WBL (Taxonomy of quality indicators of WBL)
of V.M. Marcone

Indicators	Dimensions	Description
1. REFLEXIVITY	<i>Self-awareness</i>	· Is the learner able to practice cognition with regard to professional practice, even through tutor mediation?
	<i>Self-orientation</i>	· Is the learner able to independently elaborate development objectives of his work-based learning path with particular attention to improving his / her strengths ("professional mastery")?
2. PARTICIPATION	<i>Identity</i>	· Is the learner able to elaborate, in a personal way, a conscious participation to the work activities related to his learning path, configuring his identity, in different relational contexts (school, company)?
	<i>Responsibility</i>	· Is the learner capable of developing "responsible" behaviors in the context of learning at work (an idea of mutual commitment, of shared values, of one's own legitimate "membership" within the group)?

ANNEX 2)

EDUCATIONAL AND TRAINING AREAS OF TAXONOMY

In this table the reader can analyze macro and micro educational objective for each area of Taxonomy in order to correlate them to teaching techniques.

For more analytical view and comments see Marcone, V.M., (2018), How is VET teacher's professionalism changing in work-based learning paths? An empirical research in some Italian schools on the model of school-work alternation. In: Proceedings of the 3rd Crossing Boundaries in VET conference Vocational Education and Training- *Pedagogical concerns and market demands in VET Network* – VETNET Valencia, Spain, 2-3 May 2019

A) *Reflexivity*

- Macro-objective: to enhance in the learner the mental habit of reflection on working practices to improve its potential and correct errors.
- Micro-objectives:
 - to develop an attention to detail process in relation to the activities carried out by the learner;
 - to develop in the learner the ability to monitor errors and identify strategies to avoid them;
 - to make the learner understand the consequences of failure to “check for errors”;
 - to facilitate the learner's self-orientation between knowledge and skills learned in the classroom, and skills learned in the workplace.

Teaching techniques: use of methodological approaches based on the pedagogical theories of reflexivity (e.g. “knowledge in action”) and specific teaching techniques (on-board diary, self-study, observation of working and collaborative practices), individual mentoring.

B) *Participation*

- Macro-objective: to stimulate processes of peripheral legitimation and inclusion of single students in group situations present in working contexts.
- Micro-objectives:
 - use stimulus-situations to foster shared relationships with users in work contexts without neglecting the consolidation of the different “identity codes” of the students;
 - promote the growth of the responsibility of the student in the processes of division of tasks and development of cooperative performance.

Teaching techniques: group work, mentoring techniques, didactic games, guided simulation.

C) *Agency*

- Macro-objective: to develop in the learner a motivational orientation to the extension of his / her experiences beyond the simple execution of the task in the working area.
- Micro-objectives:
 - strengthen the personal development of the learner through the lever of motivation intrinsic action;
 - experience the advantages of an orientation to the practice that may have the motivational reinforcement value;

- work on the lever of self-efficacy to reinforce the size related to the professional dress and skills related to the character of the young.

Teaching techniques: “autocases”, “problem de-briefing and problem solving strategies”.

D) *Capabilities*

- Macro – objective: to enable the learner to release new potential outside the classroom by developing a solid experiential experience on his ability to act and experiment specific skills in the professional context through the development of products, artefacts or results even in a real environment.
- Micro- objectives:
 - understand the advantages of concrete “functioning” processes in the context of real life (for example, the development of a professional habit like organising the sale of products made, the creation of “artefacts”, participation in exhibitions, public events or competition, the preparation of a promotional flyer, the design of a building using the Autocad program).
 - facilitate and guide the student’s ability to act towards his own project and towards the pursuit of objectives understood as values (also towards entrepreneurial capacity).
 - accompany the student in the process of acquiring responsible judgment skills through the exercise of the narrative imagination, and of empathy (Nussbaum, 2015).

Teaching techniques: “project management” techniques, psycho-educational methodologies to support the development of the self as personalized coaching. The educational support activities can develop observable outputs, as an organization of market opportunities for the products produced, development of websites for the dissemination of commercial news on products.

E) *Generativity*

- Macro-objective: to support the expansion of the motivational orientation of young people towards objectives of a wider spectrum than the experience of alternation or linked to individual and intersubjective aspirations.
- Micro-objectives:
 - orient the young towards entrepreneurial activities (start up, for example);
 - orient the young towards forms of cooperative work in which we can develop a “leap” forward with respect to future development objectives (design a crowdfunding project, for example)

Teaching techniques: Design training (Project work techniques), practice communities with other students through virtual environments, including innovative ones (eg gamification). Analysis of entrepreneurial good practices at desk research level or through micro empirical research with interviews and questionnaires. The project hypothesis identified above can be translated into an action plan if it becomes a shared plan between school tutors and company tutors thanks to a common action to negotiate results in terms of teaching objectives, methods and techniques used.

Section II:

VET teacher education

Vocational teacher education aims to equip future teachers with skills and knowledge they need in their future profession. This is a demanding task because VET teachers' work cover variety of responsibilities and vocational areas. Teaching is at the center but also supporting all students' learning processes and co-operating with working life are part of the work. Furthermore, VET teachers' education and work contribute to the quality of all vocational education and training. The chapters in this part of the volume focus on VET teachers' work and challenges they face in their work. For example, shortage of VET teachers and turn over in the profession can affect the whole VET system. Therefore, one important aspect is to find out what motivates people to choose VET teachers' career and what kind of expectations future VET teachers have as Jehee and his colleagues have studied. The knowledge and understanding of this can help to develop meaningful VET teacher education programs.

Not only VET students need new skills and competences, but also teachers need to learn new tools and new type of education and training to keep up in changes in working life and in societies, these skills are sometimes called as 21st century competences as in Teräs and her colleagues' study. Antera's study highlights what kinds of competences principals thought important for VET teachers, naming competences related to teamwork and organizational learning as those needed in work. Faath-Becker and Walker explore how video based tools can be used to support

VET teachers' competences and Gruber and her colleagues focus on new type of VET teacher program for highly educated people who already have a Bachelor degree. VET teachers' professional development is often emphasized when talking about new challenges, however, also the length of years in a profession and professional memory effect teachers' work in relation to students, as Sirk's study interestingly points out. Memories tend to grow sweeter with time, as an old phrase states.

Second Career Teachers in Dutch Secondary Vocational Education; Why Do Professionals Want to Become Teachers?

Michel Jehee*, Jeroen Onstenk,
Loek Nieuwenhuis & Marjo Wijnen-Meijer

Abstract: In this paper we present an outline and the preliminary results from a research project on second career teachers in Dutch secondary vocational education (VET). The high turnover rate of teachers in VET is the practical problem that is addressed. To solve this problem, knowledge of and insight in career switch mechanisms are important input. The aspect that we focus on in this paper is teacher career choice behaviour. What are motives to become teachers in secondary VET? We present preliminary results of interviews with 12 starting second career VET teachers. Themes identified are experience, motivation, expectations, orientation, support, working conditions and workplace conditions. These findings seem to have a common ground with other research outcomes. We compare our findings with earlier research. Work experience gives a secure base and the concept of fall-back career being their old occupation is unique compared to research on first career teachers.

Keywords: second career teachers, career switch, Factors influencing teacher Choice, VET.

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1. CONTEXT

For years it has been observed that many starting teachers in VET are leaving education again, often after only a short period. In this project we focus on second career teachers who start a teaching career in VET. 25% of these second career teachers leave education within the first or second year (van der Meer 2014). This fact raises a number of questions, such as how educational organizations (continuously) recruit new teachers (including second career) and how they stimulate retention. For successful recruitment it is important to be able to anticipate and respond to motives people have for choosing a career as VET teachers. That is why we choose the career choice perspective in this research project. The aim is to keep the workforce up to quantitative standards. Starting second career teachers contribute to this. On the other hand, it is just as important to have insight in the professional development process of the starting second career teachers for the purpose of stimulating their development and thereby motivate them to stay.

In this study second career teachers in VET are defined as persons who make a career switch and start, coming from a different profession, working as teachers mostly without formal teacher training. So they enter the teaching profession without being trained in the teaching competencies that are part of the formal qualification framework. For a number of years there has been a shortage of subject matter experts who start working as a teacher in VET every year. Educational institutions spend a lot of time and energy to ensure that education programs can be executed for all their vocational courses. Professional experts who make a career switch to education run the risk that they will soon

discover that their expectations about the teaching profession are not correct (Varadharajan 2014). It also happens that they experience insufficient support from the supervisor or colleagues or feel more and more that they are not competent for the teaching profession (Priyadharshini & Robinson-Pant 2003). If that is the case, there is a good chance that they will start looking for alternative work or consider a return to their old profession. The practical problem central to this study is how to prevent unnecessary drop-out of starting second career teachers in VET. This is a crucial factor in making sure there will be sufficient teachers who are motivated and pedagogically and didactically competent to be able to execute the educational program.

The Dutch VET context

Secondary vocational education (MBO) in the Netherlands prepares students for a wide range of occupations. VET courses are given at four different levels of training, each leading to a specific job qualification:

- level 4: middle-management training;
- level 3: professional training;
- level 2: basic vocational training;
- level 1: assistant training.

A level 4 VET certificate is the entry level to start a higher vocational education course (HBO) (Government of the Netherlands, 2020). Although students can enter the world of work after completing each level there is a tendency and they are stimulated to continue training on a higher level.

For each VET course there are two learning pathways: school-based training (BOL) where practical training takes up between 20% and 60% of the course; and firm-based training (BBL) where practical training takes up more than 60% of the course. Both learning pathways result in equivalent qualifications. The system stimulates educational career. Its four-level structure enables many students to move up the education ladder.

Education is compulsory for pupils from 5 to 16. Those aged 16 and 17 (on August 1 of any year) without a general or basic vocational qualification at upper secondary level are required to continue learning, the so-called qualification duty (*kwalificatieplicht*) (Cedefop, 2016). So there is compulsory VET for those students who do not have successfully completed level 2 or higher until they turn 18.

Growing demand for teachers

In view of developments in society such as flexibilization of labour and work, the growth of the economy and the unbalanced age structure of teachers, there is an increasing shortage of teachers (Adriaens, Fontein, & De Vos 2018). Two mutually reinforcing factors, namely: the growth of the economy in general resulting in a growing number of vacancies and the aging population of teachers, lead to an increasing demand for VET teachers. These two factors and the increasing shortage of teacher students leads to a growing demand for VET teachers while the total sum of teachers decreases. On top of this there is a qualitative mismatch in the supply chain due to the fact that there are no teacher training colleges dedicated to VET which does not stimulate the influx of teachers in VET. In view of the

personnel demography in the VET sector, it is highly likely that VET schools will have a ‘replacement’ demand in the coming years that covers approximately one third of the workforce (Van der Meer 2014).

2. PROBLEM EXPLORATION

In secondary vocational education students are prepared for the world of work. They receive education and training in order to become competent starting professionals. VET requires highly competent teachers with both pedagogical skills and practical work experience. These teachers can introduce the world of work to the students and bridge the gap between theory and state of the art practices. Starting second-career teachers in VET are mainly subject matter experts and less equipped in the field of pedagogical – didactic knowledge and skills. This often causes problems in teaching practice. In this research the starting situation and the career development of the second career teachers are discussed in more detail.

Choice behaviour of potential teachers

There appears to be interest in society to become a teacher. Redden (2008) indicates that there is considerable potential interested in a job as teacher, 42% of the people who have at least U.S.A. – college level expressed an interest, not specified to VET or general education) . In 2018 in the Netherlands, Motivaction (2018) executed a study in the Netherlands which supports this result: 40% of the working population is potentially interested in a job in education, including VET

(Hilbink, Wolthoff, Kuipers & Gielen, 2019). In other words, there is a considerable amount of people that in theory consider becoming a second-career teacher. In order to actually tap into this reservoir, it is important to know more about motives that play a role in the choices second-career teachers make. The American study by Redden (2008) reveals two motives for people to consider a job in the educational field. The first motive is the impression that a job in education contributes to personal career goals such as the expectation that there will be a better balance between work and private life. The second motive is that it contributes to society, for example by transferring professional knowledge to a new generation. The study by Motivaction (2018) draws the same conclusions as Redden (2018) and adds a third reason: helping students to realize their full potential.

Obstacles to get started as VET teacher

One possible impediment for new second career teachers is that they do not yet have a legal certification which allows them to teach. Since 2007 in the Netherlands, every teacher must have acquired the competences as stated in the Educational Occupational Act (BIO Act). The assumption is that having a formal certificate of competence guarantees and stimulates the quality of teaching. However, this is for VET complicated, there are no formal teacher training courses for all occupations. Subject didactics has no priority in the Dutch vocational educational system as far as teacher training courses are concerned. In 2014, the minimum requirements for obtaining the certificate for teaching by second career teacher students changed. To over-

come these obstacles a number of government initiatives aimed at decreasing the shortage of teachers were started. There is a growing interest in alternative routes to teaching certificates. In VET we have the Pedagogical Didactical Certificate (PDG) programs, in which teacher training institutes together with VET institutes have shared responsibility for training and certification of VET teachers, however these certificates do not have the same status as a diploma from a teacher training college and is only valid for the one school. Government grants are available to enable VET institutions to hire new second career teachers and enable them to follow a PDG program. In the PDG program it is a requirement to absolve the course within two years (Mbo-raad, 2014). It is also possible to follow an alternative (shortened and part-time) teacher training course. As a final example of government stimulation; in the collective labour agreement on labour rights the government, as stakeholder, stimulates a set of rules for starters that includes e.g. a reduction in workload, time for in company training, etcetera.

Relevance of the study

A relatively large amount of research has been done on second career teacher students who start work in general secondary education and follow a teacher training course (Troesch & Bauer, 2017; Tigchelaar, Vermunt & Brouwer, 2012). There is not much scientific knowledge about the professionals who enter VET without formal teacher preparation. Berger & D'Ascoli (2012) and Berger & Girardet (2015) have investigated factors that play a role in the choice to start as a teacher in vocational education in the Swiss context. This research is based on the 'Factors Influ-

encing Teacher Choice model' (Richardson & Watt 2005, 2006; Watt & Richardson, 2007, 2008) which was not specifically aimed at vocational education and where students of teacher training colleges formed the research population. Watt & Richardson (2007) state that their empirical findings are useful for attracting people from other careers into teaching. They stress the importance to focus on a variety of motivational factors like the opportunity to shape the future and enhance social equity and not just the aspect of having the opportunity to work with children and making a social contribution.

Not much is known about the development of VET second career teachers. Moerkamp & Hermanussen (2013) describe identity types that characterize vocational teachers. They distinguish three orientations in the professional identity of teachers: expertise on didactics, applicant of pedagogical skills and focus on the practical skills (compare it to an on-the-job work instructor). Klatter (2015) focuses on the role that teacher education could play in the context of developing a professional identity for vocational education teachers. De Bruijn (2009) mentions two parts (worlds) of the identity of the VET teacher that must be taken into account; that of the (subject) teacher and that of the professional expert.

The second career teachers as subject in the current study start their teaching career without a formal teaching certificate or even without having started (or planned to start) a teacher training course.

With a correct approach towards potential candidates (second career teachers), supply and demand could be better matched. For the work of recruiters, supervisors and e.g. induction policy at VET institutions, it can be helpful if there is insight into the

motives second-career teacher candidates have to opt for a VET teaching job. Expectations that candidates have about the teaching profession and experiences in previous careers influence the choice process to change career. This insight can be a reason to take specific actions that might reduce or prevent unnecessary job endings.

Research questions

The following research questions are formulated:

Main question

Which factors influence the career development of second career teachers in secondary vocational education?

Sub-questions:

- 1. Which factors play a role concerning second career teacher's choice to start a teaching job in VET?*
- 2. How do starting second career teachers develop themselves in the first phase of their educational career. Which factors play a role in this at an individual and organizational level?*

3. THEORETICAL FRAMEWORK

This research project concerns two themes. The first theme concerns the question of which factors play a role concerning second career teacher's choice to start a teaching job in VET. The present paper focusses on this theme. The second theme focusses on the question how new second career teachers develop themselves in the first phase of their educational career and the factors / variables that play a role in this. In a future paper this topic will be addressed. For the mentioned

two themes, a coherent theoretical model has been sought to give meaning to the data.

This research can be characterized as a qualitative descriptive research: the analysis of the data is aimed at understanding. The theoretical insights are used to describe and understand results from the gathered data. Some of the insights are presented below.

Choice process of career switchers

Second career VET teachers are a heterogeneous group in terms of age, occupational groups, personal circumstances and beliefs. Work and private circumstances in addition to age and career phase play a role in the career choice decision-making process (Tigchelaar, Brouwer & Korthagen, 2008). Multiple factors play a role in the choice to change careers and to choose an educational career, these factors are varied and sometimes there are contradictory considerations (Anthony & Ord, 2008). We do not have much knowledge about choice patterns or underlying mechanisms as far as it concerns second career VET teachers. In this paragraph we present ideas on this matter from scientific literature and present a theoretical framework that enables us to illustrate, describe and understand the choice process second career VET teachers go through.

With regard to the choice process it is assumed that choice behaviour can be understood as an individual and rational cognitive process (Dekker 2016). Rational choice theory (RCT) assumes that people are always striving for optimal results (Dekker 2016). It is assumed that people rationally calculate results of a choice in advance and that their actions will be based on it. Over

the years, this theory has been criticized (WRR 2009, Brouns, 1996, Fischer, 1996). One of the criticisms is the question of who determines what is rational. Also, the context in which the question is asked and answered differs and so is the behaviour. Critics say the RCT ignores complexity. Although rational choice theory can be useful to *describe* choice behaviour, it does not *explain* choice behaviour (Brouns, 1996, Fischer, 1996). In its publication the human decision maker (De menselijke beslisser, 2009), the WRR showed from various angles which factors influence choice behaviour. This puts rationality and the focus on self-interest into perspective. Ajzen (1991, 2002) emphasizes that choice behaviour involves an intention to act. This intention is influenced by three factors; the first factor is the degree to which a person thinks positively about the choice, the second factor is experiences of support in the choice process, the last factor is the degree to which the person is convinced that the choice will lead to a success. Ajzen formulates his planned behaviour theory (PBT) on the basis of these different factors. This study combines insights from the RCT as well as the PBT. Eccles (2009), who also assumes that the choice process is a rational-cognitive process, combines ideas from theories of socialization and social influences to explain choice behaviour. Success expectations, trust, acquired competences and personal efficacy are seen as important influencing factors in behavioural choices.

Not every career switcher fits the same model. They have several reasons for pursuing a career in education. For example, changes in family circumstances such as being single or having a partner, caring for children, working full-time or wanting to work part-time can be pragmatic reasons for career changers to choose a career in education (Priyadharshini & Robinson-Pant,

2003). These changes are factors that influence the willingness to look for another job and are therefore relevant for those entering teaching in vocational education (Low, Ng, Hui & Cai, 2017). In addition to these pragmatic reasons, research into the backgrounds of the career switch shows that one reason for the switch was that they found a profession that better suits their personal goals and ambitions “fitted more comfortably with their goals and ambitions than the previous careers they had pursued” (Watt & Richardson, 2008, p. 417). It also appears that second career teachers are interested in the professional teaching knowledge and obtain satisfaction from teaching as an intellectual challenge (Priyadharshini & Robinson-Pant, 2003). This is in line with the results of research into midlife career changers which shows that often these people are looking for a challenge in a different profession. A career that challenges them intellectually and where they are attracted to their interest in learning and teaching (Grier and Johnston, 2009). In short, it has emerged that a multitude of factors play a role in the decision to pursue an educational career (Richardson & Watt, 2005, p. 52). A theoretical framework was developed in 2006 (Watt & Richardson, 2007) based on the expectancy-value theory of Eccles (2009, 2011). This framework is known as the ‘Factors Influencing Teaching (FIT) -Choice’ model and the instrument developed is aimed at conducting quantitative research among those entering the teacher training program for general education (Fokkens – Bruinsma & Canrinus, 2012). Berger & D’Ascoli (2012) have adapted the questionnaire for those entering vocational education. In doing so, they took into account the Swiss culture and context in which they conducted their research. They distinguish the following six main factors that influence

the choice for a career in vocational education: overall satisfaction, working conditions, social importance, self-efficacy in the context of workplace learning, professional interest and interest in coaching and training of students. Their research revealed the following three clusters of factors called dimensions: Competence, intrinsic value and social added value. The opportunity factor emerged from the study as reasonably influenceable, which is the reason why it is included in the study of choice motives for an educational career in VET (Berger & D'Ascoli, 2012; Berger & Girardet, 2015). Opportunity or as Berger & D'Ascoli (2012) describe 'choice by opportunity' is defined as a passive motivation to choose teaching. For instance, when the chance is given to become a teacher in a vocational school without a predefined intention to choose teaching as a profession. Low, Ng, Hui, & Cai (2017) formulate a number of critiques of the Factors Influencing Teaching Choice model and the instrument associated with it. In their opinion the importance of the socializing factors compared to the other choice factors is given less recognition. The research of Low et al. builds on the research of Watt & Richardson (2007) and enriches it by means of qualitative research techniques (Low et al. 2017). Their results are ordered by triggers and drivers and summarized as follows: Triggers; Prior teaching experiences and social influences Drivers; Intrinsic value, social utility value and attainment value. As mentioned, the theoretical insights mentioned above are used in this study to describe and understand results from the gathered data.

4. METHODOLOGICAL APPROACH

This research is a qualitative descriptive research, the analysis of the data is aimed at understanding. The design of the study corresponds the type of research questions “why” and “how”. In this research an outsider position was deliberately chosen. There has been made no attempt to actively intervene, either by the research or by the researcher. The description of both themes: choice motives and the development during the first phase of the teaching by starting second career teachers focuses on a research population consisting of persons who have actually already started a career in education.

In interaction knowledge is created. In view of the above, qualitative methods have been chosen such as interviews (McGrath, C., Palmgren, P., Liljedahl, M. 2019), learner reports (de Groot, 1961) and case studies (Yin, 2018). Yin (2018) considers research based on case studies to be ideal for research questions that focus on how and why in events over which the researcher has little or no control. These qualitative methods create opportunities to collect data at a concrete and detailed level in order to understand more fully the perception and motives of the participants regarding their choice of career and their development. The advantage of this multi-method approach is that gathering the data follows an iterative and cyclical process which contributes to the richness of the data. The data can be presented in detail, allowing us to understand the individual and common experiences of the starting second career VET teacher. Explorative and descriptive research as chosen in this research is then appropriate. The aim of the research is to systematically and accurately describe characteris-

tics and / or behaviours of a population, not to test hypotheses but to detect possible patterns in them (Linting, 2011).

The focus is on generating descriptive knowledge. How do the participants actually experience motives and career change? Meaning and sense making is important here. In this research 12 starting second career VET teachers are interviewed about their choice motives to make a career switch. The interview had a duration between 40 and 60 minutes and data were transcribed, and double checked. Data were then analysed by three researchers to identify themes within the data. Specific techniques adopted for data analysis were the constant comparative method and open coding (Boeije, 2014) for identifying themes.

Specifically, 1) three researchers individually read a sample of transcripts and identified themes (open coding) to any meaningful units of narratives (e.g. experience, support); 2) compared the themes with each other and discussed to reach agreement on any particular theme. Then the three researchers individually went through all 12 transcripts and identified themes, during which process several rounds of sharing and discussion were conducted.

On the basis of the results of the research, some portraits are constructed of a number of “ideal-typical” second career VET teachers, in the form of case studies. This could include a second career teacher who opts for income security and consciously seeks a suitable work-life balance. A second career teacher who explicitly chooses to pass on his / her profession to the next generation and, as a final case, a second career teacher who wants to contribute to the development of young people, based on altruistic motives. The data from the interviews and learner reports are used to describe themes that are across all cases. In

the description this can be done via a clustering of the data based on time course (process phases) choice for educational career, development in the first phase of the career and choice to stay or leave the teaching profession.

5. PRELIMINARY FINDINGS

Interviews were conducted with 12 respondents and transcribed. Three researchers studied the transcriptions using an elaborated coding scheme. Seven main themes have been identified through open coding. These themes were discussed and strengthened until agreement was reached on seven relevant themes. The themes are:

- Experience
- Intrinsic & altruistic motives
- Expectations
- Orientation
- Support
- Working conditions
- Workplace conditions

The analysis resulted in 2 to 3 themes that were mentioned most often / most importantly per respondent. We looked overall which themes were named as most important and whether there were combinations of themes. In this way coherence between themes became clear.

In the process of a career switch multiple themes play a role. These themes are weighed to come to a decision.

The frequency of the themes over the interviews is as follows:

Theme	Frequencies
Experience	111
Intrinsic & altruistic motives	100
Expectations	81
Orientation	67
Support	62
Working conditions	40
Workplace conditions	22

Below the frequency of the themes as shown within the interviews.

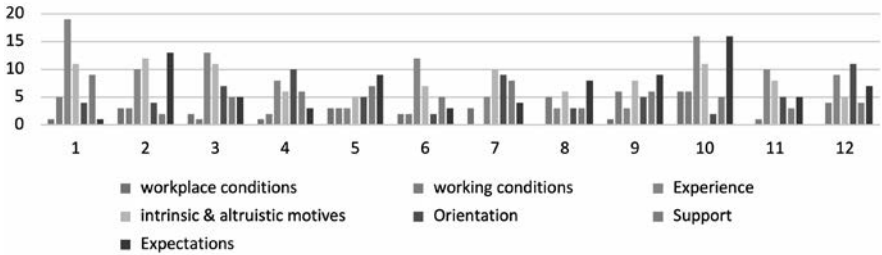


Figure 1: Frequency of themes within interviews

This overview shows that ‘experience’ has the highest score (111 times) followed by ‘Intrinsic & altruistic motives’ which scored 110 times. ‘Expectations’ is mentioned 81 times. ‘Orientation’ follows with a score of 67 times. The three least mentioned themes are respectively; ‘Support’ (62), ‘Working conditions’ (40) and the least mentioned theme ‘Workplace conditions’ (22). In order of importance:

Experience

Experience consists of what someone has been through, has learned and what this person can apply (earlier learning).

It seems prior teaching experiences are an important factor to stimulates one's interest in teaching. About half of those interviewed say that experience is a strong motive, a starting point to make the career switch. All interviewees mention experience as a motive. It appears that for most second career VET teachers there is a line (career path) that can be characterized as follows: starting as a vocational/professional worker, over time they acquire tasks relating to the supervision/coaching of personnel, a next phase is that one is asked whether one opts for an active role in apprenticeship or in-service training or as a guest lecturer at a VET institute. For those who have followed such a career path the career switch is perceived as a fluid transition instead of being seen as an abrupt end to one career and the start of a totally different career. Eda: *"It is a gradual change from one job to the other, I am curious to see students in another context"*. Mick sees a lot of comparisons between his old and his new job: *"I used to give presentations, coached people at work, had no fear to stand in front of a group of people"*. Yet almost everyone indicates they are exercising a different profession (the profession of vocational education teacher) right from the start as a second career teacher.

Intrinsic & altruistic motives

Motives can be described as the underlying reasons to start acting.

Motives to change careers can be manifold. Participants say they would like to transfer their profession to the next generation. *“I just want to make sure there will be well-qualified people who will be working in jobs which we really need, and I would like to contribute to that”* (Sterre). Another reason mentioned is that they want to develop themselves, learning new things in different surroundings. As Eda formulates it: *“I really enjoy learning and I also like continuous change. It gives me the opportunity to grow”*. Coaching young people and giving them an introduction in and preparation to the professional world of work is a motive for several participants to make the career switch. Working with people focused on professional growth and development and developing oneself are mentioned by several participants as motives.

Expectations

Expectations are formed by the impressions of education and the associated beliefs regarding education gained by, among other things, one's own experiences. Expectations can be formed with regard to all possible facets of the teaching profession: tasks, cooperation with colleagues, pedagogical – didactic action, self efficacy, school organisation, etc.

