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Ensuring Curriculum Relevance in Vocational Education and Training: Epistemological Perspectives in a Curriculum Research Project

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Abstract: This article addresses challenges regarding relevance in vocational education and training (VET) curricula. Recent research on Norwegian VET shows that the educational content is not sufficiently related to the students’ needs for qualification in the actual vocations. I will present a new curriculum research project aimed at investigating and improving the vocational relevance in Norwegian VET. An important part of the project is to investigate epistemological perspectives on how vocational knowledge is constituted and developed, and consequences for the curriculum. The article presents results from these epistemological investigations. I will argue that the relevance problem relates to a one-sided rationalist epistemology in which a main idea is that vocational knowledge consists of theoretical principles and procedures to be applied in practical situations. This idea influences educational traditions and structures, and leads to a separation between theoretical and practical subjects and learning arenas. From a pragmatic epistemological perspective, it can be argued that vocational knowledge is contextual and holistic, and consists of complex wholes of physicality, motor skills, intellectual understandings, values, and verbalized concepts. To ensure curriculum relevance, a curriculum is needed in which authentic practical work is the base, and subjects are integrated with students’ practical work experience.

Keywords: VET, Vocational Education and Training, VET in Schools, Curriculum Development, Experiential Learning, Vocational Preparation

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1 Introduction

Recent curriculum research in Norwegian vocational education and training (VET) has pointed towards major challenges in vocational education. A core problem is that the educational content is not sufficiently relevant to the needs for qualifications in the actual vocations. Students complain that they lose sight of the vocation for which they wish to qualify. Vocational firms complain that vocational students are not properly qualified (Dahlback, Hansen, Haaland, & Sylte, 2011; Hansen & Haaland, 2015; Hiim, 2013, 2015). The results from various projects indicate that close collaboration and the establishment of an appropriate infrastructure between vocational schools and vocational work enterprises are preconditions for improving curricula and learning (Nyen & Tønder, 2012; Vibe, Frøseth, Hovdehaugen & Markussen, 2012). However, significant structural and educational issues present challenges to such improvement.

The Norwegian VET is organised in a 2 + 2 - model, with two school years followed by two apprenticeship years. The school-based part consists of nine broad programmes (e.g. construction, crafts and design, social and health care work). The curriculum in the school-based component consists of general academic subjects, general vocational subjects, and practical exercises in school workshops. However, the subjects and exercises are often poorly related to the actual vocations. The curriculum in the apprenticeship part often consists primarily of practical work. There is often a lack of coherence between different learning arenas - the classroom, the school workshop, and the workplace - and between subjects. The curriculum is split into theoretical subjects and corresponding learning arenas, and practical subjects and corresponding arenas. Variations in these problems are common in many VET models (Heggen, Smeby, & Vågan, 2015; Nyen & Tønder, 2012). In Norway, there is a high dropout rate in VET that could be related to a lack of relevance in the curriculum, but more research on this possible relationship is needed (Hiim, 2015).

A main task in vocational education is to develop a curriculum that gives students the opportunity to develop vocational knowledge in an occupation for which they wish to qualify. A relevant curriculum is a curriculum that provides the students with this opportunity. An important epistemological question is then: What is vocational knowledge (i.e., how is it constituted and developed)? The problems in Norwegian VET, as in other VET models, can be understood from an epistemological perspective. Norwegian VET students do not have sufficient opportunities to develop vocational knowledge in their chosen vocation. A main reason is that the curriculum is not based on an adequate understanding of how vocational knowledge is constituted and developed. In this article, I will question basic epistemological assumptions that seem to underlie the curriculum in Norwegian VET. The educational structures and the curriculum seem to be based on the ideas that vocational knowledge is a “sum” of different academic and vocational subjects, and consists of the ability to apply general knowledge in specific situations. Vocational knowledge can, therefore, be developed in theoretical and practical arenas separately. I will investigate the concept of vocational knowledge in light of rationalist, pragmatic, and critical epistemologies, and in light of Dreyfus and Dreyfus’ (1986) and Schön’s (1983, 1988) work on vocational and professional knowledge and education. The
aim of the investigation is to clarify what vocational knowledge is, to establish an epistemological understanding of how a vocationally relevant curriculum can be developed, and to determine what the main obstacles may be.