What is striking about the expectations towards the new profession is that they originate primarily from schooling that inter-

viewees followed in the past, rather than from vocational experience and even less from their experience as vocational trainers. In this respect their constructed image of vocational education is traditional. But the second career teacher is expected to have something to offer when it comes to current professional knowledge and skills. They have the expectation that the colleagues in their team will listen to them and appreciate their contribution. They also expect the need to develop themselves further in the field of pedagogical – didactic knowledge and skills.

Orientation

Activities undertaken with the aim of forming a (as complete as possible) image of the profession of vocational education teacher and the relationship that this has with regard to the decision-making process to pursue a new profession.

All interviewees have conducted orientation activities on what it implies to be a teacher in vocational education. Mentioned are observations in classrooms, conversations, interviews and volunteer work as instructor. In one case, for years the ambition has been to ‘go into education’, *“In fact I have said for over 20 years: I want to go back to education. I never thought you needed a teacher diploma or a bachelor degree or whatever terms they use nowadays”* (DirkJan). On the other hand, it is also possible that the initiative to start thinking about a teaching career was taken by another (colleague or someone from a VET institute): *“We find you suitable”* (Moh). In this respect, there is a certain amount of coincidence, without it being suggested to them they would not have yet thought of a career switch to VET.

Support

Support can take many forms: social, moral, material or financial. There are also several target groups to distinguish: family, friends, acquaintances, colleagues and former colleagues.

All participants indicate that they feel supported during the process of their career switch. A majority did not discuss it with their former employer, but gets support from colleagues “*I was tipped by a colleague: have you no interest in an educational job?*” (Anick). Friends and acquaintances are often experienced as supportive and stimulating. Everyone discussed it with their loved ones and experienced support in making the decision. One participant indicates that her idea and conviction regarding the career switch is dominant and is mainly her own responsibility: “*the moment I make a choice I stick by it. That is actually very antisocial. But it is because I notice that I need that spirit and the change to keep my enthusiasm*” (Anick). In particular, the risks with regard to job security and change of routines in work and private life are highlighted in families where support is experienced and needed.

Working conditions

Working conditions are the conditions under which work is carried out, for example with regard to salary, working hours and holidays.

The theme of working conditions is hardly mentioned during the interviews. Depending on where they have worked, a career

in vocational education is, for the individual who did mention working conditions, an improvement. The salary is attractive but also the loss of irregular working hours is mentioned. Another aspect is the possibility to combine school aged children with a job that also has school holidays. *"I get paid better and having children of my one, it is also really nice to be able to spend the holidays with them"* (Jane). However, working conditions play a moderate role in the decision to change careers. Only one interviewee (Eda) indicates that there has been a negative effect in terms of working conditions through the career switch.

Workplace conditions

Workplace conditions are the physical, social and psychological climate in which work is carried out. In the physical climate, proximity to colleagues / students (aggression) at work can also be considered and the physical load of employees (amount of lessons, intermediate movements between locations, actions that are physically stressful such as practical lessons with, for example, lifting, bending, turning, etc.). Examples of the social climate include; bullying and gender discrimination. In the psychological climate one can think of sexual harassment, workload and the sense of security

Three second career teachers (Sterre, Mick and Jane) did not provide any information that could lead back to a motive related to workplace conditions. They might not have clear and detailed expectations. Moh is explicit in formulating a desire for autonomy in what he does and decides. He expects autonomy (freedom of action) and if that is not the case then he will be disap-

pointed. Eda mentions that she is confident that the working conditions are up to standards, *“I got the impression that much is possible, schooling, peer support, distribution of tasks”*.

Another result derived from the interviews is that second career VET teachers give a different meaning to the concept of fall-back career compared to first career teacher students. When teaching does not work out as expected the second career VET teachers see getting back into a job in line with their first career as a feasible option. First career teacher students see teaching as a fall-back career option when new endeavours do not work out.

5. DISCUSSION

Research on factors that influence the choice to become a teacher in secondary vocational education as a second career is scarce. The FIT-choice model (Richardson & Watt, 2006) focused on student teachers and on second career student teachers. Berger & D’Ascoli (2012) have done research in vocational education using a adjusted questionnaire based on the FIT-choice questionnaire. In the present paper used a qualitative approach to find out more detailed information about the choice process made by experts in the field of work for a career switch towards vocational education. As Low, Ng, Hui & Cai (2017) mention their qualitative approach builds on and extends the FIT-Choice framework. In this paper we describe themes that can be identified in the choice process that expert craftsmen go through pursuing their ambition to become a VET teacher. Although the participants in the different research differ and the context is not the same there are similarities in the results.

The participants have all made the choice to be a second career teacher in VET. In this regard there are limitations to this study for we have no data from the population that does not choose to become second career teachers. Most of them note similarities between their old job and their teaching job. However, at the same time they explicitly indicate points of personal development in order to become more secure and effective as a VET teacher. Work experience gives them a secure base to act in teaching situations. They have the conviction that students have a longing for first-hand stories concerning work situations. These are components that gives the second career VET teachers the idea that they have a good starting position as a VET teacher.

For second career VET teachers the concept of a fall-back career is having a completely different meaning compared to other research on teachers. In the latter fall-back career is understood that teaching is not the first choice for a career (e.g. Low, 2017). The participants in this research project consider their fall-back career being their old occupation, what they did before considering becoming a teacher. Especially in the first phase of teaching this gives them some stability, and a secure feeling that whatever happens the way back (to their old occupation) is a realistic option and an assumed guarantee of a job and income. There seems to be a pattern as a career path: starting as a vocational / professional worker, many acquire tasks relating to supervision / coaching of personnel, next they seek an opportunity for an active role in apprenticeship guidance or in-service training or as a guest lecturer at a VET institute. The final step is to apply for a position at a VET institute as a second career teacher.

Second career VET teachers are as a group different from student teachers who do not have an established working career until now. External motivational factors such as salary, working hours et cetera do not play a prominent role in the interviews.

The theme workplace conditions has hardly been mentioned during the interviews. Perhaps this was due to the fact that the participants could not yet compare the old and new conditions. However, there are apparently not many expectations on this subject during the process of careers switching. As mentioned, the qualitative approach has given us the opportunity to understand the individual and common experiences of the starting second career VET teacher.

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Video-based test instrument for the assessment of professional competence in the vocational teacher training course

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Abstract: One objective of the Teacher Training Program for Vocational Schools in Germany is to enable students to plan, perform and reflect on effective teaching by developing professional competence of future teachers. However, reducing professional competence to knowledge does not seem to be very successful, since university graduates often feel not adequately prepared to translate their knowledge into effective action. Video vignettes (VV) represent one approach for achieving those objectives and enabling computer-based diagnostics of professional competence. The basis for the development of the VV is Lindmeier's model of professional competence, which comprises the facets of reflective competence (RC) and action-related competence (AC). This work examines the questions whether, considering the above-mentioned approaches, a criteria-guided development of VV is possible and how their evaluation objectivity turns out to be. First, real lessons are recorded by means of standardised videography and video sequences containing quality characteristics are identified and assigned to RC/AC.

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Keywords: visual and depth structures, professional competence, industrial-technical, video, vocational training

1. INTRODUCTION

The university education for the teaching profession at vocational schools in Germany is intended not only to enable students to work scientifically but also, among other things, to create the conditions for a successful transition to preparatory service (Herzog & Makarova, 2014; Saas et al. 2020). The aim is to develop the professional competence of future teachers. A frequent focus of empirical work is on professional knowledge as part of professional action or professional competence. However, the reduction of professional competence to the knowledge facet (based on Shulman (1986) pedagogical knowledge (PK), technical knowledge (CK) and didactic knowledge (PCK)) seems to fall short, as university graduates do not feel adequately prepared for the complex requirements of teaching (Böhner, 2009). To solve practical problems in concrete teaching situations, prospective teachers feel unable to translate the content knowledge (CK) and pedagogical content knowledge (PCK) they acquired during their studies into effective action (H. Gruber et al. 1999).

The national curriculum standards for teacher training at vocational schools (Kultusministerkonferenz [KMK], 2004) and the basic curriculum for vocational and business education (Sektion Berufs- und Wirtschaftspädagogik der Deutschen Gesellschaft für Erziehungswissenschaft [BWP], 2014) demand an early orientation of the studies towards professional requirements with the aim of continuous competence development. In order to pro-

mote problem-solving thinking and action, students should be systematically confronted with problems of their future professional practice (Saas et al. 2020). In this context, Hatch et al. (2016) point to a long-standing problem in the preparation for many professions: the gap between abstract bodies of professional knowledge and the “craft knowledge” of practitioners.

In addition, the curriculum issued by the KMK, which is to be implemented within the framework of university education, forms the regulatory framework for teacher training in Germany. The KMK’s curricular demand for teacher training studies for vocational schools (BBS) is to enable students to plan, implement and reflect on competence-enhancing (high-quality) teaching (KMK, 2017, pp. 76–77). These demands make it clear that the KMK assumes an understanding of professional competence that includes both knowledge elements and practical competences, without, however, explaining this (Walker & Faath-Becker, 2019, p. 16).

Teacher training at vocational schools in Germany is conducted at the university for the first phase (studies). This includes a five-year course of studies in educational theory and science. The regular course of study “Vocational Education” is divided into a Bachelor’s degree (three years) and a Master’s degree (two years). Before and during their studies, students take part in internships oriented towards specialist science and related to engineering. After the course of study, teachers are usually trained for one and a half to two years at a selected school and a government institution (“Staatliches Studienseminar”). The “preparatory service”, also called the second phase, combines professional advice and support in didactic aspects of the subject with practical experiences in teaching (M. Gruber et al. 2019).

At the end of teacher training, two comprehensive exams are taken before the degree is awarded: the first at the end of the first phase of university training with typical written and oral knowledge tests and the second at the end of the second phase of pre-service teacher training in schools, in which prospective teachers have to demonstrate their (subject) didactic and pedagogical (PC) skills in concrete teaching application and its theoretical foundation (Blömeke et al. 2015, p. 10).

An analysis of the nationwide curricula of the Business Education degree programme makes it clear that a systematic examination of the competences required for everyday teaching is often neglected in didactic courses (Kuhn et al. 2018), despite all locations providing for practical school studies, which usually include a preparatory and follow-up event to accompany a school internship. This is an indication of the explicit promotion of reflective competences that are necessary for planning and reflecting lessons. However, the promotion of action-oriented competences is usually implicitly carried out within the framework of individual teaching attempts at schools and not explicitly considered in the context of higher education (Saas et al. 2020).

The situation in the study programmes for the industrial-technical, vocational disciplines of teacher training is very similar: To date, university tutorials on teaching methodology (PC) for the vocational teaching profession have been focused almost exclusively on the planning of lessons (e.g., in the form of written elaborations on a fictitious teaching sequence). Until now, the students' competence to carry out lessons or to reflect is being largely disregarded.

This paper presents a video-based tool to capture action-related elements as part of the professional competence of prospec-

tive teachers in university teacher training. Essential aspects here are, on the one hand, the presentation of models of professional competence (section 2.1) and, on the other, the understanding of competence-enhancing or quality teaching (section 2.2). Both aspects are combined to form an action-oriented model that takes into account both knowledge and (action-oriented) competence components (section 3). The extent to which the model generated in this way is suitable for identifying video vignettes (video sequences), which contain action-related components of competence-enhancing teaching, how objectively these features can be identified in the video sequences and how these can be integrated into an online-based environment (sections 4.1, 4.2 and 4.3) are additional goals of this article.

2. STATE OF RESEARCH

The fields of action described and the resulting requirements give rise to three starting points for examination: the professional competence of teachers, the quality of teaching and, on the technical part, video-based instruments to assess both aspects. The complexity of teaching is due, among other things, to the fact that personal, individual dispositions (PID model by Blömeke et al. (2015) and model by Zlatkin-Troitschanskaia et al. (2019)) of both teachers and learners influence its course and, in particular, its effectiveness. A possible approach also consists in the professional perception (Seidel et al. 2010) of teaching. The focus of this work is first to create an objective basis for the assessment of professional competence and then deduce from it effects on the quality of teaching at a later stage. Therefore, the quality characteristics of teaching must be taken into account

when designing an instrument for assessing professional competence. Due to the sometimes highly spontaneous character of teaching, an instrument is needed that comes close to the reality of teaching and enables observers to look at the situation as if they were actually present in class. Video-based instruments are also suitable for this purpose, as they offer both visual and acoustic dimensions, can be recorded and viewed from different perspectives and can be repeated as often as required.

2.1 PROFESSIONAL COMPETENCE

The comments on the professional competence of student teachers and their outlined problems of transferring the knowledge acquired during their studies to real teaching situations in preparatory service (section 1) clarify that the gathering of action-related competences is relevant. Accordingly, a model of professional competence must include both knowledge and action-related competence facets.

Model by Lindmeier (2011)

Lindmeier (2011) proposes a model of professional competence that meets these requirements. In addition to knowledge components, competence components are represented in this model (Figure 1) (Lindmeier, 2011).

The professional knowledge of teachers with the components specialist knowledge, subject-related didactic knowledge and pedagogical knowledge, based on Shulman (1986), stands alongside action-oriented professional skills. Competences are thereby understood in the sense of Klieme and Hartig (2007)

as requirement-specific achievement dispositions and thus understood more broadly than the knowledge components (Lindmeier, 2013). Lindmeier's examinations of these teacher cognitions are also reflected in the analytical part of the PID model from Blömeke et al. (2015). The PID model is about the transformation of competence into performance, mediated by situational skills of perception (P), interpretation (I) and decision-making (D).

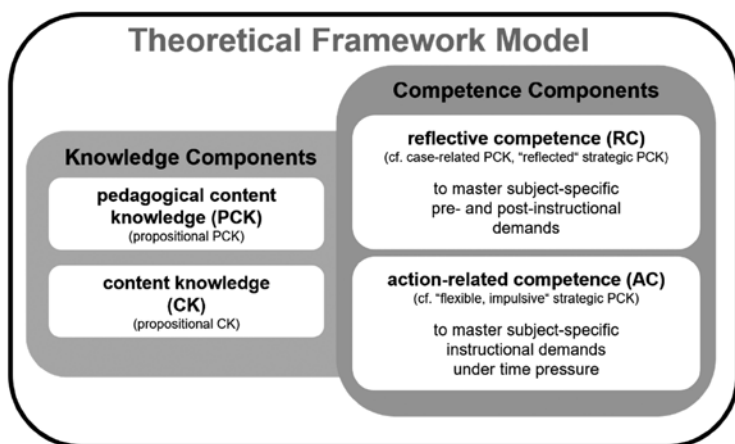


Figure 1: Competence structure model according to Lindmeier (2011)

The knowledge components (Figure 1, left) comprise the basic pedagogical content knowledge (PCK) and the content knowledge (CK), which form the basis of professional action. The competence components (Figure 1, right) are again divided into a component of reflective competence (RC) and a component of action-related competence (AC). In this model, action-related competence components are thus formulated as a component of professional competence (Lindmeier, Heinze, & Reiss, 2013).

Reflective competence (Figure 1, right, above) “is a term used here to describe domain-specific professional skills that are required in the preparation and follow-up of lessons (reflective competences, RC). The requirements include, for example, tasks to be performed in the planning of lessons”. “Reflective competence therefore includes skills that teachers need on the basis of their basic knowledge in order to master the professional demands outside the actual teaching process. In this context, the reflective handling of the respective knowledge is characteristic” (c.f. Schön, 2002, reflection-on-action; (Lindmeier, Heinze, & Reiss, 2013, p. 105).

“Further professional requirements arise from the superordinate “core business” of teaching. Ideas or mistakes made by learners can create challenging situations which can lead to learning opportunities or require a special reaction from the teacher, e.g. to prevent the development of misconceptions. Teaching situations are generally characterised by the fact that they require a spontaneous but also technically adequate reaction of the teacher. Time pressure does not allow the teacher to activate reflective processes outside the action (cf. Schön, 2002, reflection-in-action).” The action-related competence (AC) (Figure 1, right, below) “is determined above all by this spontaneous and immediate requirement character.” (Lindmeier, Heinze, & Reiss, 2013, p. 106)

Model by Zlatkin-Troitschanskaia et al. (2019)

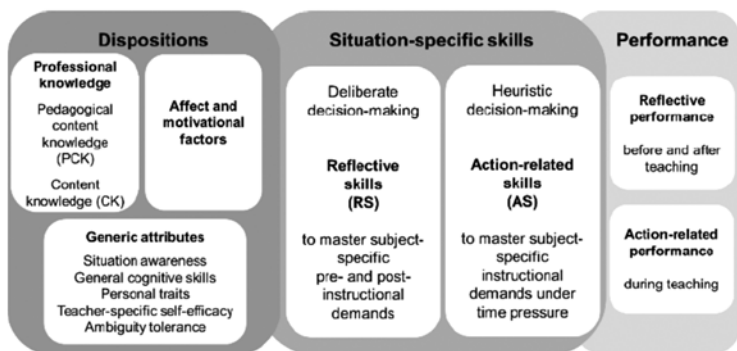


Figure 2: Competence structure model according to Zlatkin-Troitschanskaia et al. (2019)

Zlatkin-Troitschanskaia et al. (2019) draw on the Lindmeier model (2011) and distinguish between action-related and reflective competences. This holistic approach comprises two levels: a latent one with two areas (Figure 2, left: dispositions; centre: situation specific skills) and a manifest one (Figure 2, right: performance).

According to Zlatkin-Troitschanskaia et al. (2019), dispositions of teachers (Figure 2, left, dispositions) include knowledge components (cf. Figure 1, left) as well as generic characteristics and motivational factors as a basis for all teaching. According to this model, the quality of this teaching action is manifested in the reflective or action-based performance (Figure 2, right, performance) of the teachers. This requires situation-specific skills (Figure 2, centre, situation-specific skills): on the one hand, the (direct) reaction of prospective and experienced teachers to real instruction (i.e., AS) (Figure 2, action-related skills) and,

on the other, the ability to prepare and follow-up instruction (i.e., RS) (Figure 2, reflective skills) in the specific discipline (Zlatkin-Troitschanskaia et al. 2019). This model thus focuses on those situation-specific skills in which university graduates themselves do not feel adequately prepared (Böhner, 2009).

2.2 QUALITY OF TEACHING

Teaching action always raises the question of the quality of these actions – regardless of a distinction between reflective (RC) and action-related (AC) competences. The consideration of the understanding of competence-enhancing or quality teaching can create a possible approach here.

Quality teaching

Following Berliner (2005), quality teaching represents the synergy of good and effective teaching. According to Berliner (2005), good teaching is characterised by the fact that it follows normative principles and current standards of the field. A second evaluation criterion for teaching is its effectiveness (Berliner, (2005). Teaching is considered effective when it achieves the desired goals. The goals of teaching can be manifold, such as individual learning success or collective, short or long-term goals (Kunter & Ewald, 2016). In addition, a distinction can be made between the acquisition of subject-related knowledge and the development of interdisciplinary competences as learning objectives, as well as between objectives at the cognitive (knowledge, skills) or the emotional-motivational level (e.g., development of interests, promotion of self-esteem) (Kunter & Ewald, 2016). The extent to

which teachers actually achieve these goals in their teaching can be described, for example, by the three fundamental dimensions of teaching quality (Klieme & Rakoczy, 2003; Praetorius et al. 2018), which are described in the next section.

Berliner (2005) considers with this distinction the empirical findings on the low effectiveness of teaching subjectively perceived as “good” as well as on the higher effectiveness of strongly directive forms of teaching and combines them to an idea of “quality teaching”. In this context, Kunter and Ewald (2016) emphasise the central role of scaffolding (type of support and structure) in open teaching settings.

Visible and depth structures

According to Kunter and Ewald (2016), it does not make sense to view and evaluate lessons superficially, but always to include interactions that are not easy to evaluate at first glance as well as the role of learners and teachers. A meaningful conceptual distinction in this context – dating back to Oser and Patry (1990) – is that between the visual and depth structures of teaching (Kunter & Trautwein, 2013; Oser & Baeriswyl, 2001; Seidel, 2003) (Kunter & Ewald, 2016).

The visual structures of teaching are the easily accessible features of teaching that refer to superordinate structures and settings (Kunter & Ewald, 2016, p. 13). The depth structures represent the levels of interaction between teachers and learners and their quality. The quality of the interaction between the learners and the way in which the learners deal with the subject matter is therefore at stake (Kunter & Ewald, 2016, p. 14), irrespective of the overarching organisation of the learning situation.

Characteristics of quality teaching

In empirical studies on the quality of teaching, the depth structures of teaching in particular have proven to be significant (Hattie, 2009; Seidel & Shavelson, 2007) (Kunter & Ewald, 2016, p. 13). Important depth structures (Helmke, 2007; Lipowsky, 2015; Mayer, 2004; Seidel & Shavelson, 2007) mentioned are characteristics such as structuring, clarity of objectives, support, pupil orientation or individual support (Kunter & Ewald, 2016, p. 14). Compared to the depth structures of teaching, the visual structures have proven to be less relevant for the effect of teaching (Kunter & Ewald, 2016).

Indicators of teaching quality include the three dimensions of class management, (constructive) learner support and cognitive activation (Praetorius et al. 2018). These are regarded as conditions and indicators for learning-enhancing pupil-specific processes in the classroom. Theoretically, the dimensions are conceived as generic and thus applicable across subjects, class levels and possibly even countries and cultures (Kunter & Ewald, 2016).

Lipowsky (2015) also categorises the subject by citing as quality characteristics the structured nature of teaching, clarity and coherence of content, feedback, cooperative learning, practice, cognitive activation, supportive learning climate and inner differentiation. In addition, the characteristics individualisation and scaffolding as forms of adaptive teaching (Lipowsky, 2015) differ in their complexity and degree of inference (Lipowsky, 2015, p. 96).

2.3 VIDEO-BASED TOOLS FOR MEASURING PROFESSIONAL COMPETENCE

Basically, there are various conceivable ways of capturing action-related competences as part of the professionalisation of prospective teachers during their studies. Practical phases are controversially discussed in terms of their effectiveness (e.g., König et al. 2018), while forms of teaching simulation such as microteaching or role plays have been proven to be highly effective (e.g., Hattie, 2009, p. 112, $d=0.88^{13}$).

Video vignettes (didactically integrated video segments/sequences) are a diagnostic approach that can be easily integrated into studies due to technological progress or digitalisation. They are suitable for acquiring professional competence through an authentic depiction of the teaching reality – especially in the area of university teacher training (Riegel, 2013, pp. 14–15). The fact that the use of video vignettes can promote the skills of (prospective) teachers is well documented (at a glance, e.g., Hatch et al. 2016). Video vignettes are suitable as a form of examination, as they can, for example, be attributed to the character of an invitation to actively continue the teaching activity instead of the teacher shown in the video (Seifried & Wuttke, 2017). Beyond that focusing on the execution of the instruction is also possible. The decisive factor is that this can be put additionally on the planning and reflection of lessons. This means that video vignettes, as the only solution option to date, can cover all three areas of the KMK requirement:

¹³Influences having the greatest impact on student achievement outcomes are labelled in the “zone of desired effects” with d between $d=0.4$ and $d=1.2$. Typical effects from teachers are between $d=0.15$ and $d=0.4$, the zone between $d=0.0$ and $d=0.15$ represents low effects (Hattie, 2009, pp. 19–20).

planning, implementation and reflection. Hence, in the following this approach will be presented in more detail.

Due to the lack of connection between theoretical education at university and later practical work at school, as described, for example, by Hatch et al. (2016), the multimedia representation of teaching (e.g. videos or animations) is already referred to. This is seen as a way of observing and analysing lessons involved in the training process, with the aim of helping prospective teachers transfer theoretical knowledge to concrete application in the teaching practice (Hatch et al. 2016).

Occurrence and existence of video vignettes

In recent years, increasing numbers of video vignettes have been produced for the continuation or reflection of teaching in general education (Seidel & Thiel, 2017). An exception in the vocational field is the domain of business education, in which more and more video vignettes have been developed recently (Saas et al. 2020; Seifried & Wuttke, 2017). No video vignettes are currently available for the industrial-technical part of vocational (teacher) education (Riegel, 2013) (Walker & Faath-Becker, 2019).

According to Zlatkin-Troitschanskaia et al. (2019), in order to assess the ability of teachers to act in complex teaching situations realistic and situation-demanding action formats, such as classroom and learning observations or videos are required. Competence modelling must be based on a detailed analysis of real vocational teaching requirements (Oser et al. 2009) (Zlatkin-Troitschanskaia et al. 2019).

At national level, Seifried and Wuttke (2017), for example, report on the assessment of the quality of actions in authentic teaching situations using video vignettes in business educa-

tion. There, video vignettes are used as a test instrument. Further work on the use of videos in general education at national level is available, for example, from Seidel et al. (2010). Riegel and Macha (2013) provide an overview of video-based competence research in the subject didactics.

Internationally, worth mentioning is the approach of Darling-Hammond (2010), who, for example, has students of the teaching profession or trainees analyse the videography of their teaching attempt in order to reflect on their lesson planning as part of the “Performance Assessment for California Teachers (PACT)”. The focus in this context is on effective teaching and includes the development of students’ competences (Darling-Hammond, 2010, p. 44).

Definition of Video vignettes

Teacher training and further training should also include instruction videos and video vignettes that enable students to deal with realistic situations (Blomberg et al. 2013; Keuffer, 2010; Pauli & Reusser, 2006). It is often difficult for students to put into practice the knowledge acquired during their studies (Cochran-Smith & Zeichner, 2005). Videos and video vignettes play a supporting role in this transfer (Santagata et al. 2005) (Seifried & Wuttke, 2017)

Videos are usually used to show learners’ sequences from their own or other people’s lessons, to reflect or evaluate the teaching action. “(Video) vignettes, on the other hand, usually depict real, condensed instructional videography or fictional, realistic scenarios and invite the observer to act on behalf of the protagonists of the vignette action based on knowledge and experience” (Seifried & Wuttke, 2017, p. 306).

Videography and technical aspects

The use of videography is determined by the amount of recording technology required, the possibilities of knowledge (reduced authenticity and wholeness) limited by the camera detail and the camera perspective, and the invasiveness of the camera (influence on the actors) (Riegel & Macha, 2013, pp. 13–14). These limits seem to at least influence or complicate the creation of videos.

Standards such as those summarised by Seidel, Prenzel et al. (2003) in their technical report on the IPN video study are helpful for the implementation of videography. Compliance with these standards is intended to ensure the scientific use of video recordings through an appropriate methodology for recording and to provide as comprehensive a view as possible of the complex classroom teaching environment (Seidel, Prenzel et al. 2003).

Extensive preparations have to be made for videography lessons in such a way that different perspectives (teacher, learner, observer) are covered and the technical quality (image, light, sound) is also implemented in an acceptable way. These requirements concern in particular the technical equipment (cameras, microphones) and the staffing of the undertaking. In addition, access to teaching must first be opened up, including formal written approval processes and the willingness of school management and teachers to open their lessons. Last but not least, data protection regulations are decisive for the later use of the videos, such as in online environments.

Video material for the production of video vignettes can be obtained as a possibility by filming scripts (specific situation descriptions). An alternative is teaching videography, which is described as more time-consuming and random (Oser et al.

2009) (Seifried & Wuttke, 2017). Ultimately, in this case the occurrence of certain situations is hardly predictable – even desired typical teaching situations cannot be planned in advance (Seifried & Wuttke, 2017). The video should show typical and even faulty situations (Seifried & Wuttke, 2017). In the case of scripted teaching scenes, however, there may be a risk or temptation to want to show “ideal” teaching (= good and effective teaching?). In this respect, this can also be seen as an argument for choosing real lessons.

Video recordings are based on two cameras and two microphones (one fixed and one moving camera as well as a teacher’s and a pupil’s microphone) (cf. Seidel, Dalehefte, & Meyer, 2003; Riegel & Macha, 2013, pp. 16–17).

3. AN ACTION-ORIENTED MODEL OF PROFESSIONAL COMPETENCE

If one takes up the critical feedback mentioned at the beginning, particularly with regard to the action-related competences required in the preparatory service but subjectively perceived as inadequate student preparation (Böhner, 2009), this must be manifested in a model of professional competence as the basis for the development of video vignettes. Here, both the idea and understanding of professional competence (Blömeke et al. 2015; Lindmeier, 2011; Zlatkin-Troitschanskaia et al. 2019) of future teachers and the central aspect of teaching quality (Berliner, 2005; Kunter & Ewald, 2016; Lipowsky, 2015; Oser & Patry, 1990) must be taken into account.

On the basis of the above considerations, the approach of Lindmeier (2011) on subject-specific competences (competence

structure model, Figure 1) required for the preparation and follow-up of teaching (Lindmeier, Heinze, & Reiss, 2013, p. 105), is an essential part of this theoretical framework.

Accordingly, in line with the first objective (section 1 or 2.1), the question was which idea or understanding is the basis of the professional competence of future teachers. On the basis of the models presented, a model of teachers' professional competence was to be selected whose components reflect both the above-mentioned arguments regarding the training situation and the practical situation, as well as the requirements of the KMK. The action-oriented model shown in Figure 3 is based on the work of Zlatkin-Troitschanskaia et al. (2019), Blömeke et al. (2015) and Lindmeier (2011).



Figure 3: Action-oriented model of professional competence of Walker and Faath-Becker (2019) based on Zlatkin-Troitschanskaia, Kuhn, Brückner, and Leighton (2019), Blömeke, Gustafsson, and Shavelson (2015), and Lindmeier (2011)

The elements of the PCK and CK (Figure 3, top centre) are summarised according to Lindmeier (2011) under basic knowledge (section 2.1, Figure 1, left), while below they can be dis-

tinguished between two fields of competence. In the model by Zlatkin-Troitschanskaia et al. (2019) (section 2.1), these competence components can be found under situation-specific skills.

The ability to act under time pressure and make teaching decisions can be related to the delivery of instruction under the concept of action-based competence (Figure 3, right). For our model, action-based competence is defined as follows: Action-based competence refers to the ability of a teacher to react spontaneously and adequately based on professional knowledge (Lindmeier, 2013) and taking into account the dimensions of teaching (Holzberger & Kunter, 2016, pp. 43–45; Lipowsky, 2015, pp. 77–94) in teaching situations under time pressure. Spontaneous means that an activation of reflective processes is not possible (cf. Schön, 2002, reflection-in-action) (section 2.1).

With the other two phases, planning and reflection (Figure 3, left), the competence facet of reflective competence is linked. This is understood to mean coping with pre-instructional (planning) and post-instructional (reflection) teaching requirements (Lindmeier, 2011).

Reflective competence is the ability to cope with pre- and post-instructional situations (Lindmeier, 2011) on the basis of subject-specific basic knowledge (Lindmeier, Heinze, & Reiss, 2013, p. 106) and taking into account the dimensions of teaching quality (Holzberger & Kunter, 2016, pp. 43–45; Lipowsky, 2015, pp. 77–94). These are complex skills that are needed to draw conclusions from the reflection of lessons held and to plan lessons (Lindmeier, 2011, pp. 106–107).

Pre-instructional reflective competence refers to the ability to reflect the didactic design of instruction on the basis of subject-specific basic knowledge and the characteristics of teaching

quality. Post-instructional reflective competence is defined as the ability to reflect on learners' learning processes and products, the quality of interaction between teachers and learners and their (re-)actions, and the methodological and organisational design of teaching based on the characteristics of teaching quality through class observation (section 2.1).

The second goal of the work – what is meant by competence-enhancing or quality instruction (section 1 or 2.2) – is covered by the presentation of Berliner (2005). Following this idea, instruction is of high quality if it is good (by adhering to normative principles) and effective (by achieving the required competence goals). The distinction between visual and depth structure in class observation is important here (Oser & Baeriswyl, 2001). Above all, the characteristics of the depth structure proved to be characteristics of effective teaching and are operationalised by corresponding quality characteristics (section 2.2).

In addition to class leadership, cognitive activation and constructive support (Kunter & Ewald, 2016; Praetorius et al. 2018), Lipowsky (2015) emphasises, among other things, structured teaching, clarity and coherence of content, cognitive activation and informative feedback as quality characteristics (Lipowsky, 2015, p. 95; Fauth et al. 2014; Kunter & Baumert, 2006; Praetorius et al. 2014; Kunter & Ewald, 2016) (section 2.2).

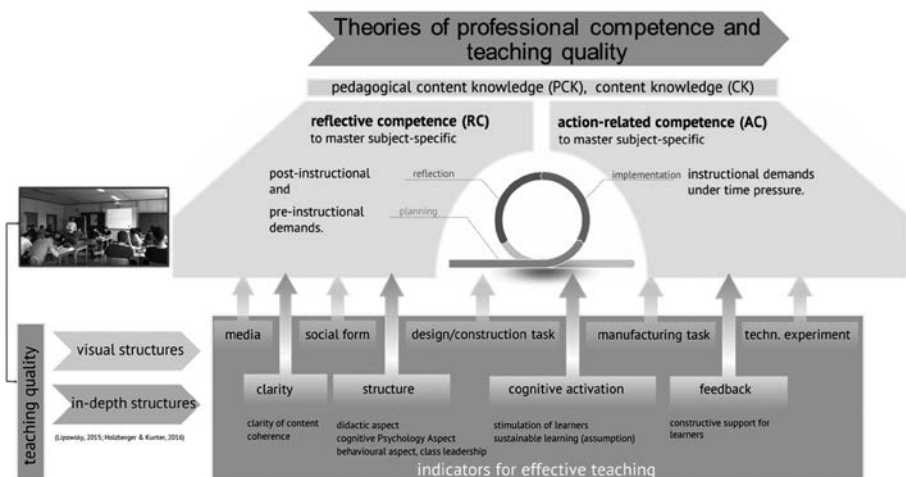


Figure 4: Action-oriented model of professional competence (Figure 3), combined with characteristics of teaching quality (Walker & Faath-Becker, 2019; translated from German into English)

Based on the models mentioned above and the idea of quality teaching, the action-oriented competence facets are now combined with the quality criteria of teaching (Figure 4). The characteristics of the depth structure in particular are seen as indicators of quality teaching, which can be related to the expression of the reflective and action-based competence facets as part of the professional competence of the (prospective) teachers.

These exemplarily listed characteristics of the depth structure (Figure 4, below, in the middle, c.f. section 2.2) are operationalised for a more detailed examination of the assessment of action-related professional competences in interaction with teaching quality in video vignettes. For this purpose, the respective feature definitions are related to authentic teaching situations in which actions can be observed and reflected upon or

which can provide occasions for the active continuation of a teaching action.

As an example of the characteristics of teaching quality, the feedback characteristic is considered in more detail here. First, a definition of feedback/constructive support is given on the basis of the above-mentioned literature: This dimension focuses on supporting learners with comprehension problems and creating a learning environment in which the interaction between teachers and learners is characterised by respect and appreciation (Kunter & Ewald, 2016, p. 16).

4. DEVELOPMENT OF A VIDEO-BASED INSTRUMENT FOR THE ASSESSMENT OF PROFESSIONAL COMPETENCE: VIDEO VIGNETTES

The video vignettes should serve to assess the professional competence of future teachers at vocational schools and can also be used for examination purposes in the future. The question to be answered here is what access to teaching (teachers, school managements) is possible and how video material can be obtained. This means both formal preparatory work such as approval steps or the basic decision for real or scripted instruction, but also technological conditions such as multimedia equipment and questions of recording technology (section 2.3). A further prerequisite is that the video vignettes meet scientific quality criteria.

Data protection regulations must also be observed. In fact, data protection can only be satisfactorily regulated by a responsible regulation of access to the videos. Legal security can be achieved by obtaining the written consent of the videographers

(Riegel & Macha, 2013, pp. 13–14), which was provided during the preparation of the videography.

Moreover, not every teacher is willing to open their lessons to video observations (Keuffer, 2010).

4.1 VIDEO VIGNETTE CREATION PROCESS

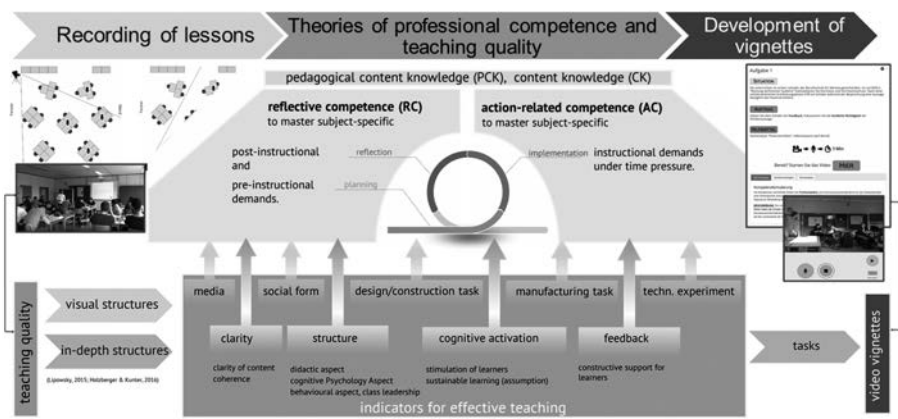


Figure 5: Overview of the creation process of video vignettes (Walker & Faath-Becker, 2019; translated from German into English)

In a first step, real lessons in the industrial-technical field of vocational training are recorded by means of standardised videography (Asbrand & Martens, 2018; Seidel & Thiel, 2017). For this purpose, student and teacher perspectives are each captured with a fixed camera as well as selectively interesting scenes with a moving camera, and separate microphones are used for teacher and learner. Three cameras, a teacher microphone and three table microphones for the learners are available for the videography on which this work is based. The recorded video material

is then divided into sections. The evaluation objectivity of the criteria for capturing professional competence in this context is determined after the next step: The video recordings are then divided by trained observers into sections in which specific characteristics of teaching quality and the requirements of the RC and AC can be identified (Figure 5, centre) (Walker & Faath-Becker, 2019). From these video sequences video vignettes can be produced in the last step.

4.2 VIGNETTES IDENTIFIED

So far, 21 vignettes have been identified from the recorded lessons and assigned to the two competence areas RC (13) and AC (8). For the above-mentioned characteristic “feedback” (see also section 3), the corresponding definition was used as a basis and a targeted search was made in the video material for passages in which the designated actions could be observed either in terms of reflective or action-based competence. Thus, for example, the support of learners with comprehension problems is expressed in the fact that the teacher shows a corresponding reaction (AC) to a pupil’s question by either answering directly, reflecting the question back to the class, putting the answer to the question back and referring to another process, or leaving the question as is without clarifying it. So it is not yet a question of checking the quality of feedback given or evaluating it as positive or negative. Rather, sequences in the video material were selected for the mere occurrence of the feature and thus only perception – whether positive or negative – played a role. This characteristic is thus assessed purely from an observational and not a judgmental attitude. A suitable sequence can thus be selected both by the

occurrence of the feature and the absence of an expected feature. The assessment and allocation of the observed actions to the features is carried out by two independent observers, in order to secure each of them against each other in a first step. The observations of both are examined with respect to the agreement in the assignment of the vignettes to the same characteristic of teaching quality regarding the associated competence area (AC or RC). Initial analyses of the objectivity of the evaluation show sufficient quality (with a simultaneous large variance between the vignettes (Walker & Faath-Becker, 2019, p. 18).

3.3 IMPLEMENTATION IN THE ONLINE ENVIRONMENT

Finally, the vignettes are integrated into an online environment and enriched with additional materials. The following example shows the video vignette implemented on the online platform for action-based competence and the feedback feature. The introduction to the online environment is a brief description of the teaching situation (Figure 6, "Situation" above). In addition, it is possible to view further planning documents for the lessons, such as essential information on the learning group, the classification in the curriculum and a reference to the subject content (Figure 6, left). Once the required information on the lessons has been obtained, the processing of the assignment can begin. In this example, a technically correct feedback on a pupil's answer is to be provided (Figure 6, above). Before the video is started, the editors of this action-based competence video vignette are informed that the editing must take place with an audio recording/voice output within a predefined period of time. After confirmation of the message, the video starts automatically and the

editing time runs (Figure 6, right). Now it is possible to document one's own reaction orally, thereby providing technically correct feedback on the student's response within the given time. The recording is automatically saved (Walker & Faath-Becker, 2019, p. 18).

Assignment 1

SITUATION

You are teaching tool mechanics in the first year of training at the vocational school. In the field of learning 4 "Maintenance of technical systems" you are going to address the topics of corrosion and corrosion protection. After a learner-centered elaboration phase, a pupil gives a statement regarding hot-dip galvanizing during the discussion.

Ready? Start the video

HERE

TASK



Give feedback to the pupil. Focus on the technical correctness of the pupil's statement.

AID

Figure 6: Start view of a video vignette in the online environment (Walker & Faath-Becker, 2019; translated from German into English)

5. DISCUSSION AND LIMITATIONS

A video-based instrument for the assessment of "action-oriented" facets of professional competence was presented in the context of the article (section 4.3). This development took place on the theoretical basis of the models of Zlatkin-Troitschanskaia et al. (2019) and Lindmeier (2011), whereby the action-based competence facets focus in particular on the characteristics of competence-enhancing and quality teaching action (section 3). The generated video vignettes are based on real teaching (section 4.1). The video vignettes developed in this way (21 pieces)

and the characteristics of quality teaching contained therein could be identified with satisfactory objectivity (section 4.2). The integration of the video vignettes into an online environment in which further information on the teaching situation (lesson plans, worksheets, specialist information, etc.) can be viewed completes the instrument.

To the authors' knowledge, the instrument presented here represents the first video-based instrument in the industrial-technical field of teacher training in Germany and Europe. The use of the instrument is not limited to diagnostic purposes: the identified video vignettes can be used to build up action-oriented competences within the framework of the studies or the second phase of teacher training.

The focus on the characteristics of quality teaching obviously limits the meaningfulness of the instrument developed here, as only a part of the characteristics of quality teaching is depicted. The same applies to the construct of professional competence. Although, in comparison to other models of professional competence, "action-oriented" competence facets were integrated into the model, knowledge aspects (section 3; dispositions) remained only implicit in the instrument, that is, as a basis for teaching action.

The video vignettes integrated into the instrument show real lessons, which have both negative and positive consequences. It should be positively emphasised that the teaching situations represented in the video vignettes depict authentic teaching in all its complexity. But this is also connected with the negative aspect. It is precisely this multidimensional nature of teaching that can lead to the fact that several characteristics of quality teaching of varying intensity occur in the video sequences

and thus the construct to be captured is not exactly depicted (construct irrelevant variance (Downing & Haladyna, 2006; Haladyna & Rodriguez, 2013)).

The video-based instrument presented in this context for the assessment of “action-oriented” facets of professional competence forms a central component of a more comprehensive development process. In a first step, the video vignettes developed so far are checked for their acceptance, suitability and objectivity through their use by actors along the teacher training chain (student teachers, pre-service teachers and in-service teachers) and, if necessary, the vignettes are adapted according to the target group. The aim is to determine the evaluation objectivity of the focused quality features of teaching against the background of different work experience and to determine the acceptance in these target groups with regard to the use of the instrument in the online environment as well as the content aspects.

According to the theoretical model of professional competence on which this instrument is based, the instrument or online environment is systematically supplemented by further cognitive aspects of professional competence. Following on from the model of Zlatkin-Troitschanskaia et al. (2019), steps are also being taken to develop instruments for the elements of teacher cognition (dispositions: professional knowledge, affective and motivational factors, generic attributes) that have not yet been considered and to integrate them into the online environment.

Although the diagnosis of professional competence is of fundamental importance, it is unsatisfactory from a (subject-) didactic (CK/PCK) perspective without supporting or intervention approaches. Accordingly, it is not sufficient to provide only an instrument for assessing professional competence. Rather, suit-

able didactic approaches are needed to develop competence on the part of the students. To this end, the support approaches must be suitable for integration into the course of study.

The video vignettes developed in this article are used in a current research project in the subject didactic courses of the studies. Following the example of Arya et al. (2015) and Christ et al. (2017), the students are invited a) to view, discuss and reflect on the video vignettes with “peers” in addition to the lecturer-centred presentation of them, or b) to create the video vignettes themselves.

With regard to the scientific output, these follow-up projects make a contribution to open national and international questions regarding the “video-supported” development of professional competence among prospective teachers at vocational schools. The results allow for the first-time statements about the actual effect of digital media (in this case video vignettes) on the acquisition of professional competence by future teachers at vocational schools. In addition, a “teaching concept” for the promotion of professional competence is promised for vocational teacher training studies.

With the help of these online-based video vignettes, both the assessment as perspective and the development of professional competence can be authentically integrated into the teacher training course for vocational schools. The approach presented here thus offers potential for the second (preparatory service) and third phase (e.g. in the form of further training) of teacher training beyond the industrial-technical field (Walker & Faath-Becker, 2019).

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Development, Implementation and Effects of an Innovative, Fast-Track Program to Prepare Highly Qualified Teachers for Vocational Schools in MINT Professions in Bavaria/Germany

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Abstract: Since 2015 Vocational Education at TUM School of Education in Munich, Germany, has been developing an intensive, fast-track Master's program for high quality teacher preparation in VET. The target group of this holistic alternative to fragmentary short-track qualification opportunities for career changers are those already holding a B.Sc. in Engineering Sciences. It is designed to alleviate the shortage of teachers for technical professions and generate synergy effects and benefits regarding professional standards in VET. Aspects of the program can be transferred to other VET-measures and improve the quality of teacher education and training. Studies have been conducted to optimize the program and have determined that the systematic linkage of theory and practice is vital for an effective teacher preparation program. However, the close cooperation of the two institutions in VET, that hitherto have been act-

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ing separately, based on a specially developed concept is another crucial basis for the entire program.

Keywords: Concept for Cooperation, Innovation in VET, Linkage of Theory and Practice, Vocational Teacher Education and Training

1. INTRODUCTION¹⁴

High-quality vocational education and training at vocational schools contributes to the success of the German economy due in part to its technical innovations. Vocational training and its quality are largely the responsibility of teachers at vocational schools and those involved in training companies. In addition to economic aspects, vocational schools are important for the personal development of young people, helping them to find their role in society and private life as well as for recognizing and fulfilling their opportunities and duties, e.g. from a political point of view. The teachers themselves, their skills and their own training play a central role.

For many years, however, there has been a large shortage of vocational teachers in Germany, particularly in the fields of metal technology, electrical engineering & information technology, as well as in physics and mathematics (see Monitor Lehrerbildung, 2017, summary of causes for this shortage see Riedl et al. 2018, p. 74).

In Bavaria, in order to become a teacher at a vocational school, it is required to first study for 10 semesters at univer-

¹⁴ Parts of this article (section 1 to 2.9) are very closely based on Gruber et al. 2018 and Riedl et al. 2018.

sity, followed by 2 years of teacher training at school. The ‘first phase’ of teacher education is provided by a university, traditionally focussing on educational theory and science. Separate from this, the more practical, so-called ‘second phase’ of teacher education is provided by ‘Staatliches Studienseminar’, a governmental institution responsible for in-class teacher training which decides whether an aspirant will be granted civil servant status. At Technische Universität München¹⁵ (TUM), the course of study ‘Vocational Education’ for the teaching profession at vocational schools, divided into a Bachelor’s and Master’s degree, has been offered since 2008 in six vocational disciplines. The number of graduates, however, has been lagging behind the number of open positions for years in certain fields.

Various short-track qualification opportunities for career changers have been taken to recruit teachers for these professional fields.¹⁶ In Bavaria, in September 2018 approximately 50 percent of graduates in electrical engineering & information technology and metal technology were recruited through these measures. In comparison to traditional teacher education and training, these measures appear to represent emergency solutions which cannot fully prepare participants to meet the challenges of everyday life as a teacher (Schlausch, 2013, see summary in Riedl et al. 2018, p. 74).

Therefore, innovative training concepts are urgently needed alongside new target groups of future teachers. One promising approach is a newly developed innovative Master’s program that aims both at increasing the attractiveness of the teaching profession at vocational schools and improving vocational teacher

15 Technical University of Munich

16 Regarding Bavaria see e.g. www.km.bayern.de/lehrer/stellen/berufliche-schulen/quereinsteiger.html

education and training while maintaining quality¹⁷. It is jointly supported by TUM and ‘Staatliches Studienseminar’ and made possible by the Bavarian State Ministry for Education and Culture. The development, implementation and continuous evaluation for optimization and its effects is one of four subprojects in the Teach@TUM project¹⁸ within the ‘Quality Campaign for Teacher Education and Training’¹⁹.

2. CONCEPT OF THE NEW MASTER OF EDUCATION’S DEGREE PROGRAM ‘INTEGRATED STUDY PROGRAM M.ED. VOCATIONAL EDUCATION AND TEACHER TRAINING’

2.1 TIME FRAME OF THE PROGRAM

Within three years, participants in the program receive a full Master’s degree for teaching at vocational schools and the second state examination at the same time. The latter is required in order to achieve status as civil servant in Bavaria (e.g. associated with better working conditions regarding income and irredeemable contract).

There are always three cohorts at one time studying in the new Master’s program (in their first, second and third year). The first cohort started in 2016 and graduated in 2019.

17 Another approach at the TUM is the cooperation with the University of Applied Sciences in Landshut (see Dollinger & Riedl 2018)

18 In addition to the development of the new Master’s program, there are ‘Toolbox Teacher Training’, ‘Clearing House Teaching’ and ‘Increasing Competence Orientation’ (see <https://www.edu.tum.de/teachtum>).

19 ‘Qualitätsoffensive Lehrerbildung’ is funded by the Federal Government and the Länder from funds of the Bundesministerium für Bildung und Forschung/Federal Ministry of Education and Research until the end of 2023 with the funding code 01JA1801. The funding code until 2018 was 01JA1501.

2.2 AIMS OF THE PROGRAM

The aim of the new degree ‘Master of Education for Vocational Education and Teacher Training’ at TUM School of Education is to offer a program in which participants who hold at least a Bachelor’s degree in engineering sciences receive a high-quality education in educational science and didactics by closely linking their studies with their teacher training. To this end, a concept has been developed in which for the first time in Germany scientific studies at university are systematically intertwined with the practical training that usually takes place only after studies have been finished (see Arnold, 2010, Keuffer & Oelkers, 2001, Speck et al. 2007). For the competency development of prospective teachers, the perspectives, knowledge, experience and attitudes of various actors involved in teacher training (divided into Staatliches Studienseminar and schools as well as university) are integrated at the same time.

This study program for engineers increases the attractiveness of teacher training, for example in terms of time (in comparison short duration of the combination of Master’s studies and preparatory service: three years), finance (from the second year on, swearing in as civil servants for revocation and receipt of aspirant remuneration) and qualification (in addition to the vocational specialisation, a teaching qualification is acquired in a teaching subject).

In addition to opening up new target groups that have not yet been addressed (participants in a measure must have a Master’s degree in Engineering Sciences) in order to remedy the shortage of teaching staff, the program contributes to ensuring high-quality teacher training and to the potential use of the resulting impulses to optimize teacher education and training.

2.3 TARGET GROUP

The program is aimed at graduates with a Bachelor's degree or at least an equivalent degree in engineering. Graduates of an engineering Bachelor's degree at a university of applied sciences are also given the opportunity to enter the higher teaching profession at vocational schools. With start of this winter semester (2020/21) the limitation of places for suitable applicants has been abolished (before limited to 24 places). They are scheduled for electrical engineering & information technology and for metal technology. Mathematics or physics can be chosen as teaching subject (so-called second subject). Currently, informatics as a third option is being revised.

2.4 ADDRESSING AND APTITUDE PROCEDURES

In addition to flyers, posters, and the targeted sending of information to places interacting with the relevant target audience, there is also an image film, which can be found on social networks, on YouTube and on the website of the Faculty TUM School of Education²⁰, to make the program known to suitable applicants. The student advisory service for the innovative Master's program is represented with an information point at relevant events, e.g. higher education fairs.

The study places are allocated in the course of a selection process. In order to be able to start training at a vocational school

20 <https://de-de.facebook.com/TUMuenchen/videos/master-berufliche-bildung-integriert/10154785882589325>, <https://www.youtube.com/watch?v=elLUWw9zwUA> and access to relevant information on the program: <http://www.edu.tum.de/studium/fuer-studieninteressierte/studiengaenge/lehramt/master-berufliche-bildung-integriert-fuer-ingenieure>

in the third semester, students need a vocational training qualification that matches their vocational specialisation or, alternatively, proof of 48 weeks of relevant professional experience. In the latter case, at least 30 weeks of relevant work experience must be completed by the end of the application deadline and 36 weeks by the start of the Master's program. This leaves one year to make up for the missing three months of practical training. The suitability of the applicants is ensured by an aptitude committee. If the application papers are not sufficiently convincing, interviews are being conducted. Relevant aspects are e.g. expert knowledge, motivation, interest and previous pedagogical experience of the applicants.

2.5 THE DEGREE PROGRAM AND ITS CONCEPT

In this new program, seminar teachers at seminar schools and lecturers (university teachers) link the stages of teachers' education and training by building a bridge of close cooperation between both institutions. On the basis of an innovatively designed, scientifically grounded competency development model (see section 2.8), supervisors of both institutions combine both theory and practice through continuous coordination and cooperation (see section 2.9). This is reflected in a shared terminology, a coherent curriculum that coordinates content at the university and vocational schools, shared quality standards of good teaching, cooperative formats in university teaching and schools, and aligned examination criteria and formats. The aim is to use these linking elements to train students intensely, to generate synergy effects and thereby produce highly qualified, competent teachers at vocational schools.

2.6 DEVELOPMENT AND CHALLENGES

The new program and its training concept are rooted in continuous coordination between TUM School of Education and Statiliches Studienseminar for Vocational Education and Training.

A central challenge in the design of the concept in the course of linking two different institutions of teacher training, each with its own system logic, is to find joint, legally viable agreements. The responsible department in the State Ministry for Education and Culture acts as a legal supervisory body in close consultation with the state ministry in order to guarantee the conditions that apply to state employees in Bavaria. Various legal requirements of the first and second teacher education and training phases, such as the general examination and study regulations and study program statutes at TUM, requirements of the Teacher Examination Regulations and admission and training regulations for the teaching profession at vocational schools, must be reconciled. At present, the new program has model test status in accordance with Article 19a of the Bavarian Teacher Training Act (BayLBG²¹) (for more on the challenges involved in designing the program, see Riedl et al. 2018, pp. 77–78).

2.7 STRUCTURE OF THE INNOVATIVE MASTER'S PROGRAM

The qualitative claim of the new program is to guarantee high-quality training despite the attractive, shortened duration. This is possible by closely linking university and post-university

21 www.gesetze-bayern.de/Content/Document/BayLBG-19a

phases (teacher training) with each other, which were previously largely separate in Germany. To this end, the training content of the two phases is closely coordinated and continuously inter-related. The first two semesters of the degree program take place full-time at the TUM and lay the foundation for entry into the training phase. They include a 15-day-school-internship.