At Oslo and Akershus University College, we are in an initial phase of an extensive research project aimed at developing knowledge about how to ensure curriculum relevance in VET programmes. The project is based on findings from earlier research that I will present briefly in the next section. The new project involves thirty vocational teachers who are enrolled in an in-service master’s programme in vocational pedagogy, instructors from vocational firms, and a group of twelve vocational teacher educators who are also university researchers. A main approach is educational action research in the form of teacher research. Educational action research can be defined as:

Studies that include systematic collaboration in planning, carrying out, evaluation and critical analysis of educational, teaching and learning processes, with the aim of improving the quality of these processes and of developing and documenting new knowledge on education, teaching and learning (Hiim, 2007, p. 101).

In educational action research, curriculum research is seen as a kind of practitioner research that should be conducted by professional teachers (Hiim, 2016; Kemmis, 2012; Zeichner, 2002). The vocational teachers, who represent different vocational programmes, will conduct independent action research projects in their own practises, aimed at developing vocationally relevant curricula in their programmes in collaboration with their students, teacher colleagues, and instructors in actual firms. The projects will be documented in master’s theses that will be an important part of the overall documentation of results from the project.

In addition to action research, different forms of quantitative and qualitative research approaches and methods (e.g. interviews and questionnaires) will also be used in the project to investigate how different stakeholders see and experience challenges concerning vocational relevance and the development of vocational knowledge in VET programmes. Important stakeholders include vocational students, apprentices, teachers, instructors, and school leaders. All the different subprojects are aimed at throwing light upon the main question:

How can vocationally relevant curricula be developed in vocational programmes?

In other words - how can we develop a curriculum in vocational education that gives students the opportunities to develop vocational knowledge in a vocation for which they wish to qualify? To answer these questions, epistemological investigations of how vocational knowledge is constituted and developed are important. The aim in this article is to contribute, with an epistemological conceptual framework, to development and research on vocationally relevant curriculum in our project. This framework may also be of interest to other researchers in VET.

I will first present briefly some primary results from an earlier curriculum research project in VET that throw light upon the relevance problem. Our new project builds on
these results. Then, I will investigate the question of relevancy through epistemological analyses of vocational knowledge. In the final discussion section, I will summarize what we can learn from the epistemological analyses about how curriculum relevance and students’ opportunities to develop vocational knowledge can be stimulated and organized, and what important obstacles exist.

2 Prior Research

Results from a previous curriculum research project indicate that students in the school-based part of Norwegian VET do not believe that they have sufficient opportunities to develop vocational knowledge in their chosen occupations, nor are the vocational teachers satisfied with the opportunities given by the educational structure and curriculum framework. Like the new project, the prior research project also combined action research with qualitative interviews and questionnaires (Dahlback et al., 2011; Hansen & Haaland, 2015; Hiim, 2013, 2015). The results from the project show that many students get no work life practice in vocations they are interested in during their first year, even if the formal curriculum encourages placement periods in vocational firms. According to the students, the lack of practical experience makes it difficult for them to make informed vocational choices. It also makes it difficult for them to understand the vocational school subjects; the vocational teachers affirm this dilemma. The teachers emphasize that the regional and local educational authorities leave all the responsibility for placement periods and other kinds of cooperation between vocational schools and firms to the individual teachers, and that the system often prevents, rather than facilitates, this kind of cooperation. Students who do get the opportunity of work practice report that the quality varies greatly, and the learning outcome can be quite limited. The teachers say that the division of the curriculum into many different vocational and academic subjects makes it difficult to relate the content systematically to the actual vocations. Correspondingly, the students express that they do not see the connection between the subjects and the vocations. These results are supported by other research (Nyen & Tønder, 2012; Vibe et al., 2012).