Modules at Technical University of Munich: TUM						Education in Mathematics or Physics	
Modules for Preparatory Service: PS							
Shared Modules: TUM + PS							
6 th sem.		School- and Instructional Development (TUM + PS)	Designing Lessons (PS)	Civic Education and School Law (PS)	Master's Thesis Including Term Paper According to LPO II (TUM + PS)		
5 th sem.	Monitoring Student Learning Processes (TUM + PS)						
4 th sem.							
3 rd sem.	Personal Growth and Reflection (TUM + PS)	Planning, Conception and Implementation of Competence- and Action-oriented Teaching and Learning (TUM + PS)				(TUM)	(TUM + PS)
2 nd sem.					Fundamentals of Competence- and Action-oriented Technical Teaching and Learning (TUM)		Understanding Teaching and Learning Processes II (TUM)
1 st sem.			Enquiring and Reflecting on Teachers' Tasks (TUM)	Conceptualizing Oneself as a Professional VET Teacher (TUM)	Understanding Teaching and Learning Processes I (TUM)		

Figure 1: Training Contents of the New Master's Program

From the third semester onwards, selected seminar teachers at vocational schools – two per vocational specialisation and teaching subject – are responsible for the teacher training. They coach the trainee teachers and offer seminar groups on special

topics which are exclusively reserved for the participants of the new Master's program, as the training content is coordinated in detail with the TUM School of Education.

The weekly schedule from the third semester onwards is as follows:

	Monday	Tuesday	Wednesday	Thursday	Friday
6 th semester at university 4 th half-year at school	university advanced seminar	vocational school (focus: vocational specialisation and/or teaching subject)			
5 th semester at university 3 rd half-year at school	university advanced seminar	vocational school (focus: teaching subject) class on special topics	vocational school (focus: vocational specialisation and/or teaching subject)		
4 th semester at university 2 nd half-year at school	university advanced seminar	vocational school (focus: teaching subject) class on special topics	vocational school (focus: vocational specialisation) class on special topics		
3 rd semester at university 1 st half-year at school	university advanced seminar		vocational school (focus: vocational specialisation) class on special topics		

Figure 2: Weekly Schedule of the New Master's Program from the Start of Preparatory Service

After two semesters at university, including a school internship, the focus of training is gradually shifted to school (see Figure 2): in the third semester, two full days are planned for seminars at university. From the fourth semester onwards, this is reduced to only one day on which, during the semester breaks, 'advanced seminars' in addition to teacher training at schools prepare for

the second state examination (e.g. on civic education and school law). A smooth transition into teaching in real situations and work at the vocational school takes place (see section 2.8, Figure 3). The training at the schools for the teaching subject only begins after six months (in the fourth Master's semester). The reason for this time lag is that in the third semester, it is still possible to complete the subject-specific university education with regard to the subjects taught. In addition, in the present model the trainee teachers are accompanied by seminar teachers until shortly before their second state examination. Classes on special topics (= specialist sessions) are held at school from the third to the fifth semester.

The emphasis in the last semester is on teaching on the trainee teacher's own responsibility as well as on preparing for the planned, subsequent entry into the state school service.

2.8 MODEL FOR DEVELOPING COMPETENCIES

The competency development model (see Figure 3), which the study program is based on, envisages that prospective teachers are gradually led from professional knowledge to lesson planning and classroom observation as well as actual teaching in simulated environments, and later, to real teaching at schools. The crucial factor is that every step refers back to professional knowledge, so that it is continuously linked with experience and empirical knowledge (Seidel et al. 2015).

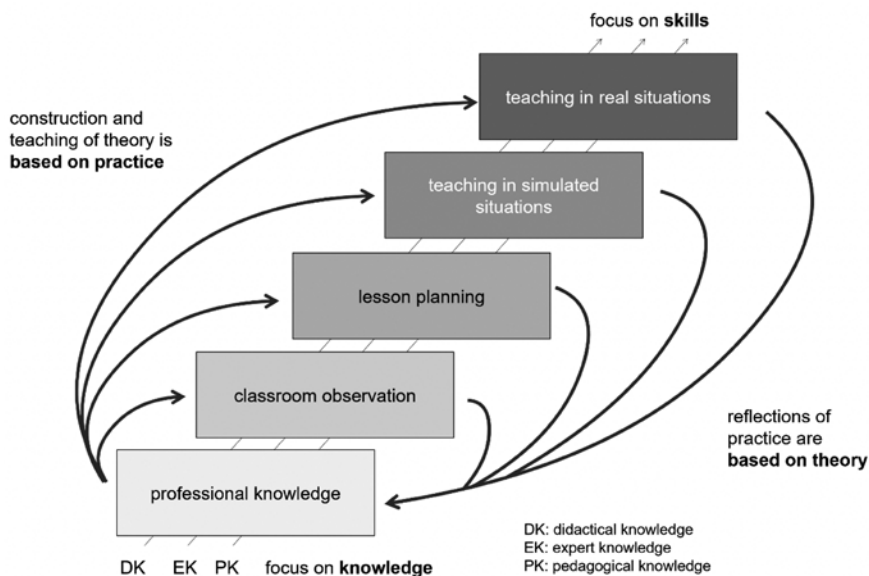


Figure 3: Model for Developing Competencies as Basis for the New Study Program

The model for competency development is implemented, for example, with the help of a specially developed lesson planning document, which is used from the first semester onwards in several coordinated courses, in the first school internship, in a joint retreat in the third semester with micro-teaching in simulated teaching situations and finally for teaching in real classes.

2.9 CONCEPT FOR COOPERATION AND DEVELOPING A STUDY PROGRAM

For the development and implementation of the course of studies, continuous cooperation between seminar teachers and

lecturers is necessary. The cooperation program for seminar teachers and lecturers, which is essential to its success, is outlined below and is implemented in so called ‘theme days’:

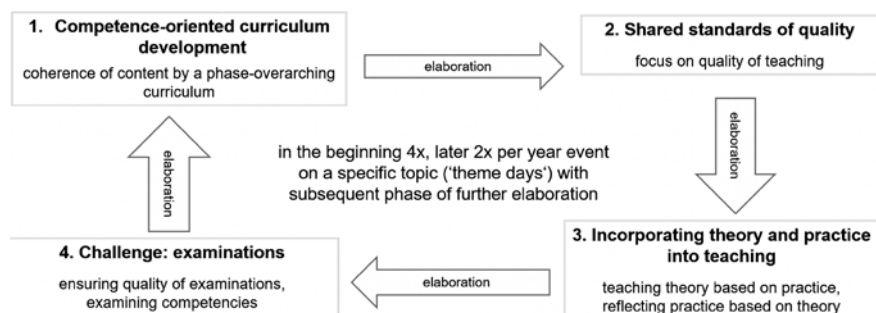


Figure 4: Cooperation Program for Seminar Teachers and Lecturers

Each event ('theme day') takes a whole day. The attendees are given tasks, work collaboratively and receive information on the newest developments. In addition, current work processes and the results from ongoing research on a selected topic are presented and discussed. Impulses for future work, for example in the form of scientific input, practical testing of newly-developed proposals and feedback from related research, are provided. On average, 21 lecturers, eight seminar teachers and three supervisors are working together in cross-phase teams on the further development and optimization of the content of the study program by combining the expertise and strengths of the usually separate first and second teacher training phases. Between the theme days, there are development phases with small group meetings, continuous alignments and mutual supplements in teaching and instruction, in which the work initiated on the

theme day is continued. Examples for cooperations are observations of seminar teachers at university events to introduce sound practical references, theory-supported feedbacks with lecturers at schools and joint micro-teaching events.

On a login-protected website seminar teachers and lecturers involved in the program can access e.g. all information on the study program, current developments, scientific findings, plans for collaborations, or lessons plans.

The development process in the program is continuously accompanied and coordinated by an organization team consisting of members of TUM and 'Staatliches Studienseminar'.

3. SELECTION OF RESULTS

Based on available educational theory and scientific findings, the new program presented above that systematically links theory and practice should be effective and meet its goals (see section 2.2). Thus far, two cohorts have successfully completed the program and entered the teaching profession, reducing the shortage of teachers.

In order to evaluate and optimize the program and its effects, the accompanying research, both cross-sectional and longitudinal, consists of different approaches. Figure 5 provides an overview of the areas investigated in the research:

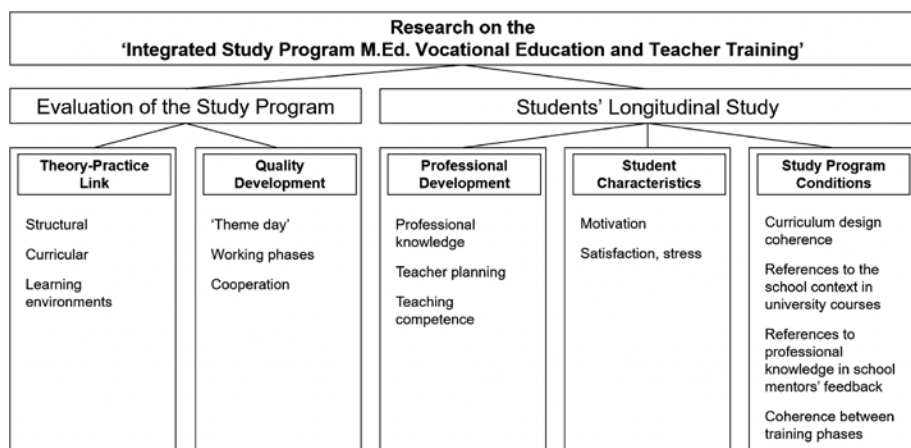


Figure 5: Research on the Study Program

In the following, we present a selection of interim results of the ongoing research on the participants' perception of the program and its impact on them, of an evaluation of the linkage between seminar content at schools and classes at university, and of conditions vital for the success of the cooperation between the two institutions in VET.

3.1 EVALUATION OF STUDENTS'/TRAINEE TEACHERS' EXPERIENCES DURING THE FIRST AND SECOND YEARS OF PREPARATORY SERVICE

In the new Master's program, the first two semesters are primarily spent at university focussing on educational theories and teachers' background knowledge. Beginning in the third semester, students combine studying at university with preparatory service at schools. In order to facilitate this combination, teachers at school and scientists at university have to very closely coordinate their classes and content.

Research Questions

An indication for the quality of the program are the results of the evaluation of

- how the first and second cohort of students of the new study program (in the following abbreviated as “SNP”) experienced their first and second year of integrated preparatory service (= second and third year of the program) and
- how the first cohort and second cohort experienced their first year of preparatory service compared to graduates who first completed their traditional Bachelor’s and Master’s program at university and only then entered this hands-on phase at schools (in the following abbreviated as “GTP”).

Method

Sample:

Students/trainee teachers of the first and second cohorts of the new program (SNP) were each surveyed after their first and second year of preparatory service. All 21 participants of the first cohort graduated. After the first year of preparatory service 13 (62%) answered the questionnaire, after the second year 17 (81%). 18 participants of the second cohort finished successfully the first year of preparatory service and 15 the second year. After the first year of preparatory service, 15 (83%) answered the questionnaire, after the second year 12 (80%).

Graduates of the traditional study program (GTP) were included for an exemplary comparison after their first year. After

the second year of preparatory service, they could no longer be contacted due to formal reasons. The response rate was 21% in 2018 and 17% in 2019.

	First cohort (2018 and 2019)	Graduates of the traditional study program	Second cohort (2019 und 2020)
After first year of preparatory service	n: 13 (N: 21)	2018: n: 7 (N: 34) 2019: n: 5 (N: 29)	n: 15 (N: 18)
After second year of prepara- tory service	n: 17 (N: 21)	-	n: 12 (N: 15)

Table 1. Sample

Design:

This survey was conducted with SNP at TUM and GTP in the field of electrical engineering & information technology and metal technology that had entered preparatory service in Bavaria.

An e-mail was sent to all of them that explained what the survey's intention was, including a link to a questionnaire to participate in the online survey. For the SNP, additionally, a timeslot in a class at university was reserved which all had to attend. Members of the organizational team personally were present in order to increase motivation and the probability of participation. This was not possible with the GTP who were not at university anymore but distributed on different schools.

Instruments:

We conducted an online survey with self-report scales. The questionnaire's categories were the following:

- Perceived Theory-Practice-Interlocking: Coherence between Studies at University and Preparatory Service at School
- Satisfaction with Studies and the Decision to Become a Teacher as well as the Burden of Studies in Terms of Emotional Exhaustion
- Reasons for Stress During Preparatory Service at School
- Reasons for Stress During Studies at University
- Motivation for Learning
- Self-perceived Competencies

For the questionnaire's items, sources, its construction and more details please refer to the appendix (Questionnaire: "Evaluation of Students'/Trainee Teachers' Experiences during the First and Second Years of Preparatory Service").

Data Analysis:

We conducted descriptive analyses using SPSS and Excel. In the following, we focus on comparing the means of the different groups. Due to a wide range of results, the answers to open questions are not included in the following.

Results

Perceived Theory-Practice-Interlocking: Coherence between Studies at University and Preparatory Service at School:

With the first cohort, the mean values in response to the questions in this category dropped from 2.9²² in the first year to 2.6 in the second year. The answers suggest that in the second year the trainee teachers felt better prepared for the preparatory service and fewer participants perceived the transition as a complete break. Moreover, they found that less improvement was needed for the transition to the preparatory service and for the coordination and connection between studies and preparatory service compared to the first year. The results of the second cohort showed a similar trend (their mean differed by 0.2 points from the first cohort's experiences and decreased from 2.6 in the first year to 2.4 in the second year).

The mean results of GTP after their first year of preparatory service were 2.7, both in 2018 and 2019. Whilst the first and second cohort of SNP agreed with a mean of 3.2 and 2.5 to the statement "I feel that the university has prepared me well for the professional demands of my preparatory service", both GTP groups tended to disagree with a mean of 1.6 and 1.7.

Satisfaction with Studies and the Decision to Become a Teacher as well as the Burden of Studies in Terms of Emotional Exhaustion:

The satisfaction of the first cohort's SNP regarding this category decreased slightly in the second year (from 3.3 to 3.1). At the same time, they felt less exhausted in the second year with a mean of 1.7 instead of 2.6. The mean agreement to the item "I feel depressed at the end of the day" went down from 2.8 to 1.5 in the second year.

22 Scale: 4 = 'applies', 3 = 'tends to apply', 2 = 'tends not to apply' and 1 = 'does not apply'

The second cohort's SNP answers were very similar (satisfaction in the first year 3.2, in the second year 3.1). They also felt less emotionally exhausted in the second year (mean of 1.9 vs. 2.5).

The GTP's mean satisfaction was 3.0 (2018) and 3.2 (2019). Their response on emotional exhaustion had a mean of 2.7 (2018) and 1.9 (2019). To the statement "I feel depressed at the end of the day" the GTP agreed in 2018 with a very high mean of 3.4, yet the GTP-cohort in 2019 with the very low mean of 1.0.

Reasons for Stress During Preparatory Service at School:

The first cohort of SNPs' mean response in this category went down from 1.9 to 1.8 in the second year.

In the first year, the items "lesson preparation" and "didactic justification of the lesson plan in my first subject (metal/electro)" were perceived as most stressful with a mean of 2.7. In the second year, the "main seminar modules of the preparatory service" (2.5) and "didactic justification of the lesson planning in my second subject (maths/physics)" (2.4) were considered the highest ranking stressors.

The second cohort of SNP and GTP in 2018 both had a mean of 2.3, the GTP in 2019 2.2. In the second year, all reasons for stress became less relevant for the SNP (mean of 2.0), except for the item "disciplining students", which increased from 2.1 to 2.3.

Comparing the SNP and GTP in 2018, the latter perceived "lesson preparation" (3.4 vs. 2.7), "expected expertise" (2.4 vs. 1.5), "number of situations in which I am evaluated" (3.3 vs. 2.2), "lessons in which the seminar teacher spends time as an observer" (2.7 vs. 1.8), "incorporating technical and pedagogical findings into my work" (2.4 vs. 1.8) and "preparation of exams and graded assignments" (1.9 vs. 1.3) as bigger stressors.

Reasons for Stress During Studies at University:

The mean value of all SNP regarding this category after the first year was 2.2 and 2.0 after the second year. Both cohorts perceived the “empirical paper at seminar school and master thesis” as the main reason for stress in their studies (3.5 dropping down to 2.9 with the first cohort, 3.6 increasing to 3.8 with the second cohort).

Motivation for Learning:

With the first cohort of SNP, the answers to all items of this category regarding intrinsic and identified motivation worsened slightly in the second year, still remaining on a high level. The relevant items were agreed to with means between 3.2–4.0 vs. 3.0–3.6 in the second year whereas items representing extrinsic motivation and amotivation increased from values between 1.2 and 1.3 to values between 1.3 and 2.5. The mean was 2.5 in both years. The second cohort of SNP and both groups of GTP answered with very similar tendencies (mean values of 2.4 and 2.5). Intrinsic motivation was lower and demotivation higher with the GTP in 2018 but not in 2019.

Self-perceived Competencies:

The first cohort of SNP was asked to self-evaluate their competencies only after the second year of preparatory service, i.e. at the end of the whole program. Their mean assessment of competencies was 5.9²³ and ranged between 5.4 (“critically evaluate my own teaching methods with the help of didactic theories”) and

23 Scale: 1 = ‘not competent at all’, 2 = ‘not competent’, 3 = ‘slightly not competent’, 4 = ‘neutral’, 5 = ‘slightly competent’, 6 = ‘competent’, 7 = ‘very competent’

6.0 (“establish school content as educational content for pupils”; “justify the choice of media for my lessons”; “assess the quality of teaching of other teachers” lessons according to selected criteria”).

The second cohort of SNP answered with a mean of 4.6 in the first year and 5.2 in the second year and felt more competent regarding every single item.

The mean difference of 0.7 (5.9 vs. 5.2) between the two cohorts in the second year was evenly spread throughout all items.

Discussion and Limitations

In summary, all SNP experienced their first and second years of integrated preparatory service in a positive way and thus fulfilled the expectations we had of the program.

The theory-practice-interlocking and coherence were evaluated very positively, especially regarding the high agreement to feeling well prepared by university for demands of preparatory service which both groups of GTP whose phase at university and school was separated disagreed with.

Overall, the satisfaction with studies and the decision to become a teacher reached the same high level with all participants and showed only minor differences. Both cohorts of SNP felt emotionally less exhausted in the second year which is a desirable effect of a well-adjusted program.

All surveyed groups answered in the same range when it came to reasons for stress during preparatory service at school. All stressors decreased a bit in the second year of the SNP. Regarding the individual items that posed the highest ranking stressors

for SNP and GTP, many of the hands-on items the latter perceived as especially stressful, turned out to be of minor importance for the SNP. This might be traced back to the fact that these were part of the SNPs' education already at university and not new to them.

The biggest stressor during studies at university was for all SNP the "empirical paper at seminar school and master thesis". It is indeed a challenging task, requiring coordination and research in advance. Furthermore, experience shows that many of the participants underestimate the workload. The item increased to a mean of 3.8 with the second cohort. This might be explained with the fact that the rules were already strictly set for the second cohort whilst with the first cohort, the concept had still been tested with more space to move back and forth and experiment.

With regard to motivation for learning, the differences between all surveyed groups were minor. Reliable differences between SNP and GTP could not be found. Overall, motivation remained on a very high level which is a positive outcome.

Both cohorts of SNP evaluated their competencies higher after the second year and both arrived at positive levels.

These overall positive results of the SNPs' evaluation indicate that the new program is (more than) satisfactory from its participants' point of view and meeting the program's expectations. Their results are on a level that is throughout all categories at least as good as the results of the GTP or even better, e.g. regarding the theory-practice-interlocking and coherence.

However, it must be taken into consideration that all results are self-reported. Especially regarding the competencies of the new program's participants, the reliability of self-evaluation

is limited and research in this field needs to be extended and should include different approaches and measures.

As SNP usually change careers to participate in the program, their background might be different and their decision to become a teacher may be more conscious and stronger than the GTP's decision. This could have several effects on the results (regarding motivation, dedication etc.).

Furthermore, the percentage of participants of GTP was considerably smaller than the one of SNP and very low in absolute numbers. This can contribute to a distortion of the results (e.g. as people who are discontent are more likely to take the time and participate in a survey than people who are content; also, strong opinions have a bigger effect when absolute numbers are small). With regard to comparing experiences of participants of the new program to those of participants of the traditional study program in Bavaria, it would be desirable to constitute control groups with sufficient numbers of participants of other programs in the surveys.

Outlook

Long-term effects and in how far the program's worth proves itself once the SNP have entered their professional career at schools after graduation are the topic of ongoing research. For example, qualitative interviews were conducted with the first cohort in summer 2020 after the former SNP finished their first school year as regular teachers at vocational schools. It is also planned to survey the GTP after their second year of preparatory service and after they have started their regular career at a school.

3.2 THEORY-BASED REFLECTION IN SPECIALIST SESSIONS AS PART OF PREPARATORY SERVICE

As in traditional teacher education, the preparatory service in the new Master's program is split into activities at the training schools (e.g. observing teaching sessions, planning lesson and teaching), theory-focused main seminars and specialist sessions conducted by seminar teachers at seminar schools. As prescribed for vocational schools, weekly specialist sessions of at least three hours are held for both the vocational specialization and the second subject (see Staatliches Studienseminar für das Lehramt an beruflichen Schulen, p. 8). In the new Master's program the specialist sessions in the vocational specialization start in the third semester, the sessions in the teaching subject only in the fourth semester (see Figure 2 'class on special topics'). The specialist sessions are prepared and led by the seminar teachers, who determine the annual plan for the sessions based on the compulsory seminar programs. Besides organizational matters and lesson debriefings, methodological and didactic contents are dealt with, such as curriculum guidelines, observing teaching sessions, formulating competencies, using (digital) media, communicating in class, question and impulse techniques, preparation of exams and graded assignments, classroom management, didactic planning and class leadership responsibilities. The order is aligned with the above-mentioned main seminar events of the 'Staatliches Studienseminar' (see Staatliches Studienseminar für das Lehramt an beruflichen Schulen, p. 9). The specialist sessions thus provide space for intensive reflection and in-depth examination of topics relevant to the teaching profession.

Reflection in Specialist Sessions

After each session, the trainee teachers jointly work on a reflection sheet prepared by the TUM project staff to reflect on the discussed topics. They send their completed sheets back to the TUM project team, which then evaluates them. Besides a consecutive number, date and general topic(s) of the session, the document queries all discussed topics that referred to topics already treated in lectures at university. The students are asked to add an explanation, categorize the reference type as 'repetition', 'complement' and/or 'contradiction' and list the linked university modules and lectures. Even if they do not see any references to university content, the students evaluate whether they generally could identify any coordination with university content in this specific session. Finally, additions and further information can be filled in into a separate field.

The use of the reflection sheet has two goals: Firstly, student feedback helps to optimize the coordination of the curriculum between university lectures and specialist sessions at school. It allows for reflection on past and future contextualization of scientific content from university and school practice, which is discussed with the training teachers in the specialist sessions. Secondly, the reflection sheet is an additional instrument for the professionalization of the prospective teachers, who experience a close connection between theory and practice throughout their training, for it is known that both reflection-in-the-action and reflection-on-the-action (see Altrichter et al. 1993, Schön, 1983, Wyss, 2008) are beneficial for personal and professional qualitative development. The joint reflection leads to recalling topics and discussions already dealt with and to linking

these meaningfully with current learning content to generate a more complex understanding and more sustainable learning effects (see Gruber, 2017, pp. 174–177). Accordingly, the reflection sheet is one of the most important quality management instruments of the program.

Data

The described reflection sheet is the fourth, optimized version, which was introduced after three revision steps in the winter semester 2019/20. The presented study is based on data gathered since the introduction of the fourth version of the reflection sheet, i.e. the survey period covers the winter semester 2019/20 and the summer semester 2020. The data stems from 17 students of the second and 22 students of the third cohort of the program, who attended specialist sessions with nine different seminar teachers. Overall, approximately 75%²⁴ of the specialist sessions held during the survey period resulted in a reflection sheet being submitted. The data were evaluated quantitatively and qualitatively.

Results

In 186 submitted reflection sheets, 266 topics were listed which could be related to contents dealt with at university. For 114 specialist sessions it was stated that overall coordination with the university was identifiable (61.3%), in 49 meetings no agree-

24 The exact percentage might differ as canceled sessions are not always reported to the university e.g. in the event of illness of the seminar teacher.

ments were identifiable (26.3%) and in 23 sheets no information was given on the general coordination of the contents (12.4%). The highest rate of agreement was found in meetings in the area of electrical engineering & information technology (79%) followed by physics (62%), metal technology (54%) and mathematics (53%).

As far as the types of references are concerned, the most frequent 'complements' could be found (198 items), followed by 'repetitions' (118 items), with a 'repetition' paired with a 'complement' occurring in 60 cases. Only five 'contradictions'²⁵ were reported.

In addition to the frequency and reference types, it was evaluated which university courses in particular overlap with the contents of specialist sessions. Concrete points of contact were not mentioned for each overlap indicated (266), such as modules (239 times) or even specific university courses (109 times). Looking at all specialist sessions in all vocational specializations and teaching subjects together, the module "Understanding Teaching and Learning Processes II" consisting of the seminars "Teaching quality characteristics" and "Fundamentals in Empirical Educational Research for Vocational Education" is by far the most frequently represented (73 mentions), followed by the modules "Conceptualizing Oneself as a Professional Vocational Education Teacher" (56), "Planning, Conception and Implementation of Competence- and Action-oriented Technical Teaching and Learning" (44) and "Understanding Teaching

25 An example of a reported contradiction is: "Panel picture/calculation scheme: has not been considered or discussed at the [university] so far. At school, however, these topics are given special importance. -> Contradiction in the prioritization."

and Learning Processes I” consisting of the lecture “Pedagogic and Developmental Psychology” and the seminar “Teaching and Learning Processes in Innovative Learning Environments”. Looking at the individual disciplines, the module “Understanding Teaching and Learning Processes II” is also in first place for both vocational specializations. In the case of mathematics and physics, the didactic modules “Introduction to Mathematics Education at Vocational Schools” (10) and “Advanced Studies of Physics Education at Vocational Schools” (8) had most overlaps.

The subject areas most frequently mentioned as links are methods (18 mentions), observing teaching sessions (18), lesson planning (16), reflection and feedback (15), differentiation and individual support (13), proof of performance (13), competencies (12), online teaching (12), question and answer technique (11) and performance assessment (10). Less frequent topics (only one reference in each case) are parents’ evenings, evaluation, expert discussion, securing learning outcomes, motivation, organization as a teacher, social forms and team teaching.

Interpretation and Discussion

The results show a broad spectrum of reflections in the specialist sessions. Especially since the submission of the reflection sheets is voluntary, a response rate of 75% is very satisfactory but when interpreting the results it has to be taken into account that 25% of the specialist sessions do not allow for any conclusions to be drawn.

Regarding the general question of recognizable coordination in the individual specialist sessions, it is possible to understand, irrespective of detailed explanations, whether students gener-

ally perceive coordination (e.g. not only in terms of content, but also in terms of organization and communication) between seminar schools and university, and whether they perceive the cooperation between the institutions and the interlock of their education as coherent. In a large part of the specialist meetings, coordination was perceived. This suggests that the cooperation between the institutions works well.

Looking at the individual connecting links, it is also of interest which topics are linked to which modules/lectures and in what way. Whether there were recognizable repetitions, complements or contradictions in the session is not meaningful in itself: There are topics that are only dealt with once according to the curriculum. Repetitions may arise from a lack of consultation and may be unnecessary or else, may be intended and appropriate for didactic reasons. Contradictions can be irritating but under certain circumstances they may reveal different points of view, which can inspire discussion and reflection and thus contribute to a deeper understanding of complex contexts. Especially complements, which have been found frequently in the data, indicate a good linkage of theory and practice. It is plausible that complements often occurred in connection with repetitions. The number of contradictions is very small and the students' comments show that the cooperation partners do not disagree strongly.

With regard to the contents and the linked modules and seminars, we can conclude: While didactic and psychological links predominate in the sessions of the vocational specialization, subject-related links are more frequent in the sessions of the teaching subjects. The most frequently mentioned seminar "Teaching quality characteristics" and the associated module have occurred

particularly often in connection with the debriefing and preparation of lessons. The topic of online teaching was dealt with very intensively and in many sessions, due to COVID-19. In total, the possibility of reflection was used well – in 239 of 266 reflection sheets a linked module was specified.

Conclusion and Outlook

Specialist sessions offer valuable opportunities for well-grounded, effective reflection on observed teaching sessions, own teaching and related topics. The results show that the intended cooperation and mutual reference take place as planned. Moreover, this reflection enables us to approach seminar teachers and lecturers in a targeted manner in order to initiate more in-depth cooperation and agreements if the results suggest that this is necessary.

3.3 COOPERATION AS BASIS FOR THE LINKAGE OF THEORY AND PRACTICE

The close cooperation and collaboration of the two institutions in VET, university and Studienseminar is vital for the development, implementation, and ongoing success of the new study program, enabling a strong linkage and ideal match of theory and practice. For more details (e.g. regarding methods, samples, instruments, data analysis), please consult Kronsfoth (2020), a recently published dissertation, conducted as part of the research on cooperation within the new study program.

In the following, the main results will be listed that help to answer the question, what the conditions and challenges for the success of the cooperation of the two institutions in VET were

and are (with special focus on the development of the study program, e.g. curriculum, selection of contents). The following section refers to and quotes Kronsfoth (2020).

Background

For one year, several mixed-methods surveys (written and interviews) were conducted with 18 lecturers and 13 seminar teachers who were part of the new program. Their cooperation took place via phone, email, personal meetings and especially on theme days.

Results

Positive Factors for Successful Cooperation:

The lecturers and seminar teachers perceived positive and negative factors for the success of our cooperation on four levels:

- organizational (conditions, resources, central coordination)
- process-related (regular meetings, communication, process support)
- individual/personal (previous experiences, personal settings, characteristics)
- content-related (topics and goals of the cooperation)

In general, cooperation was perceived as easier for those involved when it was directly linked to everyday tasks (teaching) and regarded as useful for a specific goal or task. It proved to be more difficult when they had to identify cooperation opportunities

for routine tasks in teacher training themselves and initiate cooperation with colleagues. They preferred to start cooperating in expertise-related homogeneous groups and to continue in expertise-related heterogeneous groups. Further key results are:

- In order to facilitate cooperation and the interlocking of school and university, praxis and science, special spaces, so called “third-spaces” (Christoforatu, 2011), must be created.
- In order to cope with limited time resources of seminar teachers and lecturers, the concept of theme days in combination with regular meetings of participants in between them to work on specific topics in small groups proved itself helpful (see section 2.9).
- The prerequisite for close cooperation is personal communication and getting to know/knowing the cooperation partners in person, their tasks and competencies.
- Knowing and acknowledgement of the participants' strengths and expertise leads to a positive attitude towards cooperation, mutual trust and a positive atmosphere within the group.
- Creating space and opportunity for personal exchange between the participants is a crucial factor.
- A strong and systematic support of the process by a coordination team as initiator, catalyst and moderator is indispensable, also as information hub for a consistent flow of information, transparency and organization (see also Moroni et al. 2014).
- Joint development of goals and associated tasks have a positive effect on cooperation.

Moreover, all participants agreed on an essential conviction: They considered the joint effort to combine education at university and school for future teachers and hereby improve the quality of their education and training as important.

In order to establish a lasting cooperation, it needs to be institutionalized and constantly adapted to changing needs.

Challenges for Successful Cooperation:

Prejudices, lack of insight and understanding of each other(s' work and institution), and (too) high workloads on both sides represented obstacles for successful cooperation.

4. CONCLUSION

The provisional results presented above (including discussions, limitations and specific outlooks when applicable) cannot provide the whole picture and were selected to provide the broadest possible insight into the complexity of the new study program. In summary, the new study program's concept fulfils requirements for effective and high quality teacher education and training based on educational theory and scientific findings (see section 2).

Insights into the initial results of ongoing research indicate that the program, systematically linking theory and practice, prepares the participants well for their future profession and that they are satisfied with it. The participants feel at least as well as and in certain areas even better prepared than the graduates of the traditional program (see section 3.1).

The new study program combines crucial criteria for successful cooperation amongst institutions. The cooperation itself is

essential for the systematic linkage of theory and practice (see section 3.3).

Instruments such as theory-based reflection prove to be useful to gain ongoing feedback with regard to coordination of content and ensuring the high quality of the program whilst simultaneously contributing to the professionalization of the prospective teachers (see section 3.2).

5. OUTLOOK

Further data from the research on the new Master's program (see Figure 5) are being evaluated and finalized for future publication. Implications for improvement of the education and training of future teachers as well as the ongoing research itself are being revised and integrated as necessary. Moreover, a manual for the development of the program and its components is in preparation so that the concept and/or individual elements can inspire, be used or modified by other teacher education and training institutions.

Based on the results of our research, experiences and feedback from participants (students, graduates, lecturers, seminar teachers) and others involved in vocational teacher education and training, we plan to establish this program on a permanent basis as an alternative for future teachers at vocational schools for the newly and successfully addressed target group.

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APPENDIX

Questionnaire: “Evaluation of Students’/ Trainee Teachers’ Experiences during the First and Second Years of Preparatory Service”

Perceived Theory-Practice-Interlocking: Coherence between Studies at University and Preparatory Service at School

This category consisted of the following statements, based on Seidel et al. (2014) as well as on Alles et al. (2019) which were slightly adapted to meet the aims of this study:

- (a) I feel that the university has prepared me well for the professional demands of my preparatory service.
- (b) I perceived the transition from university to preparatory service as a hard break.
- (c) I think the transition to the preparatory service should be improved.
- (d) I think the coordination and connection between studies and preparatory service should be improved.

Participants answered to what extent the statements applied to them on a self-report scale that offered the options 4 = ‘applies’, 3 = ‘tends to apply’, 2 = ‘tends not to apply’ and 1 = ‘does not apply’.

If they checked an answer that tended to imply or implied a need for improvement, they were asked the following open questions: (a) What do you think should be changed in order to be better prepared? (b) In what way? (c) How could the transition be improved? (d) What could be improved in the coordination and connection?

Satisfaction with Studies and the Decision to Become a Teacher as well as the Burden of Studies in Terms of Emotional Exhaustion

The following items are based on Schiefele and Jacob-Ebbinghaus (2006) and Max-Planck-Institut für Bildungsforschung (2010) regarding satisfaction with studies and the decision to become a teacher (item 1 to 5), and emotional exhaustion (item 6 to 9). Concerning the latter two, the original items had been developed for in-service teachers and thus were modified in order to fit our purpose.

- Items 1 to 5: I enjoy my work.; I am satisfied with my tasks.; I would decide again to become a teacher.; I can recommend my field of activity to others.; I think my decision to become a teacher was right.
- Items 6 to 9: I feel exhausted from my duties.; I realize how listless I am.; I feel overwhelmed by my tasks.; I feel depressed at the end of the day.

Participants were to answer to what extent the statements applied to them on the scale presented in the section above.

Reasons for Stress During Preparatory Service at School

Based on the version of Seidel et al. (2014), modified for the present purposes, the participants answered if or to what extent they experienced the following as stressful during their preparatory service at school on the same scale as presented before:

number of own lessons; number of situations in which I am evaluated; lessons in which the seminar teacher spends time as an observer; relationship with my seminar teacher; atmosphere among the trainees; main seminar modules of the preparatory service; expected expertise; support from the seminar school; conveying & explaining content in my lessons; dealing with & advising students; my educational mission; disciplining students; incorporating technical and pedagogical findings into my work; preparation of exams and graded assignments; lesson preparation; teaching; lesson follow-up and reflection; didactic justification of the lesson plan in my first subject (metal/electro); didactic justification of the lesson planning in my second subject (maths/physics)

Participants had the option to add other reasons for stress during preparatory service at school.

Reasons for Stress During Studies at University

The items were exclusively presented to SNP as only they continued their studies at university during their preparatory service.

Lightly based on Kauper et al. (2012) and Heublein et al. (2003), adapted for the present purposes, the participants answered if or to what extent they experienced the following as

stressful during their studies at university on the same scale as presented before:

number of courses; quantity of study and examination material; pressure to perform; number of fellow students present at a course; level of challenge; number of exams; climate among the students; empirical paper at seminar school and master thesis; events in which my fellow students have different levels of knowledge than I do.

They had the option to add other reasons for stress during studies at university.

Motivation for Learning

Regarding the past year, participants were asked if or to what extent the following applied (same scale as before). The “Variants of motivated learning” (Prenzel et al. 1996) served as a basis for the items.

Intrinsic motivation: Time just flew by.; I was so fascinated by the work that I gave my best.; I really enjoyed teaching.

Identified motivation: I got involved because I wanted to achieve my own goals.; I wanted to understand/master the subject matter (which is taught to students) myself.; It was clear to me that I had to meet the requirements for my profession.

Extrinsic motivation: I only did what was expressly required of me.; I would have done nothing without pressure from outside.; I only made an effort so that I would not get into trouble.

Amotivation: I didn't care.; My mind was somewhere else.; I tried to get through it with as little effort as possible.

Self-perceived Competencies

This category was added in the second year (2019) in the questionnaires for SNP. They self-evaluated their competencies regarding the following statements based on Gröschner (2009) with the introduction “Regarding the following I feel...” on a Likert scale from 1 to 7 (1 = ‘not competent at all’, 2 = ‘not competent’, 3 = ‘slightly not competent’, 4 = ‘neutral’, 5 = ‘slightly competent’, 6 = ‘competent’, 7 = ‘very competent’):

establishing school content as educational content for pupils; planning lessons in my two subjects on a didactical basis; clearly structuring learning situations for pupils; critically evaluating my own teaching methods with the help of didactic theories; implementing a limited number of student-oriented teaching methods (e.g. project work, group work, presentations) in the classroom; developing tasks in my teaching subjects that promote pupils' learning; justifying the choice of media for my lessons; assessing the teaching quality of other teachers according to selected criteria; awakening pupils' greater interest in a topic; providing pupils with learning strategies to encourage further learning; reflecting on lessons guided by criteria using my own observation protocols.

Adult educators' competences. The principals' view: A comparative study of Komvux and Folk high schools in Sweden²⁶

Sofia Antera*

Abstract: Due to the growing importance of lifelong learning, country examples of good practices are attracting more attention. Characterized by high participation rates, the Swedish adult education is considered thriving. However, with regards to adult educators' qualifications, low regulation is detected making Sweden an intriguing case for investigation. The current study explores adult educators' competence, identifying the most significant competence, by examining the perspective of school principals, actors with major influence in recruiting and further training of adult educators. The study engages a qualitative approach, collecting data through semi-structured interviews with the principals. The findings reveal that the locus is on competences related to teamwork and organizational learning. On the other hand, teaching competences, especially in the form of formal qualifications are not the center of attention. Nevertheless, the lack of initial education programs specialised

²⁶ This chapter is based on the author's master thesis which can be accessed at: <http://www.diva-portal.org/smash/get/diva2:1112335/FULLTEXT01.pdf>

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in adult learning affects the professionalization of adult educators in unexplored ways and thus requires more research.

Keywords: adult educators, competence, principals, Municipal Adult Education (MAE), Folk high schools (Folkhögskolor)

1. INTRODUCTION

Over the last decades, adult education has received considerable attention. Emerging policies on lifelong learning, which encompasses adult education, proliferate and international entities continue to highlight its vital contribution to economic development, the conservation of democracy and social cohesion. Lifelong learning has acquired this international dimension (Hodgson, 2000), reinforced by defining it as the 4th Goal in the Sustainable Developments Goals for 2030 (United Nations, 2016), making adult education a major contributor to the development of global citizens and vocational adult education a popular pathway to enter the labour market.

Key role in this learning process hold the adult educators, the individuals assigned with the responsibility of facilitating these goals (Statistiska CentralByrån – SCB (Statistics Sweden), 2019). The present study sheds light on the requisite competences for adult educators in the Swedish system, with a focus on core competences as they are addressed in the process of recruitment and in-service training programs. In terms of adult educators' professionalization, whether they belong to general or vocational education, important gaps are detected in research activity (Commission of the European Communities, 2007; Fejes et al., 2015; Lattke & Jütte, 2015). Thus, exploring this partially researched aspect of adult education is regarded

as necessary, especially in a time when staff skills are vital to quality assurance.

Reviewing the literature, adult education, and more specifically the background of those designing and implementing it, is neglected. Over the centuries, education policy has placed the focus on youth training, whereas “teacher training” almost always alluded to regular school system teachers, placing various types of teachers like adult educators, vocational teachers and youth teachers in the same category, even if their vocation has been characterized by special difficulties (Andersson, Köpsén, Larson, & Milana, 2013; Ministry of Education and Research, 2008).

The Scandinavian countries have been perceived as role models in general and vocational adult education and served as inspiration point for other countries (Gougoulakis, 2012). Traits that recommended Sweden as a unique case include the high participation rates (Boström, Boudard & Siminou, 2001), even with reference to students with low formal education level (Desjardins, Rubenson, & Milana, 2006). Reports on the Swedish case often create a blur scenery between the limits of adult and vocational adult education, making the researching of them hard to approach separately (Statistics Sweden, 2019). Furthermore, the shift from a centralized education system to a decentralized one, characterized as market oriented, has set Sweden in the center of attention, rising doubts on the impact of such a transition (Lundahl, Arreman, Holm & Lundström, 2013).

In this context, quality of adult education has been advocated quite often, with all the governments over power agreeing on the fact that adult educators are crucial factors of it (Ministry of Education and Research, 2014). Despite their importance,

though, adult educators usually “lack formal preparation for teaching adults prior to entering the profession” (Andersson, Köpsén, Larson, & Milana, 2013, p. 2). The lack of training programs specialised on adult education, not only in Sweden but in various European countries (Andersson, Köpsén, Larson, & Milana, 2013), further supports the significance of the study. Although a country with long tradition in education, Sweden still indulges in low regulation of adult educators’ and vocational teachers’ profession (Antera, 2019; Milana, Andersson, Farinelli et al. 2010; Milana, Andersson, Gross et al. 2010; Milana & Larson, 2011).

Formal and non-formal adult education is designed and implemented by a broad range of education providers, which allows for a variety of different approaches (Statistics Sweden, 2009). Nevertheless, quality education is guaranteed also by improving adult educators’ competences (Statistics Sweden, 2019). Formal regulation for the competence formation of adult educators is low and restricted in the same requirements as the rest of the teachers and more specifically secondary teachers (Ministry of Education and Research, 2008), although it is proved that specialised teacher education for adults and certification contribute to their success (Kennedy et al. as cited in Kunter et al. 2013). Especially non – formal education is regarded as the least regulated with reference to the same topic (Milana, Andersson, Gross et al. 2010). Low regulation allows education providers to deeply influence the competence development of their staff, since big part of their training takes place in the workplace (Statistics Sweden, 2009). Hence, education providers have the right to shape the “new” profession of adult educators and mark their path towards professionalization.

Gaps related to adult educators and their competences on initial and continuing education, are not detected only in Sweden. European Commission financed a study attempting to define a framework of key competences for adult education sector professionals, which will serve as a reference point for further development of adult education sector (Buiskool et al. 2010). This increasing interest on the field combined with the unexplored aspects of it makes a comparative study a small, but contributory step in defining adult educators' profession.

1.1 AIMS AND OBJECTIVES

The aim of the study was to explore the competence of adult educators that is perceived as important and is prioritized by principals of adult education institutions in the Swedish context. In other words, the study underlined the most desired competences for adult educators and the reasons behind their importance through the lens of adult education organizations' principals. More specifically, the study intended to answer the following research questions:

- Which competences do principals perceive as necessary for an adult educator?
- Which adult educators' competences are considered most important by the principals?
- What is the significance of these competences? Why are some competences preferred over others?

1.2 COMPETENCES IN THE CENTER OF ATTENTION

In the European arena there is a growing preoccupation with competence, a concept describing what earlier was referred to as qualifications. This trend has affected teaching professions too, including the adult and vocational education field.

More specifically, Barros (2012) refers to the transition from the qualification model to competence model around the end of the twentieth century, introducing the concept of competence. Defining competence has not reached yet a consensus (Ellström & Kock, 2008); however, scholars agree that it brings an instrumental approach in education and it is deeply related to educational results. Most of Organization for Economic Co-operation and Development (OECD) and European Union (EU) countries had adopted the competence model by 2009 (Barros, 2012).

Distinguishing competence and qualification, the former is an employee's attribute, which will potentially be translated into performance of a specific level, since it is another form of human resource. Described as the capacity to deal successfully with certain situations or tasks, competence is defined in terms of "perceptual motor skills (e.g. dexterity); cognitive factors (different types of knowledge and intellectual skills); affective factors (e.g. attitudes, values, motivations); personality traits (e.g. self-confidence); and social skills (e.g. communicative and cooperative skills)" (Ellström & Kock, 2008, p. 6). Based on this definition, qualification is approached as the competence needed for a task that is prescribed by the employer. Therefore, an individual may possess competences that are not actually qualifications, since they are not required for a job or task. In this sense, the qualifi-

cation is used to describe competences with an exchange value in the labor market (Ellström & Kock, 2008).

Although slight differences justify the existence of both concepts, namely competence and qualification, it is common that they are used interchangeably, especially in the workplace. Comparing competences and qualifications, the move of the locus from what is needed to perform a profession (qualifications) to what an individual is capable of doing (competence) is obvious. Setting the human potential in the center of attention it is interesting to further investigate what is defined as competence, how it is measured and what competences are needed in specific professions. The present study attempts to answer some of these questions with relation to adult educators, a group of professional with vaguely defined identity (Buiskol et al. 2010).

1.3 PREVIOUS RESEARCH: THE IMPORTANCE OF COMPETENCE FRAMEWORKS

Previous research on adult educators has been dedicated to developing international frameworks of adult educators' competences and investigating their paths to professionalization. In addition, several studies refer to assessment issues and adult educators' role in the learning process.

Reviewing the research activity linked to adult educators' competences, it is concluded that although research has been realised in different contexts, the areas of focus remain the same. Reviewing and comparing the existing frameworks, it is concluded that there are six competence areas. Knowledge, professional development, assessment, design and implementation of the learning process, counseling and support and finally moti-

vation constitute the areas that adult educators are expected to develop competences at, in order to be able to successfully perform their profession.

Acquiring competences in all the areas is characteristic only of a “super human” (European Commission, 2013) and it is utopian to expect adult educators to turn into such creatures. Consequently, it is assumed that some areas are prioritized over others. In a profession that is not yet defined and is characterized by variety such prioritization has a crucial impact on shaping it in all the five dimensions that Ekholm (as cited in Gougoulakis & Bron, 2011) suggests as vital, namely knowledge base of the profession, responsibility for the profession, existence of professional ethics, control of who is eligible to exercise the profession and professional autonomy.

Under these circumstances, frameworks with international amplitude are helpful but not exhaustive. Further research on national level is needed to explore which of these competences are desirable in specific contexts. Why are they important and which of them are prioritized over others? The diversity of adult education allows the assumptions that no country constitutes a same case with another one.

Competences frameworks have various implications in national level, institutional and individual level. Setting the locus on national level, the use of competences frameworks assists the development of professional standards or serves as a basis for certification of professional adult educators. In institutional level and with reference to principals’ role and obligations, frameworks of competences allow the development of job descriptions and may serve as an agenda for making the final hiring decisions. In terms of internal evaluation, competences can

be applied as an assessment tool, evaluating the current situation and assessing the need for further professional development. Finally, as a common framework of reference competences can facilitate better communication between different adult education professionals, always aiming to development of more efficient and apt programs (Sherman et al. 1999).

Based on the relevant research activity, the following projects have been selected as impact studies that resulted in competence frameworks for adult educators. They include:

- PRO-NET – Building Professional Development Partnerships in Adult Education (Sherman et al. 1999),
- Adult education teacher competencies: Developed by the American Institutes for Research (American Institutes for Research (AIR), 2015).
- VINEPACK: Validation of Informal and Non-Formal Psycho-Pedagogical Competencies of Adult Educators (Romanian Institute for Adult Education (IREA), 2008). Part of it is Validpack, an instrument with validation instruments introducing a framework for documenting and evaluating the competences of adult educators
- QF2TEACH – Qualified to Teach (Bernhardsson & Lattke, 2009).
- Key competences for adult learning professionals (research voor Beleid report) (Buiskool et al. 2010).

Either through presenting the “ideal adult educator” or by trying to identify the existing competences in the arena of adult education, they all result in a coherent framework that describes the knowledge, skills and attitudes of adult educators as profession-

als.Regarding the broader categorization of competences, all five frameworks (AIR, 2015; Bernhardsson & Lattke, 2009; Buiskol et al. 2010; IREA, 2008; Sherman et al. 1999) include assessment and monitoring the learning process, design and implementing learning activities and motivating and guiding learners in various stages and issues. In addition, continuous professional development of adult educators is vital part in every of them, while knowledge involves awareness of the learning needs of adults, characteristics of the group of learners and of course content knowledge in the specialised area. The following table shows the six competence areas:

Table 1. Competence areas

Knowledge Under the title of knowledge different frameworks list different competences. Content area knowledge is, though, included in all of them. Content area knowledge is related to the creation of a knowledge base on the subject, while an adult educator should be capable not only of acquiring this knowledge but also of applying any specialised teaching method. Nearly all frameworks refer to acquisition of adult learning theory, while also stressing the importance of being aware of the psychosocial profile and background of the group of learners.	Assessment Besides, evaluation of any stage or overall evaluation, this category includes also needs assessment. In other words, detecting learners' needs and prior knowledge is vital, especially in designing a learning path attractive for them. Moreover, continuous monitoring through assessment data, which derives from various assessment strategies, is a complex and vital competence for adult educators Furthermore, assessment should be both summative and formative and always data based, so the instruction undergoes changes if needed.
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Personal professional development With reference to this field, adult educators are expected to be able to assess their learning needs and the existing opportunities for further learning, including involvement in professional networks and learning communities. Based on these needs, their personal experience and their self-reflection and evaluation, they should proceed to their development actions that can either take place in individual or collegial level, always monitoring the whole process. Incorporating new skills and knowledge as well as being involved in the improvement of the educational programs are suggested as significant competences of this field. Finally, there are some competences that serve mostly as prerequisites for achieving professional development. More specifically, interest in further development and personal commitment, along with creativity, flexibility, self-assurance and accepting criticism are valued and desired too.	Design and implementation of the learning process All frameworks agree in the necessity of establishing a learning environment characterized by diverse learning styles and various learning opportunities that respect diversity and correspond to a wide needs spectrum. A learner-centered approach is quite often addressed as another trait of this environment, along with flexibility between individual and group learning. Regarding aims, adult educators should reassure that they include technological literacy, development of higher-order thinking and problem solving as well as communication skills. Furthermore, lesson or individual study plans should be consistent with the general aims and mission of the program. Teaching methods should be in agreement with the way adults learn, sequencing and pacing the lessons appropriately.
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Counseling and support The “competence in advising on career, life, further development and, if necessary, the use of professional help” describes the role of an adult educator as a counselor or advisor (Buiskol et al. 2010, p. 13). Other frameworks additionally suggest the provision of multiple educational resources, the support of informal learning and the guidance in developing and reviewing learners’ study plans.	Motivation Motivation is an area that is part of all frameworks. Sometimes it is included in support and counseling and, thus, approached accordingly. Nevertheless, QF2Teach and Adult education teacher competencies add clear and effective communication as well as communication of high expectations and motivation towards their achievement as competences related to motivation. Furthermore, engagement in active listening, dialogue and questioning, along with inspiring learners are regarded as parts of adult educators’ competence to motivate and engage learners.
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2. METHODS

In an attempt to highlight the “complexity of reality” (Strauss, 1987), this study particularizes the object under discussion, namely adult educators’ competence. Setting the locus on social processes (Bryman, 2012), a qualitative strategy was regarded as appropriate to provide with a deeper insight of the reasons behind selection of specific competence.

Adopting an inductive perspective (Goddard & Melville, 2004), the trailhead of the research path was the detection of the key competences, whereas the findings were used in the effort to construct part of adult educators’ professional profile, through defining the most desired competences in Swedish adult education. Since “social reality has a meaning for human

beings and therefore human action is meaningful”, individuals “act on the basis of the meanings that they attribute to their acts and to the acts of others” (Bryman, 2012, p. 30). Therefore, the role of the researcher has been to access the views of individuals, in our case principals, and attempt to interpret their actions. The researcher adopted an interpretivist and constructionist epistemology, aiming at analyzing social reality as interpreted and constructed by the individuals involved in it.

The research design was of a comparative study, contrasting different cases, to better understand the social phenomena (Bray et al. 2007; Bryman, 2012). Having a deeper insight in the case of Sweden, a pioneer in adult education, and more specifically in the variety of competences that may be regarded as preferable among different types of education providers is needed, especially because of the lack of regulatory framework in relation to adult educators’ competences. A micro level comparison, between two different types of educational providers, allowed an emphasis on the role they display in the fostering of specific competences of adult educators (Dimmock, 2007). Notwithstanding, the outcome of comparison cannot be generalized, neither in other countries nor types of educational providers.

2.1 RESEARCH METHODS

The findings presented in this article derive from semi-structured interviews performed as part of the author’s master thesis. The thesis methodology included also a systematic literature review on the on adult educators competence to support her findings.

The empirical part of the study consisted of interviews with principals of adult education institutions. In the Swedish case,

the legal framework for adult educators is not strictly defined (Milana et al. 2010), thus education providers have freedom of making decisions about the competences adult educators should have. Hence, institutions that provide education are the units of comparison selected and they compose the context sample of the study. More specifically, the two types of education providers chosen are (Komvux), municipal adult education centers, and Folk high schools, institutions with long tradition that offer formal and non-formal adult education respectively. While both providing free of charge general and vocational courses for compulsory and upper secondary education level, these education providers differ in the form of education they offer and the degree of freedom they enjoy.

Principals in all adult education centers in Stockholm have been contacted as representatives and knowledgeable of the schools ideology. The five interviewees were recruited voluntarily.

Table 2. Difference between Komvux and Folk high schools

Komvux (Municipal adult education)	Folk high school (Popular adult education)
Funded by the municipalities	Funded by the state
Regulated by the municipalities	Regulated by county councils or regions
Centrally established curricula	Freedom in curriculum development
Formal teacher qualifications	Formal teacher qualification not required

Not specialised university programs (teacher training for secondary education level)	Specialised folk high school teacher training (60 ECTS) ²⁷
Formal learning	Combination of formal and non-formal learning activities
Management in collaboration with the municipalities	Self-management

Semi-structured interviews were selected, as the less structured an interview is, the greater flexibility it offers, contributing to highlighting the complexity of the situation (Cars, 2006). The interviews lasted approximately 30 minutes. They included descriptive, structural and contrast questions with aim to capture the principals' views and the rationale behind them (Harrell & Bradley, 2009). The axes of the interviews were desired competences for adult educators during the *recruitment process* and the *in-service training*. The processes are chosen as vital points in the procedure of the determining the professional identity of adult educators, firstly due to the legislative ambiguity on adult educators' eligibility (Ministry of Education and Research, 1977) and secondly to the significance of in-service training in professional development.

The interviews were conducted in English, due to the researcher's low level of Swedish. To overcome the language barrier, the researcher had thoroughly informed the interviewees for the interviews' topics in advance, allowing reflection and preparation for discussion. Finally yet importantly, the interviews have been recorded and transcribed.

27 ECTS: European Credit Transfer and Accumulation System

The interview findings were categorized based on two main processes, recruitment of new teachers and in-service training. As the approach is inductive, the themes emerged from the interviews. The following table summarized the themes.