Many of the vocational teachers in this project conducted action research where they tried to develop a more practice-based, integrated curriculum in cooperation with vocational firms. The results were quite promising, and some key principles that came out of the projects can be briefly outlined. The results indicated that cooperation between schools and work life on the curriculum is crucial to students’ vocational learning and should be institutionalized, not left to individual teachers. Counselling on choice of occupation in the initial, school-based part of VET programmes is important, and should involve instructors and workers in vocational firms. These workers and instructors have updated information about their respective vocations and may also serve as role models for students. Another precondition for a vocationally relevant curriculum has to do with analysing work demands, core competences, and the need for qualifications in the actual vocations. Cooperation between vocational teachers and instructors on this kind of analysis will secure the relevance of concrete educational content. This cooperation
should be related to preparations for placement periods, guidance during these periods, and work afterwards. Lectures, assignments, and work in the school workshop should be systematically related to placement periods. Students’ practical work experiences can be the basis of work in school, and the integration of subjects with these experiences seems to be a core principle for students’ development of vocational knowledge (Hansen & Haaland, 2015; Hiim, 2015).

Results from this and other Norwegian curriculum research projects have fewer results concerning the apprenticeship period of VET, but it seems imperative for the apprentices who are learning to receive systematic theoretical education closely related to their work.

Results and main principles from this previous project are an important background in our new project on vocationally relevant curriculum. Epistemological analyses of how vocational knowledge is constituted and developed may provide a deeper understanding of the principles.

The question is: How can the students’ opportunities - or lack of opportunities - to develop vocational knowledge be understood in light of rationalist, pragmatic, and critical epistemology? I will start with a rationalist, technological concept of vocational knowledge and curriculum.

3 A Rationalist Concept of Vocational Knowledge and Curriculum

Problems of relevance in professional and vocational education have been analysed in the context of a rationalist, technological concept of knowledge (e.g. Dreyfus, 1991; Dreyfus & Dreyfus, 1986; Molander, 1997; Schön, 1983, 1995). A technological concept of knowledge implies that knowledge is seen as depictions of given entities in the world, relating to each other through laws (Molander, 1997). The relationship between theory and practice is seen as a kind of one-to-one relationship between a map and a terrain. There is an understanding that generally given concepts and conceptual structures can be transferred through verbal formulations and then used in practice. This means that disciplinary theoretical knowledge (e.g. mathematics, physics, biology, psychology, or language) can first be learned at school and then applied in professional and vocational practice (Janik, 1996). The Norwegian 2 + 2 - model is partly based on a rationalist understanding of vocational knowledge and curriculum. The model itself was more or less built on the assumption that theoretical knowledge can be learned at school the first two years, and then applied in vocational practice during the apprenticeship period.

Results from the project mentioned earlier show that the separation of theoretical, disciplinary knowledge from practical skills and knowledge is problematic for the students and questioned by the vocational teachers (Hiim, 2015).

A technological concept of knowledge tends to imply a systematic separation between theoretical and practical arenas for learning and knowledge development, and between theoretical and practical subjects, and a domination of theory (Molander, 1997). This kind of separation and domination is seen in many VET models and curricula (Billett, 2011; Young, 2004). It usually leads to problems of relevance in the curriculum, as seen in
the Norwegian model and the research presented above. A technological understanding of the relationship between theory and practice is also connected with a separation of professional or vocational practice and research (Janik, 1996). This separation tends to imply a lack of knowledge development, research, and educational literature based on professional vocational practice (Schön, 1983). A lack of systematic development of vocational language, concepts, and theory is a problem in many vocations. The education is forced to borrow concepts from other professional areas or from general theoretical disciplines in the curriculum that are not an integrated part of the knowledge base in the actual vocation.

The relevancy problems in Norwegian VET and corresponding problems in other VET models indicate that the curriculum is based on a one-sided and insufficient rationalist understanding of how vocational knowledge is constituted and developed. In the next section, I will investigate pragmatic perspectives on vocational knowledge and curriculum that are partly based on a critique of rationalism.