Table 3. Themes deriving from the data

Themes	Codes
Teaching skills	Formal teaching qualifications, design and implementation of teaching (incl. identification of the needs of the student population), assessment, coaching, IT skills
Subject area knowledge	Work experience in the teaching subject
Team work	Collaboration with other teachers, participation in meeting, share of practices
Self Reflection	Assessment of educators' learning needs, self development, assessment of teaching practices
Personal qualities	Passion, commitment, curiosity, creativity/innovation
Communication	Student teacher relationship, non Swedish speaking students
School vision	Awareness and agreement with school vision (focus either on general profile for example religious school or the teaching approach adopted)

3. RESULTS

Komvux principals

Carol and Helena [pseudonyms] are principals in two Komvux centres. Carol, who works and at Health for All [pseudonym], has a secondary teacher background and experience both as a teacher and a principal for secondary and adult education. Helena, the principal from Lillenhaugen Komvux [pseudonym], completed her studies in Economics and Socionomics, and worked for a big political party in Sweden. During that time, she attended the course for folk high school teachers and later she worked as one. Her principal career is also long, working for a study center and for Komvux.

Although both with long experience in adult education, they have different approaches with regards to desired competences for the adult educators employed at their schools. Carol focuses on personal characteristics and traits that create the potential of a good adult educator and can be further developed. On the other hand, Helena seeks for specific clearly defined competences, with aim to reassure efficient learning for the students in her institution. Both interviewees mentioned the necessary teaching qualifications, which are required by the respective legislation.

While recruiting new educators both principals tend to check formal teaching qualifications. However, when they were asked to prioritize competences during the recruitment process, they both mentioned formal teaching qualifications first, because they are required by the law. This raises some doubts about the balance of teaching skills between being a desired and a formally required set of competences. In formal teaching qualifications, the principals included subject knowledge and design

and implementation of the learning process with all the competences these processes require.

Besides the common basis of required competences, the two principals adopted a different approach. Carol referred to passion, commitment and motivation on new teachers along with curiosity and open mindedness, while teamwork and knowing their own self was regarded as helpful. All these competences combined describe a well-rounded individual, but not necessary an educator. They would be appreciated in any job and they constitute transferable competences in many other professions. This approach indicates that in this school self-awareness and motivation to succeed are the entry requirements, while teaching related skills come slightly after that.

On the other hand, Helena set the working experience in the locus. Helena mentioned that she does not agree with the legislation not allowing teachers with folk high school training to be employed in municipal adult education. For this reason, it is assumed that formal teaching qualifications are prioritized by her only by necessity and the next set of competences, “working experience” as she named it are the most desired ones. Including knowledge on adult learning, ability to use learners’ experience and skills as a resource in learning, awareness of the psychological profile and the background of the adult students as well as establishing a respectful relationship with them, working experience equips adult educators with a set of competences that are directly linked to adults’ successful learning.

“If they have experience form adult education it is very good, because it is very different to work with adult education and to work with children” (Helena)

“You have to see that this is a person that has experience. He hasn’t been to school but he has experience as adult, from work, they maybe are parents so you know they get a lot of life experience and that’s important, that you as a teacher take care of this and you can involve the whole student in the education” (Helena)

Thus, Helena focused on already developed competences to reassure that the new educator is ready to contribute in the institution. Moreover, minority languages were mentioned as desired competence. This competence was not mentioned by other interviewees, although nearly all principals talked about the issues raised due to low level of some students in Swedish.

Concerning in-service training, reflection on educators’ own practices was the common point for both institutions. Still in Carol’s school, this was focused on the person, while in Helena’s case it was focused on the teaching techniques applied in the classroom. This can be explained by the fact that Health for All was a new school. Their ideology was to begin from the teacher and then move from the individual to the group and then to the school. Lillenhaugen Komvux on the contrary, had operated for some years and it was already in the next stage, where reflection practice focuses on the school and the teaching. In addition, another difference constitutes the importance of the vision in Carol’s school, whereas in Helena’s teachers were more concerned with improving competences on teaching non-Swedish students.

Folk high schools principals

Leo [pseudonym], the principal of Björn folkhögskola [pseudonym], has studied art and worked as an arts teacher in folk high schools, before becoming a principal. After receiving this position, he joined the principal program. Björn [pseudonym], the principals of St Bernards Folkhögskolan [pseudonym], holds a PhD in Philosophy of Theology. He was employed by the Church and by Student Förbundet (Students' Association). He attended courses in leadership, which is obligatory for principals in Sweden. Finally, Tomas [pseudonym], the principal of Stockholm's United folk high school [pseudonym], studied Theology and worked as a local minister of the United Church of Sweden. He also worked as a teacher before becoming principal.

Beginning with the recruitment process, it was common among all the interviewees to require the new educators to be able to collaborate with other colleagues and generally be able to work in groups, as this is the way teachers work in all three schools. Whether described intensively or shortly, teamwork was mentioned by all three interviewees among the first and most important characteristics of a new adult educator and as necessary trait, in order to remain in their position. Besides clear communication, managing of group dynamics and handling conflicts, participants referred to sharing and exchanging of good practices or knowledge among colleagues, coping with criticism and being open-minded. Hence, being a team player is expected both as an attitude and as a skill.

Subject area knowledge is also discussed among the most wanted competences. Although in some cases it is related to teaching skills or included in them, it is always mentioned

separately as well, highlighting its importance. Subject area knowledge is not always proved by formal qualifications. For some principals working experience or a career on the field, especially with reference to arts, was considered adequate proof. Formal qualification was though appreciated.

Teaching skills were also prioritized but vaguely defined. In the case of Stockholm's United folk high school, they were defined through the description of the good teacher characterized by passion, humility, patience and the ability to monitor progress. For Tomas, supporting informal learning was of major importance combined with being available and accessible to students and establishing clear communication with them.

"I think this is a good teacher, somebody that can walk beside a student and follow that student forward and walk together."
(Tomas)

The same was also discussed by Björn, who also added the significance of being aware of the concept of folkbildning, relating teaching skills with experience from folk high schools and their philosophy.

"In the way that this is implemented in the teaching is that we work with the teachers, [on] this is what this schools is about and although they are not Catholics, the teachers most of them are not Catholics, they sort of say this is something we can identify with and sort of goes hand and hand with the whole idea of folkbildning." (Björn)

In all cases, the role of an adult educator was discussed besides teaching. The focus on informal learning and the development of tight personal relationship with the students was regarded as vital.

With reference to in-service training, personal professional development was the only area targeted by all interviewees, since in-service training is mostly based on individual educators' needs and it does not occur in a systematic way. However, in all schools there were short trainings that are already set, but they target different competences. In Stockholm's United folk high school, the focus was on the development of teamwork related skills, in the case of St Bernards folk high school raising awareness about the vision of the school and its meaning is the goal, while in Björn folkhögskola the locus was on knowledge regarding special learning characteristics of students with disabilities and students with Swedish as their second language.

If we could summarize the preferred competences as a type of education provider, during the recruitment process folk high school principals look for adult educators with teamwork related skills, subject area knowledge and teaching skills, including involvement in informal learning of students and establishing close relationships with them. On the contrary in-service training aims at covering numerous needs emerging and corresponds to a wide variety of competences, like development of team spirit, raising awareness on schools' vision, knowledge for characteristics of special group of students or Information Technology (IT) related skills.

4. COMPARISON OF KOMVUX AND FOLK HIGH SCHOOLS

Comparing komvux and folk high schools several similarities were detected. Nevertheless, the reasons lying behind the preference for these competences were diverse. Furthermore, it is of interest that the findings included competences not distinctly mentioned in the already existing frameworks, namely teamwork and the importance of vision awareness.

All the interviewees stressed the importance of teamwork and group prosperity. The necessity for the newcomer to be able to fit in the group and collaborate effectively with the rest educators, valuing the development of the team as a whole equally with their own personal progress introduces a group of competences that were prioritized among the first three most important competences, teamwork competence. However, being a team player is quite general to cover the variety of the answers included in this study's findings. Interesting case constituted the St Bernards folk high school, where being able to fit the team was translated as be younger than the rest, but self-assured and preferably male, in order to bring a balance in the synthesis of the teacher population. In the case of Health for All, teamwork was centered around clear communication and having the same goals, while finally in Stockholm's United folk high school offering help between colleagues in practicalities, like absence, was vital. In example of Lillenhaugen komvux center, the team of teachers was approached more as an environment where educators should share their teaching practices and reflect on them individually and collectively. Consequently, different schools perceived teamwork differently, since it aimed at fulfilling different purposes.

Besides the variation related to the teaching skills among schools, the notion of *folkbildning* constituted an additional difference between komvux and folk high schools. *Folkbildning*, defined as a teaching approach where formal and non-formal learning activities are combined, is part of the desired knowledge for adult educators that seek employment in folk high schools. According to principals, prospective teachers were expected to be aware of this notion, agree with it and be ready to implement it in their teaching and their involvement in the organization. This approach was not present in municipal adult education (Komvux), where the educators were more “professional” and, thus, limited their teaching practices inside the classroom.

5. DISCUSSION

By interviewing principals of adult education centers about the desired competences of adult educators, this research study attempted to define part of the adult educators’ professional profile, focusing on competences that they are highly possible to possess or develop in their career. The findings underlined some competences that international frameworks already include along with some that are not present in them, supporting the argument of wide variety in adult education field. Furthermore, by critically analysing the findings, conclusions and points of interest have been reached, especially in relation to the reasons behind preferring specific competences.

One of the most discussed set of competences congruent with the nature of the profession is the teaching competences, including all the competences related to the design and implementation of the learning process. Teaching related competences are

prioritized by Komvux adult education centers, but as a necessity. The fact that they are required by the legislation makes it hard to investigate their importance for the principals under other circumstances. Under “formal teaching qualifications” principals referred to teaching skills without details, probably because they consider them predetermined. Do they really trust the educational system and its certifications as valid knowledge testimony, or teaching skills are expected to be developed in the workplace? Whether a certificate is enough or teaching skills are not vital requirements for being recruited, teaching competences come in the first place as necessity based on the finding deriving from this research.

Investigating the same set of competences in a context where they are not required by the law offers another perspective. In folk high schools, formal teaching qualifications are not prerequisite for employing an adult educator and according to the findings teaching skills are desired, but with a very specific meaning. Because of non-formal learning holding an important role in folk high schools, adult educators are expected to be aware of non-formal learning activities and actively participate in them. Consequently, the competence of supporting informal learning approached as a skill that was practiced and developed, is what folk high schools’ principals described when they were further asked about teaching skills. This prior experience was also needed, in order for the educators to be able to teach in agreement with folkbildning, where formal and non-formal learning are combined.

Teamwork skills are of great importance and constituted part of all the interviews. In general, in Sweden teamwork is promoted (Sohrevardi, 2013) and educators are expected to help

each other, be prepared to work together and share practices. Although not directly related to teaching in the classroom, teamwork skills enhance the opportunities for development for an educator and are in agreement with the general culture of the Swedish workplace. Hence, the fact that all the participants discussed this competence as vital comes as no surprise. Teamwork, either reinforcing the unity of the school or allowing exchange of practices, is desired and remains vital for adult educators both as a skill and an attitude in Komvux centers and folk high schools.

Another competence thoroughly discussed is the awareness of the vision. Determining the vision of the school and using all the resources to achieve this vision is the notion behind the importance of the vision and it is a basic idea in Leadership Training in Sweden that all the participants have attended due to their job position (Johansson, 2001). Although more prevalent in folk high school cases, awareness of the vision is important for all the participants, both as a philosophy infused in all the aspects of the school's life and as requirement for prospective adult educators. Additionally, awareness of the vision is required in both processes, namely recruitment and in-service training, in the first as information that teachers need to have and be in agreement with and in the latter as knowledge that further needs to be developed. Therefore, thorough knowledge of the vision is of major importance.

Reflecting on the importance that teamwork and vision awareness receive, it is assumed that the context of Sweden influences the boundaries on what is important and what is not. Since both constitute vital elements of the Swedish educational culture, their significance is easily explained and should be taken

into consideration when competence discussion moves from an international to a national level. This difference detected by the study highlights that variations in adult education can be so wide that prioritized competences in the Swedish context are negligible in international level. Hence, international frameworks although advantageous are not adequate to describe the situation of adult educators in country level.

With regards to in-service training, competences of importance for both education providers include self-reflection and evaluation of educators' own practices as well as competences related to group of students with special learning needs, like non Swedish speaking students or students with special needs. All the interviewees mentioned already organised sessions for reflecting on teachers' practices, both individually and in groups. In most of them discussing problems and difficulties with colleagues is addressed and educators are expected to initiate change after the reflection if they consider it necessary. Although this can be considered part of the evaluation process, principals discussed it as part of in-service training, because they consider it part of educating their educators. This reflection process is of much importance. The reason for this is the fact that it is already set and time is allocated from the working hours on this activity. Thus, refining of instructional practices through reflection (AIR, 2015) and initiating changes in the teaching methods applied to improve quality (Sherman et al. 1999) is of value, because it constitutes development of competences for educators and improvement of the learning process for the institution and can be easily understood considering the importance of teamwork as well.

Furthermore, a knowledge approach is detected when discussing about the vision. The awareness of the vision is related to

being informed of that and understanding it rather than translating it into teaching practices. This argument is further supported by the fact that principals recognize value in experience in folk high schools not only as teachers but also as students, setting the focus on being aware of the idea of folkbildning and how it is implemented in teaching.

All in all, the case of Sweden has been proved interesting highlighting aspects of adult educators' profile that are important in this context but maybe trivial in other settings. In this unique environment adult educators' competences are approached mostly through the enhancement of the team and the progress of the learning organization rather than as individual units. Competences are always defined and justified with reference to the institution and the ability of the educator to contribute in the proliferation on this entity. This perspective indicates a demand for educators that acquire the need for contributing to a bigger entity and be part of a bigger aim.

6. CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Understanding the professional profile of adult educators and how it is constructed is a goal that cannot be completely reached by this study. Considering more aspects of their professional identity as well as investigating the perceptions of other actors influencing it can be interesting and contributory future research. For instance, teachers' associations constitute major actors in the professionalization process of any profession, adult educators included.

A greater focus on teaching competences may also be of interest. While this study set the locus generally in adult educators'

competences, the results indicated divergence and variation regarding teaching competences, which were expected to be core in the discussion. This issue demands further research, especially in the context of Sweden. More specifically, defining and exploring teaching competences of adult educators in non-formal Swedish education could be further explored, since major stakeholders, like principals, have expressed contradictory views about their importance. Such research can serve as a knowledge basis for the design and development of teacher training programs specialised in adult education, which for the time being are in scarcity.

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Does professional memory influence vocational teachers' perception of changes related to students?²⁸

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Abstract: In the work of vocational teachers, student-related changes have been perceived as the most challenging to have affected the profession. However, vocational teachers have perceived changes in their work differently, holding more or less positive attitudes in response to these changes. Previous studies have emphasised the importance of the development of professional memory (PM), which is related to length of career, experience and age. Handling PM, as one characteristic of vocational teacher professionalism, is the focus of this study looking at how vocational teachers experience changes within the student population through the concept of PM. The analysis is based on a quantitative survey and k-means clustering. In the results, three groups of teachers emerged based on their perceptions of student-related changes: positive, various and negative.

Keywords: professional memory, changes in student population, VET teacher experiences

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1. INTRODUCTION

It has been acknowledged that global changes and reform policies have affected the work and professionalism of vocational teachers across different countries (Cort & Rolls, 2010; Hughes & Attwell, 2010; Kats, van Lakerveld, & Smit, 2010; Misra, 2011; Susimetsä, 2010; Wenström, Uusiautti, & Määttä, 2018). The same tendency has also emerged with Estonian vocational teachers. First, their qualification requirements have been increased. Second, their everyday work roles have become broader. Vocational teachers now need to teach both theory and practical skills and also integrate vocational and general subjects. In addition, other time-consuming tasks, such as administrative tasks, course instructions and preparing students for skills competitions, have become part of their work. Third, vocational teachers have been regarded as being responsible for the quality of the graduates entering the workplace. All these shifts have exerted pressure on them in their work (Sirk, Liivik, & Loogma, 2016).

Despite the various changes, the biggest challenges for vocational teachers are those related to the variety of students, which now includes those without even a general education through to those with higher education, and this has considerably shaped their everyday working lives (van Middelkoop, Ballafkih, & Meerman, 2017; Liivik & Sirk, 2015; Sirk et al. 2016). Therefore, the serious learning difficulties, social and behavioural problems, and lack of motivation in students, as well as the meagre support from their families, have broadened the work roles of vocational teachers and added new roles, such as social worker, supervisor, mentor and/or counsellor (Cort & Rolls, 2010; Hughes & Attwell, 2010; Kats et al. 2010; Sirk et al. 2016; Susimetsä, 2010;

Ümarik & Rekkor, 2013). In addition, changes in the student population increasingly demand new competences (like psychological and social-pedagogical competences) from vocational teachers (Cort, 2011; Kirpal, 2011) and have influenced their professionalism and perseverance. For example, problematic students can decrease the motivation and enthusiasm of vocational teachers, the satisfaction from working as a teacher (Sirk et al. 2016; Wenström et al. 2018) or even the perception of their professional position in society (Sirk et al. 2016).

However, previous studies have shown that vocational teachers have perceived the educational changes, and with them the accompanying demands, differently and hold various attitudes to them. In addition, teachers' personal characteristics (Rekkor, Ümarik, & Loogma, 2013; Tafel-Viia, Loogma, Lassur, & Roosi-põld, 2012; Vähäsantanen & Eteläpelto, 2011; Ümarik & Rekkor, 2013), and individual understanding of professionalism (Hoyle, 2008) may also effect the extent to which they adopt the changes. Nevertheless, previous studies do not describe or deal with how the perception of the negative/problematic changes or trends in the student population are related to the vocational teachers' own professional experiences, socio-demographic background and attitudes to or evaluations of their professionalism in society.

Hargreaves (2005) emphasises the length of the teachers' pedagogical experience (stage of career) and age as most important in responding to the changes – these factors being related to the development of professional memory (PM). Therefore, younger and less experienced teachers generally hold more positive attitudes to the changes, whether educational or otherwise. PM is related to the teachers' memories of their previous profes-

sional practices (Tarpey, 2015), which are associated with emotions (Ben-Peretz, 2002) and nostalgia (Goodson, Moore, & Hargreaves, 2006) and affect professional knowledge and practices (Ben-Peretz, 2002). In addition, PM is associated with the development of professional identity, which also affects how they adapt to new changes (Tarpey, 2016), especially those experienced teachers nearing their retirement age (Tarpey, 2016; Goodson et al. 2006).

In this study, the concept of PM enables us to make-sense of vocational teachers' negative attitudes to changes related to the student population, which previous studies have not explained. Accordingly, the aim of this study is to explain how vocational teachers experience change within the student population through the concept of PM.

The following research questions are therefore posed:

1. How do vocational teachers differ based on their experience of the changed student population?
2. How are the characteristics of PM (length of pedagogical experience and age) related to the vocational teachers' experiences of the changed student population?
3. Which socio-demographic factors (gender, spoken language and level of education) and school factors (amount of students at school, school location, students' groups, teaching field) for vocational teachers are related to their experiences of the changed student population?
4. How might the changes in the student population influence motivation, job satisfaction and perceptions about their profession (like their position in society) among vocational teachers?

2. THEORY AND METHODS

2.1 TEACHERS' PROFESSIONAL MEMORY: THEORETICAL APPROACHES

The concept of PM is ambiguous. From the sociological point of view, PM is associated with memory related to experiences stored in our memory that bring up certain emotions (Ben-Peretz, 2002) and nostalgia (Goodson et al. 2006). Therefore, the concept of PM refers to the emotional memories of teachers from their own professional practice (Tarpey, 2015), which is socially constructed (Ben-Peretz, 2002; Goodson et al. 2006; Tarpey, 2015, 2016).

PM continuously changes because of new experiences. Accordingly, teachers may adopt new understandings, attitudes and tasks on the basis of factors that influence their work. For example, some events in teaching can be more meaningful or crucial and so influence their further professional behaviour. Those events are called “critical incidents” and are usually described in more detailed. Teachers recall events in their working life, and rules and principles that have worked, and based on experience they form or develop new knowledge and understanding. At the same time, learning from experience takes time and happens in interaction with other experiences and this requires openness and maturity (pedagogical experience), so professional wisdom and PM develop mutually (Ben-Peretz, 2002).

PM in teachers reveals shared collective professional customs, attitudes and beliefs and professional development. Memories cannot be isolated, and therefore they always belong to some context, cultural space and period (Tarpey, 2009, 2015). Work-related memories reflect changes in education systems and society

(Ben-Peretz, 2002; Tarpey, 2009) and teachers' experiences and actual understanding of the changes (Goodson, 2003), so they provide explanations about the past (Tarpey, 2015) or transfer useful practices to future generations (Tarpey, 2016).

However, based on Hargreaves (2005), the experience of change and attitudes towards it depend on the age and pedagogical experience of teachers. But other individual characteristics, contexts or environment factors may also have an influence (Goodson, 2003, 74). Hargreaves distinguishes three stages of pedagogical experience that reflect the development of PM – early-career teachers that have pedagogical experience up to 5 years are more flexible, adaptable, accepting and even enthusiastic in their responses to educational and other kinds of change than their older colleagues. Those positive attitudes are explained by their missing PM; they cannot compare the current changes with past experiences and this may hamper their capacity to understand the changes being implemented. Mid-career teachers that have pedagogical experience from 6 to 19 years were more relaxed, confident, and sufficiently experienced and comfortable about their job, but still enthusiastic and positively flexible to respond to change as well as more resilient to the demands of change. Late-career teachers with pedagogical experience of more than 20 years are nearing the end of their career and they have professional experience extending to two decades or more and many changes behind them. Therefore, they have become wise and serene in deciding how to conserve their energy. Older colleagues were portrayed as tired reluctant teachers who were anticipating retirement and tended to resist change and questioned it to be sure that it suited their interests and enthusiasm.

In observing the PM of teachers, we must consider that younger teachers nowadays may not be the same as older teachers were when they were young, because wider social, cultural and political events shape the identity and work attitudes of teachers (Cunningham, 2007; Goodson et al. 2006; Tarpey, 2016). PM can contain nostalgia about the past, and this can affect how a teacher adapts to new changes, especially teachers approaching retirement age (Goodson et al. 2006). Nostalgia, like PM, helps a vocational teacher critically interpret the changes that have taken place and also themselves as vocational teachers in changed work roles (Ümarik & Goodson, 2018). Therefore, nostalgia has both negative and positive meanings in the context of PM.

PM, being related to individual memories, but at the same time socially constructed and creating part of our collective memory, helps us understand the perception or understanding of an object of study – teachers' attitudes, values, practices, and/or experiences in a specific context (Tarpey, 2009, 2015, 2016). It is important to consider that teachers relating or evaluating their work-related memories may do so selectively and forget or ignore some important events (Ben-Peretz, 2002; Gardner, 2003), which can be a limitation. For example, Gardner (2003) has argued that reminiscences of events in an individual's working life, including emotions, rather talk about the teller him/herself and their selectiveness and desire to make his/her working life more meaningful.

Therefore, the concept of PM contains different dimensions and points of emphasis. This study focuses on characteristics of PM (age and pedagogical experience), events, as well as context or environmental factors (changes in education policy and the

student population) that have affected professional experiences, attitudes (e.g. motivation and satisfaction), understandings, and personal and collective experiences/evaluations.

2.2 CHANGES IN THE STUDENT POPULATION

Political changes in vocational education in Estonia that have influenced the student population

State led regulation of vocational education and training (VET) in Estonia started at the end of the 1990s. The general goals for VET development were determined as part of the development plans for the vocational system. Those plans were valid from 2001 to 2013. VET reforms have included complex changes starting from curricular reform through to the reorganisation of the schools network and re-establishing cooperation between enterprises and VET schools (Ümarik, 2015). In Estonian VET, flexibility and professional training have been continually emphasized in addition to its social function and inclusiveness (Haridusministeerium, 2001; Ministry of Education and Research, 2005, 2009). This was to prepare different target groups for participation in civil society and the labour market, and for retaining learning and working opportunities (Loogma, 2013). VET has become open and available to all, including academically less able youth, students who have so far been left outside vocational education and students with special needs (Statistikaamet, 2007; Ümarik & Rekkor, 2013). The numbers of such students have grown in Estonian VET by almost 30% in the last ten years (Haridusilm, 2018).

In order to ensure access to VET, new forms of flexible education and training were introduced by the Vocational Education

Institution Act in 2005, providing vocational training without requiring a basic education and VET based on basic education without acquiring a secondary education. In addition, work-based training was approved alongside existing school-based learning (Statistikaamet, 2007). The number of students in the new types of VET has increased every year. For example, between 2006 and 2008, the number of students in VET with and without the requirement of a basic education have increased by almost 59% (Ministry of Education and Research, 2009), and during the last ten years those in work-based training have increased by 77% (Haridussilm, 2018).

For a many years, VET policy has focused on increasing the number of students by improving the quality and status of VET (Ministry of Education and Research, 2005, 2009). According to education statistics, between 2005 and 2017, 27% of basic education graduates went to VET, 69% to general secondary education and 4% did not continue their education (Haridussilm, 2018). The first Estonian development plan set the ambitious goal that 50% of basic education graduates should go to VET (Haridusministeerium, 2001); by 2020 this goal became more reasonable, aiming to increase the number of students continuing in VET to 35% (Cedefop, 2017) to ensure the demand for skilled professionals in the labour market. While continuing studies in VET is not so popular among young people, interest has grown significantly among adult learners. The share of students older than 25 years has increased by 56% during the years 2007 to 2017, already making up 35% of the VET student population in 2017 (Haridussilm, 2018). The pattern of choosing VET after graduating from higher education is increasingly common, this being used to complement their theoretical

knowledge with practical skills which helps ensure better competitiveness on the labour market or simply to acquire a hobby education (Riigikontroll, 2016).

One of the major concerns in VET has been the year to year increase in the student dropout rate, which was 13% in 2001 (Haridusministeerium, 2001) and by 2016/2017 had grown to 20% (Haridussilm, 2018). To that end, the third Estonian development plan included one important priority of decreasing the dropout rate. The learner-centred approach and the need to work individually with students was also emphasized (Ministry of Education and Research, 2009). Increasing learner-centredness was also emphasized in the Estonian Lifelong Learning Strategy 2020, where one of the strategic activities was to increase the number of people with professional qualifications by providing them equal opportunities to participate in lifelong learning, by creating the conditions for people with less competitive backgrounds to also participate in learning (Ministry of Education and Research, 2014). Similarly, the VET Programme for 2018–2021 set the goal of bringing adults back to VET (Haridus- ja Teadusministeerium, 2018).

It can be seen from the above that Estonian VET policy goals and development trends have supported the continuous diversification of the student population.

Changes vocational teacher have experienced in the student population

International and Estonian studies conducted among vocational teachers reflect similar tendencies in the student population. According to the experiences of vocational teachers, the student

population has become more diverse in terms of background, age, previous knowledge and skills and motivation (Sirk et al. 2016; van Middelkoop et al. 2017; Ümarik & Rekkor, 2013). Therefore, the overall level and motivation of study groups is uneven and varies by field and language of study or academic year (Tamm, 2011).

The main characteristic that distinguishes learners is age, and this leads to many other changes (Cort & Rolls, 2010; Sirk et al. 2016). Most of the problems in the student population relate to those in younger age groups (15–19) and male students (van Middelkoop et al. 2017). For example, vocational teachers have experienced decreased family support for young students in several ways (Espenberg, Beilmann, Rahnu, Reincke, & Thomas, 2012; Liivik & Sirk, 2015; Sirk et al. 2016; van Middelkoop et al. 2017) and for that reason their work includes the need to work more often with the social and personal problems of students (van Middelkoop et al. 2017; Ümarik & Rekkor, 2013). Long-serving Estonian vocational teachers have explained that in society the meaning of ‘family’ and people’s way of life have changed, and in some families the sense of responsibility for raising children has decreased (Sirk et al. 2016; Sirk, Liivik, Ümarik, & Loogma, 2019).

It has been perceived that societal changes have affected young people so they have become indifferent, lazy and generally immature and have difficulty in taking responsibility (Cort & Rolls, 2010; Kats et al. 2010; Sirk et al. 2016; Susimetsä, 2010). Some Estonian vocational teachers have associated this with the transition period (from the Soviet era to re-independence), when the development of work habits at school disappeared (e.g. cleaning the classroom, wiping the board) and options for dis-

ciplining their students also diminished (Sirk et al. 2016; Sirk et al. 2019). After all, experienced vocational teachers have also emphasised that those younger students are poorly motivated toward learning. Long-serving Estonian vocational teachers have associated the lack of motivation in students with them being in the wrong field, which is caused by the abolition of the career counselling system that used to exist in the Soviet era (Sirk et al. 2016). Therefore, unmotivated students demand greater effort from them to make the learning process more interesting. Despite these efforts, the situation has not changed and vocational teachers have felt their own motivation to teach also falling, sometimes making them want to leave the profession (Sirk et al. 2016; Sirk et al. 2019). Moreover, unmotivated students also decrease the enthusiasm of the vocational teachers (Wenström et al. 2018).

In addition, problems in student learning and basic skills have become barriers to learning. For example, they have problems focusing their attention and planning their studies and time independently. Functional reading and maths skills have become considerably weaker (Espenberg et al. 2012; Hughes & Attwell, 2010; Sirk et al. 2016; van Middelkoop et al. 2017; Ümarik & Rekkor, 2013). Consequently, they have to teach content the students should have acquired in basic school. Estonian vocational teachers have related these trends to the policy decision to decrease the repetition of grades in basic school (Sirk et al. 2016; Sirk et al. 2019). Vocational teachers have also estimated that the oral and written self-expression skills in younger students have deteriorated and they avoid direct contact with teachers, preferring social media as their main communication channel (Espenberg et al. 2012; Sirk et al. 2016). This has required extra work

from vocational teachers to develop the communication skills in their students because the teachers feel that their students must be able to communicate with colleagues during their internship (Sirk et al. 2016). However, communication between students and teachers has become more equal and friendly (Hughes & Attwell, 2010; Ümarik & Rekkor, 2013).

The experience of vocational teachers with adult learners is more positive. Adult students of different ages, education levels, backgrounds and experiences make them more motivated, self-directed and demanding learners. They have higher expectations of their vocational teachers in terms of the quality of learning and specialist knowledge and skills (Cort, 2010; Hughes & Attwell, 2010; Sirk et al. 2016). In addition, the variety of adult learners affects their learning speed and so demands vocational teachers to be more flexible and competent in differentiating the learning process (Sirk et al. 2016; Sirk et al. 2019).

Changes in the student population have forced vocational teachers to develop more diverse competences and professional roles (social worker, substitute parent, mentor, tutor, learning facilitator, counsellor, adult educator, etc.) and to rethink, modernise and transform their professionalism (Cort & Rolls, 2010; Hughes & Attwell, 2010; Kats et al. 2010; Sirk et al. 2016; Susimetsä, 2010; Ümarik & Rekkor, 2013). Vocational teachers have acknowledged that they lack the knowledge and skill to didactically take account of all the features of the students (Sirk et al. 2016; Tamm, 2011). On the other hand, they have felt that they do not have enough time to take into account the individuality of each learner, because this would require a different approach, including new methods and additional guidance in the classroom (van Middelkoop et al. 2017). In addition,

Ümarik and Rekkor (2013) noted the explanation proposed by old-school teachers for why teacher-centred teaching methods are used in teaching weak students: due to their lack of learning skills and discipline, other methods cannot be applied. The stories of Estonian vocational teachers about changes in their teaching work often reflect a nostalgia associated with the beginning of their professional career, when the vocational education and teaching field was more popular, students were more motivated and aware of their educational choices (Sirk et al. 2019; Ümarik & Goodson, 2018). Accordingly, long-serving vocational teachers have also emphasized that they used to have more rights and greater respect in their job, but now their status is diminished in society (Sirk et al. 2016).

Previous studies have referred to a variety of experiences of vocational teachers related to the changes in the student body, but generally the experiences have been negative, indicating that the student population in VET has become more problematic. However, at the same time, these studies have not analysed how student-related experiences are associated with the characteristics of the vocational teachers. Therefore, the concept of PM enables us to analyse how vocational teachers, based on their experience, are currently constructing a picture of their students and also their attitude toward the teaching profession.

2.3 METHODS

Sample

This paper is based on the results of a survey (see Creswell, 2012) conducted at the end of 2015 by an Estonian research group that included the author and two other researchers, and which

focused on the work of vocational teachers including the changes in their work. Originally we aimed to include all 37 Estonian VET schools, and in the end agreements were received from 32 school principals (86.5%). We then searched for the email addresses of the vocational teachers from the websites of the participating VET schools. A total of 1,685 electronic questionnaires were sent out in both Estonian and Russian. Completing the questionnaire was voluntary and anonymous. A total of 501 completed questionnaires were received, representing 22% of the potential sample.

Dividing the final sample by gender, 65.5% of the respondents were female and remainder were male; 87% completed the survey in Estonian and remainder in Russian. The pedagogical experience of the respondents ranged from half a year to 48 years, the average was 15 years ($SD=10.97$); 73% of the teachers taught vocational subjects and the remainder, general education subjects. The respondents could be divided by age as follows: 34% were 55 years or older, 31% were 45-54 years, 21% were 35-44 years and 14% less than 34 years. In addition, 1.5% of the respondents had a doctoral degree, 56% a master's degree, 23% a bachelor's degree, 11% a higher professional education and the remainder had a vocational secondary education certificate. The distribution of the respondents was compared with that of the full population of vocational teachers by age, gender and county. The data were then weighted by county because the greatest difference in the distribution could be identified on that basis.

Instrument for the study

The questionnaire was created for studying the work of vocational teachers and changes in their work. The questionnaire included six themes. Several questions were adapted from the Teaching and Learning International Survey (TALIS 2008, 2013) and adjusted for the context of Estonian VET. The section that focused on changes in VET was based on previous qualitative study results conducted in 2014 (see Sirk et al. 2016), and the analysis of educational policy changes.

This study focused on the following sections of the questionnaire: vocational teacher background, meaning of work (e.g. motivating factors) and changes in the work of vocational teachers.

The questionnaire was piloted and the main survey was conducted at the end of 2015. From the section on changes in the work of vocational teachers, this study makes particular use of the data describing the changes in the student population. Vocational teachers were asked to evaluate the changes in the student population during their work time. They had to evaluate 16 variables on a five-point Likert scale as follows: 5 – significantly improved, 4 – somewhat improved, 3 – unchanged, 2 – somewhat worsened, and 1 – significantly worsened (see Table 1).

Table 1. Creating compound variables describing the changes in the student population

Initial variable	Compound variables	M	SD
Family support for students during their studies The economic situation of students Student health	Student wellbeing Cronbach $\alpha = 0.74$	2.80	0.67
Sense of responsibility and duty in the students Student attitudes to learning Student motivation to learn	Students' attitudes toward learning Cronbach $\alpha = 0.93$	2.69	0.93
Student learning skills Student focus and attention on learning	Students' general learning skills Cronbach $\alpha = 0.87$	2.53	0.92
Student reading habits Students' ability to understand what they have read Students' skills in their mother tongue, oral and written communication skills Student competencies in maths	Students' basic knowledge and skills Cronbach $\alpha = 0.88$	2.31	0.78

Relations between students	Student tolerance and relationships with peers	3.20	0.79
Students' cultural awareness and tolerance in relation to peers	Cronbach $\alpha = 0.83$		
Students' sense of initiative and entrepreneurship	Student activity and entrepreneurship	3.10	0.76
Student social and civic activity	Cronbach $\alpha = 0.73$		

Analysis in the study

The block of questions focusing on the changes in the student population included 16 different variables. Therefore, *the first step in the analysis* was to create compound variables because many of the initial variables measured the same phenomenon. Based on the correlation analysis and the appropriateness of the initial variables, six compound variables were created and named (see Table 1). The statistical significance of the compound variables were checked using Cronbach's Alpha. *The next* step was to implement K-means clustering to distinguish the vocational teachers' perception or experience of the student population. The resulting clusters according to the experiences of the vocational teachers were compared with the variables in the model (see Table 2) using oneway ANOVA and Bonferroni multiple comparison tests. *Subsequently*, using cross-tables, the resulting clusters of vocational teachers were compared to the characteristics of PM, other demographics and contextual factors of the schools. The statistical significance of those results were verified using the Chi-Square test (Table 3). *The last step in the analy-*

sis involved comparing the means of the clusters on the basis of the vocational teachers' motivation, job satisfaction and perception of their profession in society (see Table 4). The statistical significance in this case was verified using variance analysis (ANOVA) and the Bonferroni test was used for multiple comparisons. Analysing the data was conducted using the IBM software SPSS 25.0.

3. RESULTS

The cluster analysis provided a three-cluster model, which made it possible to distinguish teachers' experiences related to changes in the student population. According to the model, all clusters were statistically significantly differentiated in each of the six variables (see Table 2). In addition, the three clusters of vocational teachers differed statistically from each other in terms of certain characteristics of PM (pedagogical experience and age), the number of students at the school, and the study group being taught (see Table 3).

Table 2. Clusters of vocational teachers according to changes in the student population

	I Positive experiences n = 122 (24%)	II Various experiences n = 228 (46%)	III Negative experiences n = 151 (30%)	F	p
Variables of students related changes	M/SD				
Student wellbeing	M SD 3.22 ^(I and III) 0.67	2.85 ^(I and III) 0.56	2.37 ^(I and II) 0.55	72.79	0.00
Students' attitudes toward learning	M SD 3.80 ^(I and III) 0.52	2.72 ^(I and III) 0.56	1.74 ^(I and II) 0.55	475.25	0.00
Students' general learning skills	M SD 3.67 ^(I and III) 0.55	2.53 ^(I and III) 0.54	1.62 ^(I and II) 0.49	511.06	0.00
Students' basic knowledge and skills	M SD 3.20 ^(I and III) 0.64	2.33 ^(I and III) 0.47	1.55 ^(I and II) 0.42	365.69	0.00
Student tolerance and relationships with peers	M SD 3.89 ^(I and III) 0.62	3.25 ^(I and III) 0.53	2.57 ^(I and II) 0.73	153.43	0.00
Student activity and entrepreneurship	M SD 3.76 ^(I and III) 0.50	3.22 ^(I and III) 0.47	2.33 ^(I and II) 0.65	253.09	0.00

Note: The means of the clusters have marked how clusters differ at a statistical significance level of each variable ($p < 0.05$).

The first cluster of vocational teachers (24%) perceived/experienced rather positive changes, and mainly in terms of student levels of tolerance, relationships with peers, attitudes toward learning but also student activity and entrepreneurship (see Table 2). This contains more young teachers with less pedagogical experience. They also teach in smaller schools with fewer students and less student groups on the basis of basic education (see Table 3).

The second cluster includes vocational teachers (46%) whose experiences of the student population are more varied and less positive compared to the first cluster. They perceived that students' basic knowledge and skills as well as general learning skills have worsened. But they had not experienced any change in students levels of tolerance or their activity and entrepreneurship (see Table 2). This cluster mostly consists of vocational teachers who are older, have more pedagogical experience and teach in VET schools of different sizes with student groups at different levels (see Table 3).

Table 3. Comparing vocational teacher groups based on the characteristics of professional memory and school factors

Characteristics of professional memory and school factors		I n = 24%	II n = 46%	III n = 30%	Total 100%	P
Pedagogical experience df = 4	Up to 5 years	39%	45%	16%	100%	0.00
	6–19 years	21%	43%	36%	100%	
	20 or more years	19%	51%	30%	100%	
Age of VET teachers df = 6	Up to 34–years	40%	33%	26%	100%	0.02
	35–44 years	26%	40%	34%	100%	
	45–54 years	20%	49%	31%	100%	
	55 years or older	20%	51%	29%	100%	
	Up to 100	57%	43%	0%	100%	
Number of students at school (School size) df = 10	101–300	34%	50%	16%	100%	0.00
	301–500	30%	42%	28%	100%	
	501–700	31%	37%	32%	100%	
	701–1000	25%	50%	25%	100%	
	More than 1000	14%	44%	42%	100%	
Teaching student groups on the basis of a basic education (adolescents) df = 6	only such students	26%	34%	40%	100%	0.00
	More than half were such students	18%	52%	30%	100%	
	Less than half were such students	29%	38%	33%	100%	
	Not teaching such students	39%	49%	12%	100%	

The third cluster of vocational teachers (30%) have mostly evaluated the changes in the student population negatively. During their time in the profession they have perceived that student wellbeing, attitudes toward learning, general learning skills, basic knowledge and skills as well as activity and entrepreneurship have worsened (see Table 2). Vocational teachers in this cluster tend to have 6 to 19 years of pedagogical experience and be 35 to 54 years of age. In addition, they work in larger VET school with greater numbers of students and teach more student groups on the basis of basic education (see Table 3).

When we compare the clusters in terms of motivation, job satisfaction and perception of their profession in society, we can see that the experience of changes in the student population have influenced these factors (see Table 4).

Table 4. Motivation, job satisfaction and the perception of their profession in society among vocational teachers based on their experience of the student population

Variable	M/SD	I Positive n = 24%	II Various n = 46%	III Negative n = 30%	F	p
Student progress motivates me to work as a vocational teacher	M	3.62 ^(I and III)	3.39 ^(I)	3.31 ^(I)	9.09	0.00
	SD	0.51	0.59	0.72		
Student curiosity in learning motivates me to work as a vocational teacher	M	3.53 ^(I and III)	3.05 ^(I)	2.94 ^(I)	24.15	0.00
	SD	0.59	0.73	0.82		
Position of vocational teacher in society motivates me to work as a vocational teacher	M	2.47 ^(I and III)	2.15 ^(I)	1.98 ^(I)	13.67	0.00
	SD	0.88	0.77	0.71		
Generally I am satisfied with my work	M	3.23 ^(III)	3.13	3.06 ^(I)	2.99	0.05
	SD	0.58	0.51	0.65		
I am satisfied with the results of my work in this vocational institution	M	3.21 ^(I and III)	3.03 ^(I)	3.05 ^(I)	5.49	0.00
	SD	0.53	0.48	0.53		
I think that the profession of vocational teacher is valued in society	M	2.48 ^(I and III)	2.10 ^(I and III)	1.90 ^(I and II)	19.31	0.00
	SD	0.83	0.76	0.74		

Note: The variables were measured on a four-point scale ranging from "strongly disagree" to "strongly agree". The means of the clusters indicate how clusters differ at a statistical significance level of $p < 0.05$.

The analysis revealed that vocational teachers in the first cluster, mostly with positive experiences of the student population, also feel that their students' progress and curiosity about learning motivate them to work more as vocational teacher than other clusters of vocational teachers. In addition, they perceive that their profession as a vocational teacher is valued in society more than the other clusters and this also motivates them to work as a vocational teacher. Based on these motivating variables, the first cluster of vocational teachers differs significantly from the other clusters.

Observing the clusters of vocational teachers based on job satisfaction and perception of the profession as valued in society, we can conclude that the more vocational teachers experience positive changes in the student population, the more satisfied they are with their job generally as well as with the results and valuation of their profession in society (see Tabel 4).

4. DISCUSSIONS AND CONCLUSIONS

The aim of this study was to explain how vocational teachers experience changes within the student population through the concept of PM. Based on the results, the vocational teachers' experiences of the student population are diverse. Three clusters of vocational teachers who have either positive, variable or negative experiences of the student population are statistically different. Comparing these groups with characteristics of PM (age and length of pedagogical experience) revealed that vocational teachers with less pedagogical experience and that were younger tend to have more positive experiences related to changes in the student population than others. Younger vocational teachers do

not have extensive previous experience with which they could compare the existing situation in the student population, and this may hamper their capacity to understand the changes. This matches with the point made by Hargreaves (2005) that the career stage of teachers relate to the development of PM and their readiness to adapt to change. Although Hargreaves' stages of pedagogical experience show that teachers with 20 years of teaching experience and more have rather negative attitudes to change, the results of this study did not confirm this. The perception that long-serving experienced vocational teachers have of changes in the student population varied rather than being consistently negative. And those negative experiences of the student population exist rather among vocational teachers in mid-career.

In addition, comparing the changes in the student population as perceived by vocational teachers with other demographic and school-based factors, it emerged that the size of the VET school and the nature of the study groups also influenced the experiences of the vocational teachers. The vocational teachers that perceived changes in the student population most negatively also tended to work in larger schools and taught younger students (those entering VET school after the 9th grade). This result confirms that the main problems relate to teaching adolescents, which has also emerged in previous studies (Cort & Rolls, 2010; Espenberg et al. 2012; Hughes & Attwell, 2010; Kats et al. 2010; Sirk et al. 2016; Susimetsä, 2010; van Middelkoop et al. 2017; Ümarik & Rekkor, 2013). However, more positive experiences related to the teaching of adult learners emerged in relation to the PM of vocational teachers, which is also in line with previous studies (Cort, 2010; Hughes & Attwell, 2010).

Based on the stages of pedagogical career, we can say that five years is an important turning point in the development of PM, but it is also influenced by other important factors like the social context in which these professional experiences occur (Ben-Peretz, 2002; Goodson et al. 2006; Tarpey, 2009, 2015, 2016). In the case of Estonian vocational teachers, these other factors include school size and study groups being taught. Therefore, based on our results, we can say that school context also shapes the PM of teachers in addition to age and the stages of pedagogical experience. Furthermore, based on previous Estonian studies highlighting the experiences of long-serving vocational teachers (Sirk et al. 2016; Sirk et al. 2019), it is possible to argue that school context is also shaped by educational policy, and societal and labour market changes. However, vocational teachers have not associated weaker student basic knowledge and skills with VET policy priorities, which do emphasize the inclusion of vulnerable target groups (e.g. academically less able youth) by providing them with opportunities to participate in society and the labour market (Ministry of Education and Research, 2009; Loogma, 2013; Sirk et al. 2019).

Moreover, based on the results of the study, changes in the student population have also influenced motivation and job satisfaction among vocational teachers. Vocational teachers with positive experiences of the changes in the student population have also experienced more positive attitudes in their students toward learning (including better progress and curiosity for learning), which has increased their motivation to work as vocational teachers as well as their job satisfaction. Therefore, vocational teachers teaching more adult learners have higher motivation and also job satisfaction than those who teach younger

students. Vocational teachers teaching adult learners may experience more student progress, which increases their satisfaction on the basis of achieving results in their work. Previous studies have also shown that students lack of motivation can decrease the motivation and enthusiasm of their teachers (Sirk et al. 2016; Wenström et al. 2018) and may cause them to leave the profession (Sirk et al. 2016).

Furthermore, experiences of the student population affect the attitudes of vocational teachers about the position of their profession in society. Accordingly, vocational teachers with more positive experiences of the student population also perceive their profession to be valued more highly in society, which then enhances their motivation to work in the teaching profession. Previous studies have revealed that vocational teachers that are highly involved in collaborative activities also evaluated their status in society more highly, but this difference was not statistically significant compared to other groups of vocational teachers (Sirk, Ümarik, Loogma, & Niglas, 2017). The results in this study, however, are significant. Consequently, vocational teachers' experience of the student population plays an important role in shaping their attitudes, opinions or understanding of the status of the teaching profession in society.

In summary, the role of the PM of vocational teachers in response to changes in the student population is complex, and depends on societal and educational policy changes as well as their experiences, attitudes and aspects of their work. Teachers who are at an early stage in their career have more positive attitudes toward the student population because they do not have memories of "students from the old days" that could affect their experiences, motivation and attitudes toward their professional

status now. Experienced vocational teachers have both negative and positive experiences related to students. Although the amount of adult learners in VET has increased and vocational teachers have more positive experiences with them, teachers tend to emphasize negative experiences with adolescents more (Sirk et al. 2019). According to the concept of PM, it may be concluded that negative changes are seen more as challenges for vocational teachers that are hard to cope with, and therefore decrease their motivation. Accordingly, on the one hand, PM hinders their ability to cope with changes because the changes are compared with memories of previous experiences. On the other hand, PM enables them to reflect upon the changes in the work and education (Ben-Peretz, 2002; Tarpey, 2009). Therefore, it is important that we understand the impact of memories on vocational teachers because these might prevent them from coping with change and decrease their level of motivation. Accordingly, more attention should be paid to support the professional development of long-serving vocational teachers to help them identify positive aspects in the student population and changes to the education system in general because this could help them stay motivated as teachers.

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Vocational teacher students' perceptions of 21st century skills in a vocational education programme in Sweden

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Abstract: The importance of 21st century skills has been recognised internationally. The purpose of the study was to explore vocational teacher students' perceptions of the extent to which they had learned 21st century skills in a VET teacher programme and then applied these skills in their teaching practice. A survey of the VET teacher students was conducted and complemented with interviews. There were two main findings: (1) participants were less positive about having learned both aspects of the skill 'global connections' – learning from the programme and application to teaching practice – than they were about having learned the other skills; (2) the teacher students who had teaching experience were more positive than participants who had no teaching experience in relation to applying 21st century skills in teaching practice. The implications for educational research, VET teacher education and practice are discussed.

Keywords: Vocational Teacher Education, 21st Century Skills, Vocational Teacher Student

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1. INTRODUCTION

Vocational education and training (VET), as with all education, is about the future. Vocational teacher education aims to equip future teachers with skills they need for challenges in the workplace and in society. Furthermore, vocational teacher education covers a range of vocational areas. Therefore, a question about the kinds of skills needed for the future is of vital importance.

To tackle this question, it is necessary to explore what future skills are highlighted by different agencies. For example, The European Union, EU (2018) and the Organisation for Economic Co-operation and Development, OECD (2016) have clarified their skills demands. European Union presents key competences such as literacy, multilingualism, mathematical, and digital competences as well as personal, social, and learning to learn competences, to name a few (EU, 2018). OECD (2016) defined global competence as the multidimensional capacity for young people to be able to live and work in the 21st century. In their brief note, the European Centre for the Development of Vocational Training, CEDEFOP (2019) addressed the common skills that employers want from their future employees: an ability to adapt to changes, and teamwork skills. The emphasis is either on what can be called basic skills such as literacy and mathematics or, what in VET are usually called ‘core skills’ or ‘soft skills’, nowadays also, transversal or 21st century skills, referring to skills and competences other than professional and vocational. In this study, the focus is on how future vocational teachers in Sweden perceive their learning of and the application in their teaching of eight 21st century skills, such as critical thinking and collaboration skills.

Previous studies of vocational teachers' competences have focused, for example, on professional skills which involve teachers' knowledge of working life (Ashgari, 2018), pedagogical and didactical competences (Tütlys, Gedvilienė, Saniter, Klein, Tacconi, & Perrini, 2019), subject knowledge and pedagogical skills, (Raudasoja & Kaitala, 2019), digital skills (*Harju, Pehkonen, Niemi, & Niu, 2020*), how vocational teachers update their vocation-related competences (Andersson & Köpsén, 2018), and professional and continuous development of VET teachers (Bound, 2011; Andersson, Hellgren, & Köpsén, 2018). Henning Loeb and Gustavsson (2018) indicated, in a special issue focusing on vocational teacher education, that more research on vocational teacher education was needed. Thereafter, Tütlys et al. (2019) specifically pointed out that VET teachers' skills, a highly important factor concerning the quality and accessibility of VET, needed more attention in research. We could not agree more. Furthermore, how vocational teacher students perceive 21st century skills learned in VET teacher programmes and the way they perceive how they can apply these skills in their teaching practice to support their students' learning has not been previously addressed.

The above-mentioned literature uses both terms, 'skill' and 'competence'. In the European literature, the term competence predominates, whereas outside Europe the term skill relates to knowledge and abilities that are largely transferrable to different aspects of human life and not only to a specific subject or to a specific occupation. As Care (2018, p. 3) indicated, 21st century skills refer to those skills people need to function effectively in society.

The eight 21st century skills we looked at in this study are based on those identified in survey studies by Ravitz (2014),

Schmidt, Baran, Thompson, Mishra, Koehler, & Shin, (2009), Sahin (2011) and Harju et al. (2020). Our survey focused on critical thinking, collaboration, communication, creativity and innovation, self-management, global connections, local connections and using technology as a tool for learning. Students who think critically are able to analyse complex problems, investigate questions for which there are no clear-cut answers and evaluate different points of view or sources of information. Students with collaboration skills are able to work together effectively and respectfully in teams to accomplish a common goal, while those with communication skills are able to organise their thoughts, data and findings, and share these effectively. Creativity and innovation are about generating and refining solutions to complex problems and then combining what one has learned in new and original ways. Students who self-regulate effectively are able to take responsibility for their learning, they identify appropriate topics to pursue, review their own work and respond to feedback. Students who have acquired global connection skills understand global issues and are aware of the range of geography, culture, language, history and literature from other countries. Those who master local connections can relate what they learn to local contexts and community and can make local connections and identify topics and issues that are relevant to local situation. Students who use technology as a tool for learning are able to manage their learning and produce products using information and communication technologies.

VET teacher education aims to provide teacher students with the knowledge and skills they need in their future professions as vocational teachers, so it is worth studying how they perceive their learning of 21st century skills. The aim of this explorative,

small scale study is to explore vocational teacher students' perceptions of the extent to which they learned 21st century skills during their VET teacher education programme and the extent to which they were able to apply these skills in their teaching practice to support their students' learning of these skills. In addition to a survey, we also conducted complementary interviews.

The following two sets of research questions guided this study:

1. What are the perceptions of the vocational teacher students concerning the extent to which they learned 21st century skills during the programme and then to which they were able to apply these skills thereafter in their teaching? Are there differences in the extent to which the respondents perceive to have learned versus the extent to which they apply these skills in their teaching?
2. Do the participants' perceptions of the 21st century skills learned during the programme and the extent to which they apply these in their teaching vary with teaching experience?

2. PREVIOUS STUDIES ON 21ST CENTURY SKILLS IN THE AREA OF VOCATIONAL EDUCATION AND TEACHER EDUCATION

The literature review quickly revealed that studies often focused on some of the skills such as collaboration skills and the use of information and communication technology in education. There were also no previous studies that focused on the perceptions of 21st century skills of VET teachers or VET teacher students (except for a recent publication by Harju et al. 2020).

This may be because the studies had used different concepts, such as competence (e.g., Köpsén, 2014; Mahlamäki-Kultanen, Laonen, & Muttonen, 2018) or transversatile skills (e.g., Isacson, Salonen, & Guillard, 2016), not that the topics as such were not relevant or important to VET teachers' work.

Life and work today require individuals with far more than simple thinking skills and content knowledge (von Beek, de Jong, Minnaert, & Wubbels, 2014). The development of essential skills such as initiative, critical thinking, the use of ICT and self-regulation are key for navigating complex life and work environments (Partnership for 21st Century Skills, 2019). Education and teachers play an important role in helping students to develop these skills (Hattie, 2009; Kuo, 2010). As a key to successful learning in school and beyond, self-regulation has been shown to be important (Pintrich, 2002; Zimmerman, 2002; Kuo, 2010), while the use of ICT in learning, work and life is unavoidable (Chai, Tan, Deng, & Koh, 2017; Göksün & Kurt, 2017; Ramadan, Chen, & Hudson, 2018). How teacher students perceived their mastering of these skills in their teacher training programme and whether they felt competent applying the skills in their teaching was therefore of central interest in this study.

Sulaiman (2012) argued that critical thinking is essential in technical and vocational education development and educational settings to improve workers' career development as well as profitability in the workplace. Tsui (1999) predicted that teaching of critical thinking to be one of biggest challenges for 21st century education. Critical thinking makes it possible for people to analyse and investigate ideas about a subject and then use this as the basis for decision-making (Paul & Elder, 2008). Miliron and De Los Santos (2004) suggested that technical and voca-

tional education programmes should include the development of critical thinking skills.