4 Pragmatic Epistemological Perspectives on Vocational Knowledge and Curriculum

Interpretations of pragmatic philosophy (e.g. of the late Wittgenstein, 2003; the early Heidegger, 1978; and Dewey, 2010) have inspired educators and theorists of professional and vocational knowledge (e.g. Dreyfus & Dreyfus, 1986; Janik, 1996; Molander, 1997; Schön, 1983, 1988). Pragmatic epistemology raises questions concerning a conventional, rationalist conception of knowledge and knowledge transfer. The theorists named earlier have argued that a rationalist concept of knowledge is too limited for understanding professional and vocational knowledge and learning, and tends to oversimplify the relationship between theory and practice in a way that leads to problems of relevance in education. In my discussion of pragmatic perspectives on vocational knowledge and curriculum, I begin with some basic concepts from Wittgenstein and Heidegger. Then I investigate some key concepts from Dreyfus and Dreyfus’ (1986) and Schön’s (1983, 1988) theories on professional knowledge and education that can throw light upon how relevant VET curricula can be developed. I will try to show that there is a strong connection between epistemological concepts in Wittgenstein and Heidegger’s philosophies and Dreyfus and Dreyfus’ and Schön’s theories on professional knowledge and education. The analysis of this connection may create a deeper understanding of Dreyfus and Dreyfus’ and Schön’s theories and of vocational knowledge and curriculum.

From a pragmatic perspective, life forms and practices are the foundations of experience and learning. Experience and language are seen as living, participating, involved activity whereby the use of words and concepts is woven into cultural and practical patterns (e.g. practical patterns as a nurse, a plumber, a health care assistant, etc.). Attention is directed towards different dimensions of knowledge. Vocational knowledge is constituted by complex wholes of physical, motor skills, intellectual understandings, emotions, values, and verbalised concepts. Contextual aspects of knowledge and learning are emphasised. The example and practical situations are of basic importance in pro-
Professional and vocational learning and knowledge development (Janik, 1996; Molander, 1997). The focus on the practical situation, the example, and the multidimensionality of knowledge has important implications for the curriculum that I will come back to in subsequent sections.

4.1 Vocational Knowledge and Curriculum in Light of Wittgenstein

Based on interpretations of Wittgenstein’s (2003) game metaphor, experience can be compared with games as a playful, living activity (see also Hiim, 2010; Janik, 1996; Molander, 1997). Experience and learning are processes that happen through participation rather than reception. A game has a point - a purpose. Engagement and understanding of the purpose is necessary to learn the game. To learn a game, one must be shown by someone who knows and can play it. Experience and learning happen through participation in something for which one sees the point and purpose. For instance - what is the social, cultural, and personal purpose of being a health care assistant, a florist, or a plumber? What are the basic tasks and social mandate?

The game metaphor implies that experience and learning can be understood as participating in life forms or games that are continually developed and changed (Molander, 1997). Words and concepts are woven into a life form or a context (e.g. the context as a plumber or a health care assistant). Understanding a concept means taking part in a context. Concepts (e.g. the concept “care for the patient”) have meaning in a specific health care situation, related to other concepts, and the meaning of a concept varies with the context (Janik, 1996).

From Wittgenstein’s (2003) perspective, experience and knowledge are constituted by actions, sensations, emotions, understanding, intentions, and language. Involvement, sensitivity, and instinct are as important as theoretical and intellectual reason. Seen from this angle, vocational knowledge is in our bodies, both in our way of watching and in the vocational culture.

Wittgenstein’s (2003) holistic conception of knowledge emphasizes the situation as a unity of meaning and the importance of learning from examples. He points towards the necessity of participating in the “games” in which concepts are grounded (e.g. the game as a health care assistant or a plumber). A criterion for relevant curriculum in VET is that students have opportunities to participate in relevant practical situations and tasks that may serve as basic examples of professional practice (Hiim, 2013). A main challenge is creating paradigmatic examples from situations concerning vocational tasks and competences that constitute basic knowledge in the actual vocation (Janik, 1996).

An important part of the cooperation between vocational teachers and instructors is to clarify basic functions and tasks in the actual vocation and relate them to authentic example situations in which students can be actively involved. The aim is to create a common understanding of core competences and needs for qualifications - a common understanding of the game, so to speak. To learn the actual vocational game, students must participate in real situations and be guided by experts. It is not enough to be told about or look at the game, as is often the case in school-based VET.