Collaboration is important for learning and working. According to Lee, Huh and Reigeluth (2015) current and future working life requires the kind of collaboration where members of work communities work together, act effectively across different networks and make decisions in teams. Vocational education and training programmes need to prepare students to be members of different workplaces and use technologies to solve complex problems. The students also have to learn how to operate in changing and complex environments. Schwendmann, De Wever, Härmäläinen and Cattaneo (2018) conducted a systematic review of 26 published studies that focused on computer-supported collaborative learning. Research on computer-supported collaborative learning in relation to vocational education was under-represented, but the review identified technologies that offer new types of learning possibilities for vocational education such as collaborative writing-to-learn, simulations and game-like solutions.

The results of a Finnish study showed that vocational students could develop their collaboration skills during workplace learning periods (Virtanen, Tynjälä, & Collin, 2009). The results presented in six aggregate scales described students' learning outcomes during their workplace learning period and one of them was collaboration skills (the others were, oral communication skills, interactions and teamwork). The students reported having learned these skills from workplace trainers, other employees, superiors, and other workplace learners.

Griffiths (2014) problematized the use of 'creativity and innovation' in EU policies because the terms are ambiguous, especially

in relation to the purposes of education, claiming that it is more useful to talk about creativity than innovation in relation to teacher education. Griffiths (2014) referred to Craft (2005; 2012) who pointed out that the kind of creativity that is relevant for education is an everyday creativity where the ideas are new to the individuals and their immediate context. Furthermore, Griffiths (2014) argued that creativity plays a crucial role in career-long teacher education. Ting (2013) explored how secondary school art teacher students developed their perceptions and practice of creative pedagogy through a teacher training course. Isabejkov and Sadyrova (2017) described how an innovative pedagogical technology helped teacher students develop creative abilities. Loveless, Burton and Turvey (2006) used ICT specialists to promote creativity in the making of digital videos, while the teacher students also reflected the concept of creativity in relation to their professional development. In their study of an entrepreneurial course in teacher education, Ehrlin, Insulander and Sandberg (2016), found that the notion of creativity was closely connected to an entrepreneurial approach in students' definitions. However, the study stated that it may be difficult for teachers to find a balance between structure and frames, something the teacher students also found important, along with the free and innovative creative approach.

Teachers' multicultural and intercultural competences have been in focus frequently over the years due to demographic changes in student populations. (e.g., Banks, 2002; Deardorff, 2009; Mayorka, Furkerson, Cook, & Wardle, 2012; Teräs & Lasonen, 2013; Lehman 2017; Dervin, Moloney, & Simpson, 2020). What seems to be common to these studies is that participating teachers feel a lack of competence in the area. For exam-

ple, Lehman (2017) reviewed literature on multicultural competence and found that participating teachers perceived a need for additional multicultural competence, including increased awareness, and knowledge and skills in working with diverse students. Dervin (2017) pointed out that teacher students had had several intercultural encounters before they entered the study programme. The teacher students referred to the awareness, attitudes, knowledge, sensitivity, responsiveness and skills needed when encountering new cultural environments and meeting people with diverse backgrounds. In today's world, cosmopolitanism can also shed light on the interconnected world, and education needs to be inclusive and critical in a complex and globally interconnected society (e.g., Rönström & Roth, 2019).

School and community involvement and connections to local communities are important topics in education. For example, Coles-Ritchie, Eggington and Valdez (2019) pointed out that a campus-community partnership was beneficial because it was built on trust, mutual respect, reciprocity, and the use of shared language among key stakeholders. Typically, in vocational education and training, connections to local communities mean internship programmes and cooperation with working life. Pylväs and Nokelainen (2017) studied WorldSkills competition achievers, their co-workers and employers in Finland. Their findings suggested that in addition to vocation-specific knowledge and skills, problem-solving, creativity, social skills and self-regulatory skills were also acknowledged as the most significant elements of vocational expertise. In a Danish study, Duch and Andreasen (2015) found that VET teacher students also needed to recontextualise theoretical knowledge into practices and address social problems in a set of diverse students. Isacson,

Amhag and Stigmar (2018) compared vocational teacher education programmes in four Nordic countries: Denmark, Finland, Norway and Sweden. The authors pointed out that there were both similarities and differences; for example, Denmark, Norway and Sweden have adopted an academic orientation in their vocational teacher programmes whereas Finland has a competence-based orientation. Common challenges were, for example, how to develop vocational teacher education to enhance employability, continuous knowledge development and active citizenship. The authors named emotional, transversal, and diversity accommodation skills as important future skills, and emphasised the importance of supporting lifelong learning and professional growth in VET teacher programmes.

This review of the research suggests several reasons why it is important to develop 21st century skills in vocational education and vocational work. In a more complex labour market (including the teaching profession), competences like critical thinking, communication and collaboration have become more central. Self-regulation is important in the workplace, in higher education and in distance learning, a technology-rich and nowadays common education methodology.

The digitalisation of the workplace, indeed the entire world, requires competent digital users. ICT is also an important tool for connecting to the globalised world, another reason for developing 21st century skills. Globalisation demands not only intercultural and cooperation skills but also creativity and innovation as elements of the entrepreneurial skills required to compete in a world-wide, competitive labour market. Creativity and innovation are also central in educational settings, where creative and motivational teaching can contribute to a knowledge

society. In an educational context, vocational teachers' intercultural competence has become increasingly important because of people's mobility. And local connections are key if VET is to enhance employability.

3. VOCATIONAL TEACHER EDUCATION IN SWEDEN AND THE RESEARCH CONTEXT

In Sweden, many vocational teachers in upper secondary school work as teachers without a teacher degree, which means there is a great demand for qualified vocational teachers (Faraz, 2019). Since 2011, vocational teacher education has been defined as those educational studies comprising 90 ECTS (European Credit Transfer System) (Department of Education, 2020) and which take one and a half years full-time to complete. Both work experience and vocational education are important in the validation process. Consequently, the VET programme is composed of heterogeneous student groups, including vocational students who are entering higher education for the first time, like hairdressers or electricians, while others, such as nurses and engineers, have years of higher education behind them. The teacher students can choose full-time or part-time studies, and many students work during their studies either as vocational teachers or in their vocation. A significant proportion of the education (30 ECTS) consists in practical training at schools with vocational teachers as mentors. Content of the study programme includes learning theories, social relations, assessment, education history, students with special needs, didactic knowledge, rhetoric and law (Department of Education, 2020). Some vocational teacher students are more familiar than others with the

concept of 21st century skills, depending on their previous work and studies. One question that arises is whether, and if yes, how 21st century skills are highlighted in the prescribed learning outcomes of vocational teacher education programme courses.

The most frequently referred to skill reflected (if sometimes indirectly) in the prescribed learning outcomes is critical thinking. In many theoretical university-based courses, verbs like 'analyse', 'critically review', 'problematize', 'discuss', 'compare' and 'reflect' are used. Although these verbs are most common in the theoretical courses, the prescribed learning outcomes of the school-based internship courses use terms like 'reflect' and 'analyse' as well. It can also be argued that these verbs encompass the skill of creativity. Although the notions of 'scientific' and 'creative' can be perceived as opposites, one can argue that the research process always includes aspects of creativity. However, this aspect is not necessarily visible to the vocational teacher students. Creativity can also be considered a part of process-oriented prescribed learning outcomes, like 'plan, implement and evaluate' and 'evaluate and translate into action' (Department of Education, 2020).

Communication and collaboration skills are more visible in the verbs employed by the writers of prescribed learning outcomes for the internship courses, e.g., 'communicate clearly, both orally and in writing', 'respond to students' and 'adapt to students'. In the internship courses, the prescribed learning outcomes fluctuate between requiring that the teacher student demonstrate independence and requiring them to demonstrate cooperation with colleagues. In the theoretical courses, communication is especially emphasised in relation to assessment when the teacher students are asked to 'describe the role and

importance of communication in the assessment process'. Naturally, communication is also emphasised in the rhetoric course. Collaboration is not articulated in the prescribed learning outcomes of the theoretical courses in an explicit way, but the balance between independence and cooperation is also visible in the way the vocational teacher education programme is organised, with many group discussions and assignments (both digital and in seminars), as well as individual work, such as reading literature and writing individual exams. Here, the skill of self-regulation can be considered central to managing vocational teacher education, which consists of blended learning and distance studies. The capacity to plan and conduct one's own studies and to display one's knowledge and competencies in written exams are fundamental to higher education study. However, the skills of self-regulation is not explicitly articulated in prescribed learning outcomes except in internship courses where independence is mentioned several times (Department of Education, 2020).

The three 21st century skills that remain, 'making local connections', 'making global connections' and 'using technology as a tool for learning' are different to the skills mentioned above. They are more concrete and are not integrated to the same extent in the individual person. Digital competence is mentioned in three learning outcomes, one in the theoretical section of the programme and two in the internship courses, where the latter includes descriptions and evaluations of digital activities in the classroom. Participation in vocational teacher education demands competence in using digital platforms and being a part of a digital environment. Making local connections is mentioned in the prescribed learning outcomes in connection to internship course. Making global connections is indicated

through ‘global world inside the classrooms’. There are many migrants from countries outside of Europe in adult vocational education in Sweden, which is reflected in some prescribed learning outcomes, some programmes emphasise language development methods in teaching, and the use of ethnicity, socio-economic factors and gender as analytical tools’. Although internship can be seen as a local connection in itself, to sum up, the development of the skill, ‘making local and global connections’ is almost absent in the prescribed learning outcomes of the vocational teacher education programme (Department of Education, 2020).

4. MATERIALS AND METHODS

A mixed methods approach was applied in this study, using an e-survey (the quantitative element) with a follow-up qualitative semi-structured interview with a few of the vocational teacher students. Data were collected between November 2018 and June 2019.

4.1 THE PARTICIPANTS

The participants were vocational teacher students in the 2nd or 3rd term of their studies. The link to the e-questionnaire was sent to them via a learning platform, with information about the study as well as information about voluntary participation and confidentiality. The sampling was purposeful (Bryman, 2018). It took about 30 minutes to answer the questionnaire. The response rate was 25%. We realise that the findings of the study cannot be generalised to make claims about other vocational teacher students’

perceptions of 21st century skills due to the limited response rate, but they provide a direction for our future studies on 21st century skills acquisition and perceptions of VET teachers, teacher students and teacher educators.

Fifty-three participants (40 females and 13 males) answered the e-questionnaire. The participants came from different parts of Sweden, and were eligible to teach in the following vocational programmes: electricity and energy, vehicle and transportation, business and administration, natural resource use, social and health care, child and recreation, hotel and tourism, restaurant management and food. The diversity of the participants' backgrounds is a strong indicator of vocational teachers' heterogeneity.

4.2 THE SURVEY INSTRUMENT

The instrument was a Likert-scale questionnaire (74 items), scored 1 – 5 (from strongly disagree to strongly agree), and was developed by the research group at the University of Helsinki (led by Professor Hannele Niemi; see Harju et al. 2020; Niu, Niemi, Harju, & Pehkonen, forthcoming). They developed the instrument from existing instruments see Ravitz (2014), Schmidt et al. (2009) and Sahin (2011). The questionnaire had two parts dealing with the eight skills of the 21st century framework: (A) learned from the teacher education programme, and (B) applied in teaching practice (see Appendix 1). The research group translated the instrument from English and Finnish to Swedish and invited six Swedish-speaking persons (five men and one woman between the ages of 26 and 45) to ensure readability – that the instrument was accessible to Swedes and appropriate to their context. Clarifications were made accordingly. The

reliability (Cronbach's Alpha) of the questionnaire was 0,965. The reliabilities for each skill ranged between 0.790 and 0.878 (achieved to a reliability level of 0.7), and the abbreviation for each skill is shown below.

- critical thinking (CT) = 0,823
- collaboration (CO) = 0,790
- communication (COM) = 0,809
- creativity & innovation (CR) = 0,801
- self-regulation (SR) = 0,854
- making global connections (GB) = 0,865
- making local connections (LO) = 0,869
- using technology as a tool for learning (TEK) = 0,878

To analyse the questionnaire responses, we used descriptive statistics (research questions 1 and 2) as well as one-way ANOVA (research question 2) in SPSS (version 26).

At the end of the questionnaire, the respondents were asked whether they were interested in participating in a follow-up interview. Based on the answers we received, nine students who showed their interest were contacted by the researchers. Some of the respondents did not answer the request sent by email or were later not interested, so only three interviews were conducted. Two of the respondents had a vocational background in the social and health care sector (with no previous teacher experience) and one in the food sector (with three years of work experience as a teacher). The interviews lasted between 33 and 55 minutes and took place at the department face-to-face. The interviews were transcribed and shared among the researchers. The aim was to gain a better understanding of how teacher stu-

dents reasoned about 21st century skills, e.g., how they understood the meaning of the concepts, how teacher education had supported their command of the skills, which skills they perceived as most important and how they managed to teach the skills to their students. In the interviews, we identified topics that the teacher students pointed out as important in relation to the 21st century skills. The interview findings are presented as a complement to the survey results.

5. VOCATIONAL STUDENT TEACHERS' PERCEPTIONS OF 21ST CENTURY SKILLS

The first research question focused on the vocational teacher students' perceptions of the 21st century skills, and differences in the extent to which they perceived to have learned these skills during their studies versus the extent to which they apply these skills in their teaching to support their students' learning of these skills

From the survey results, it was found that the participants' perceptions of all eight skills were relatively positive, with average scores from 2.59 (SD=1.61) to 3.95 (SD=0.52) out of 5 (Figure 1). They were less positive about global connections than the other seven skills, both in terms of what they learned from the programme (Mean=2.99, SD=0.97) and in terms of the extent to which they apply this skill in their teaching (Mean=2.59, SD=1.61). The teacher students were more positive about the extent to which they learned skills from the programme than in their ability to apply the skills in their own teaching. However, there was a significant difference ($p < 0.05$) in the extent to which they felt they had learned the skill of self-regulated learn-

ing (SRa and SRb in Figure 1) and the extent to which they felt they were able to apply this skill to their teaching.

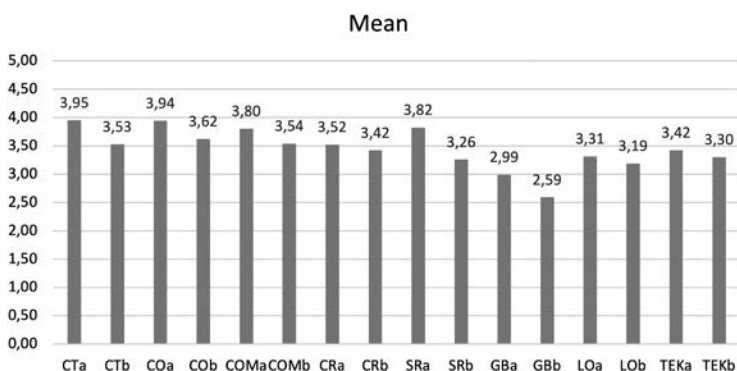


Figure 1: Respondents' perceptions of the 21st century skills learned from the programme (a) and the 21st century skills applied in their teaching (b)

In the interviews, the teacher students confirmed that all skills were important, however, three skills were highlighted as the most important: critical thinking, communication and something that the students described as 'good connections and relationships to students'. 'If you don 't have a good relationship with the students, they will not listen' (TS₂). Another student added:

I think, critical thinking, and then, of course, communication skills. All other [skills] I think one can always learn some way, but those are the most important, it is good to learn them well. Critical thinking, and also to have good connections is very good in today's society, but also in education. And then to have good communication skills. (TS₃)

Critical thinking is needed at a societal level as well as for searching and browsing the internet, as teacher student 2 says:

Critical thinking is quite important. Learning to review all the information you read. ... Anyone can publish a website, and anyone can provide information on things that have no reliability. Many pupils use pages from websites where the information is not reliable. (TS₂)

Communication is required for collaboration in the profession, with colleagues, parents/guardians and students. 'Cooperation and communication are also important. In the restaurant programme I attended, it was obvious that communication is critical' (T₂).

Communication skills are developed during a university education, in group work, in courses like, for example, 'performances and rhetoric'. Critical thinking is developed by critically reviewing information and articles, and by providing comment on other teacher students' texts.

Self-regulation was regarded as important for designing teaching during work placement and later as a vocational teacher. Self-regulation is also about completing tasks. 'I learned self-regulation and self-planning in the school where I teach. To act as a professional, I had to plan the content' (T₂).

These quotes above indicate that the vocational teacher students thought broadly about how they had learned these skills, not only at the university but also through their work experiences. In addition, they found it difficult to specify which competences they had developed in the vocational teacher education programme and which before starting the training.

When we asked about the skill of global connections, we got two different types of answer. On the one hand, some perceived it not to be relevant in one's work, while on the other hand others felt it was a regular part of work. Teacher students in the health and social care area thought that their profession was more local than global, but they recognised what could be called 'home internationalisation' meaning that international contacts are also in Sweden – for example, when working with migrants, as one of the students said:

International contacts are not relevant as part of work as a teacher, or in teacher education. However, being able to work with people from different places and cultures is very relevant, because many of the nursing assistants in health care in Sweden are migrants. (TS1)

One teacher student in the restaurant management and food sector said: 'My interest is to get to work with teachers from other countries and schools' (TS2). However, even though the student recognised the use of international literature at the university, they found it difficult to apply this [content] to the Swedish context: 'Yes, it is Williams [author of a textbook]. That course literature comes from the US, and American schools feels different compared to Swedish [schools]' (T2).

The students thought that digitalisation was more developed in the schools where they taught than at the university, and said they learned more about using technology as a learning tool in the schools than they did in the vocational teacher education programme: 'I do not need to learn about IT in the education programme. I achieve the necessary IT knowledge in the school

where I teach' (TS₂); and 'I think also this technology – we haven't had very much of this [at the university]' (TS₃).

The teacher students recognised that challenges related to the 21st century skills were maintaining curiosity and coping with constant change; as one of the students pointed out, '[i]t is easy just to drive on and not be so open to changes' (TS₁).

6. TEACHING EXPERIENCE IN RELATION TO 21ST CENTURY SKILLS

For the second research question, which focused on the role of practical teaching experience in relation to the eight skills, we formed three groups: teacher students with 'no teaching experience' (N=16), teacher students with 'less than three years' of teaching experience (N=13) and teacher students with 'more than three years' of teaching experience (N=24; Table 1).

Based on the descriptive analyses of the questionnaire, we noticed that 'no teaching experience' participants were slightly more positive about having learned the three skills – critical thinking, making global and local connections, and using technology as a tool for learning from the programme (indicated as A in Table 1) than those who had teaching experience.

Teacher students who had 'more than three years' of teaching experience were slightly more positive than others about having learned collaboration, communication and self-regulation skills in the programme. Those teacher students who had 'less than three years' of teaching experience were slightly more negative in their perceptions than the other two groups in relation to all other skills expect using technology as a tool for learning (Table 1). However, no significant differences were found in these results.

In terms of the skills applied to teaching (indicated as B in Table 1), we discovered that the participants with ‘more than three years’ of teaching experience were more positive about applying the skills in their teaching than the other two groups.

Furthermore, in relation to communication, creativity, self-regulation, and making global and local connections skills there were significant differences ($p < 0.05$) between those with ‘three years or more’ of teaching experience and those with ‘no teaching experience’.

In addition, there was a significant difference ($p < 0.05$) between participants’ perceptions regarding the skill of making global connections and the other two groups (Table 1).

A) Critical thinking	No teaching experience	16	4,07	0,63
	Yes, less than 3 years	13	3,83	0,44
	Yes, more than 3 years	24	3,94	0,48
B) Critical thinking	No teaching experience	16	2,88	1,95
	Yes, less than 3 years	13	3,56	1,21
	Yes, more than 3 years	24	3,94	1,30
A) Collaboration	No teaching experience	16	3,94	0,54
	Yes, less than 3 years	13	3,83	0,47
	Yes, more than 3 years	24	4,00	0,64
B) Collaboration	No teaching experience	16	2,85	2,04
	Yes, less than 3 years	13	3,69	1,24
	Yes, more than 3 years	24	4,10	1,35
A) Communication	No teaching experience	16	3,88	0,60
	Yes, less than 3 years	13	3,48	0,60
	Yes, more than 3 years	24	3,93	0,55

B) Communication*	No teaching experience	16	2,60	1,95
	Yes, less than 3 years	13	3,82	1,23
	Yes, more than 3 years	24	4,01	1,35
	*More than 3 years > no teaching experience ($p < 0.05$)			
A) Creativity	No teaching experience	16	3,55	0,52
	Yes, less than 3 years	13	3,45	0,64
	Yes, more than 3 years	24	3,54	0,79
B) Creativity*	No teaching experience	16	2,58	1,68
	Yes, less than 3 years	13	3,54	1,27
	Yes, more than 3 years	24	3,92	1,34
	*More than 3 years > no teaching experience ($p < 0.05$)			
A) Self-regulation	No teaching experience	16	3,83	0,52
	Yes, less than 3 years	13	3,64	0,52
	Yes, more than 3 years	24	3,92	0,63
B) Self-regulation*	No teaching experience	16	2,12	1,81
	Yes, less than 3 years	13	3,41	1,16
	Yes, more than 3 years	24	3,93	1,31
	*More than 3 years > no teaching experience ($p < 0.05$)			
A) Making global connections	No teaching experience	16	3,11	1,00
	Yes, less than 3 years	13	2,78	1,07
	Yes, more than 3 years	24	3,02	0,93

B) Making global connections*	No teaching experience	16	1,29	1,64
	Yes, less than 3 years	13	3,00	1,25
	Yes, more than 3 years	24	3,24	1,26
	*Less than 3 years > no teaching experience ($p < 0.05$)			
	*More than 3 years > no teaching experience ($p < 0.05$)			
A) Making local connections	No teaching experience	16	3,54	1,20
	Yes, less than 3 years	13	3,08	0,92
	Yes, more than 3 years	24	3,29	0,91
B) Making local connections*	No teaching experience	16	2,29	1,86
	Yes, less than 3 years	13	3,44	1,19
	Yes, more than 3 years	24	3,65	1,30
	*More than 3 years > no teaching experience ($p < 0.05$)			
A) Using technology as a tool for learning	No teaching experience	16	3,64	0,63
	Yes, less than 3 years	13	3,38	1,05
	Yes, more than 3 years	24	3,30	0,81
B) Using technology as a tool for learning	No teaching experience	16	2,60	1,90
	Yes, less than 3 years	13	3,44	1,32
	Yes, more than 3 years	24	3,69	1,29

Table 1. Descriptive analyses: extent of participants' teaching experience, their perceptions of the 21st century skills learned in the programme, and applying these skills in their teaching

In the interviews, when we asked students to reflect on what they had learned in the programme and what they could apply in their teaching, they reflected on the difference between the full-time and half-time programmes. They said that working in a school while enrolled in the teacher education programme

gave them the opportunity to automatically implement what was being studied and discussed in the programme. The student who studied part-time also worked part-time as a VET school teacher. The interviewer asked if the student was able to use the skills learned in the programme when he was working and he quickly responded, '[y]es, I can'. In addition the student said, '[m]ost of the teacher training at universities is about reading texts and research and how researchers relate to other researchers' (TS2). Another aspect was that the teacher students approached the skills holistically and did not specify how or when they had learned them.

7. DISCUSSION AND CONCLUSIONS

This study explores vocational teacher students' perceptions of the extent to which a VET teacher education programme had helped them to learn a set of 21st century skills and the extent to which they had been able to apply these skills in their teaching to support their students' learning of these skills. The importance of 21st century skills is recognised internationally, as people need to function effectively in society (Care, 2018). The skills are not connected directly to a specific subject or a vocation. Previous studies on 21st century skills have typically focused on skills such as critical thinking (Sulaiman, 2012), collaboration (Lee et al. 2015), or using technology as a tool for learning (Ramadan et al. 2018). This study, however, was based on a holistic approach including eight 21st century skills: critical thinking, collaboration, communication, creativity, self-regulation, making global and local connections, and using technology as a tool for learning. Previous research on vocational teacher education

has not explicitly focused on 21st century skills but rather on competences vocational teachers need in their future profession (e.g., Ashgari, 2018) as well as teachers' continuous professional development (e.g., Andersson et al. 2018). Thus, this study contributes to the development of vocational teacher education and its link to 21st century skills.

The results revealed that the VET teacher students felt they had learned all eight skills in the programme and applied them in their teaching practice. However, the skill of global connections was regarded as that skill least learned in the programme and least applied in teaching. This may be due to the fact that the teacher students felt a lack of competence in this area, as earlier studies have suggested (e.g., Lehman, 2017). Only with self-regulation was there a significant difference between what was learned in the programme and the extent to which it was applied in teaching, which indicates that the VET teacher students had learned more self-regulation in the programme than they were able to apply in their teaching. This can be interpreted to mean that taking responsibility for one's own learning in higher education requires self-regulation (e.g., Kuo, 2010). In addition, the students with more teaching experience had more positive perceptions about applying the skills in their teaching than the teacher students with less teaching experience. Significant differences were found in relation to the students' perceptions about communication, creativity, self-regulation and creating global and local connections. This can be interpreted to mean that students without teaching experience have difficulty understanding the relationship between theory and practice. On the other hand, if teacher students do not have much teaching experience, it may be hard to apply 21st century skills in teaching practice.

Further, reflecting on our findings in relation to the vocational teacher education program, critical thinking was found important in the survey (see Figure 1). The programme study plan used several verbs to highlight critical thinking skills in their descriptions of prescribed learning outcomes, such as ‘analyse’, ‘critically review’, ‘problematise’, ‘discuss’, ‘compare’ and ‘reflect’. Collaboration, communication and self-regulation were also perceived to have been learnt from the programme to a high degree. Even though these skills are not expressed in the prescribed learning outcomes to the same extent as critical thinking, they are integrated in the education programme as integral to teaching forms like seminars, internships and self-studies. The skill ‘making global connections’ is nearly absent in the prescribed learning outcomes of the vocational teacher programme and this is presumably why learning of this skill was perceived to be learned least frequently in the study.

While the validity of this survey had been ensured by using the same questionnaire used by another well-established research group in Finland (Harju et al. 2020; Niu et al. forthcoming), it is important to note that this was the first time it had been used in Sweden. The reliability of the instrument was also high. Despite efforts to distribute the questionnaire to all students in the programme and follow up meticulously, the sample was eventually small. It would be useful to conduct a follow-up study with more participants in both the questionnaire survey and the interviews. Further research is also needed on how VET teacher students’ teaching experience affects their ability to apply these 21st century skills when they teach in schools. And it would be interesting to see whether emphasising and extending work placement or creating a workplace-related education pro-

gramme would have an impact on VET students' ability to apply the 21st century skills in the workplace. Would it also strengthen opportunities for local contacts and future employment?

Reflecting on the practical implications of our findings, one may ask: 'how do teacher educators in VET teacher education programmes promote teacher students' 21st century skills? One answer may be that there is a need for some guiding principles. Provision of didactic principles for teachers has been discussed previously in VET (Eliasson, 2019). We would likewise argue that VET teacher educators need to act as boundary-crossing role models for VET teacher students, encouraging them to tackle, with vocational knowledge, 21st century skills and teaching practices, which are intertwined. In addition, we realise that there are several practical approaches which take into account the need for VET teacher students to learn several intertwined issues and cross the boundary between learning at school and learning at work. One such practical approach is integrated teaching (e.g., Christidis, 2020) in which different subjects are taught together. Another is integrative pedagogy, which is based on the idea of integrating theoretical knowledge, practical knowledge, self-regulative knowledge and socio-cultural knowledge (e.g., Tynjälä, Virtanen, Klemola, Kostiainen, & Rasku-Puttonen, 2016). Case method or problem-based learning (e.g., Barrows, 1996) are also good examples of how to connect the practical context of VET teachers' work to the theoretical knowledge learned at the university.

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