Wittgenstein (2003) rejects the idea that concepts can be defined by absolute general
structures. Practical knowledge does not imply the application of theoretical definitions, concepts, or propositions in specific situations. It cannot be developed through applying general rules in particular cases (Janik, 1996). Relevance problems in vocational school-based education are connected with a lack of attention to how vocational concepts and knowledge are constituted through regular practical experience. Vocational students’ lack of opportunities for this experience in Norwegian VET may be regarded as creating a major relevance problem in the curriculum.

4.2 Vocational Knowledge and Curriculum in Light of Heidegger

Based on Heidegger’s (1978) workshop metaphor, experience can be compared with work in a workshop where everything has a function and an ultimate purpose (e.g. building doors to a house to protect people against weather and danger). From Heidegger’s perspective, our use of things and concepts are always connected with intentions, functions, and contexts that are already in our existence and culture. Experience and learning primarily happen through participation in something, the point of which is clear to us - through projects. Experience always implies intentionality - a project, something we will, which means something (Janik, 1996; Molander, 1997). Experience and learning become explicit and conscious when we encounter a challenge or problem: a hammer that is too heavy, a patient who looks uncomfortable, etc. Discovering and framing problems that are experienced in concrete situations and contexts is a basic starting point for learning. Actions and concepts take on meaning through meaningful contexts in which we are involved (Dreyfus, 1991). The plumbing tools and concepts get meaning through the actual work situations and challenges. We learn through using and doing, through intentions related to involvement, feelings, and senses. Phenomena and concepts have meaning related to functions and tasks. We are absorbed in our practice, and then a problem arises. The challenges we face demand deliberation, reflection, new solutions and new knowledge. A criterion for relevant curriculum is that students have opportunities to participate in projects that mean something to them as future professionals, that is, projects whose purpose they understand, are involved in and from which they have the opportunity to solve authentic professional problems (Dreyfus, 1991). Our new curriculum project is aimed at investigating these opportunities.

4.3 Vocational Knowledge and Curriculum in Light of Dreyfus and Dreyfus’ Competence Model

As we have seen in the sections above, a pragmatic epistemological understanding of vocational knowledge emphasizes that it is multidimensional, context bound and related to examples and challenges in concrete situations. In this section I will try to connect the epistemological analyses above with an investigation of Dreyfus and Dreyfus (1986) competence model, and see how the model can throw light upon VET curriculum.

A main idea in Dreyfus and Dreyfus’ competence model is to warn against rationalist ideas that professional knowledge can be reduced to or governed by conventional instrumental theories, rules and procedures. Such ideas may lead to a theoretically and
practically standardized curriculum where students lack the opportunities of varied experience and of developing their ability for exercising professional vocational judgement. We see such tendencies of standardization in Norwegian VET curricula, especially when it comes to formal assessment. According to Dreyfus and Dreyfus (1986), the reduction of vocational knowledge to standards may lead to professional stagnation.

The competence model shows the development of professional skills and knowledge occurring through a gradual move from novice to expert whereby a core aspect of the educational experience consists of practical exercise and realistic examples. Learning through exercise in practical situations necessarily includes senses, motor skills and feelings as well as intellectual understanding. Professional knowledge consists of a complex integration of knowing how and knowing that; it cannot simply be reduced to words:

The fact that you can’t put what you have learned into words means that know-how is not accessible for you in the form of facts and rules. . . . If you are a carpenter, you know how to use tools in a way that escapes verbalization (Dreyfus & Dreyfus, 1986, pp. 14-15).

At the initial or novice level, we often learn by following simple procedures in standardised exercise situations. But at subsequent levels, which should be stimulated quickly, our learning takes place as a gradually more complex meeting with real situations where emotional involvement plays a major role. As tasks and situations become more and more extensive and complex, procedures and plans are gradually replaced by greater levels of situational adaption and professional patterns of reaction. Students’ development of professional identity and engagement grows along with opportunities fostering responsibility in professional performance.

According to Dreyfus and Dreyfus (1986), expert knowledge is not characterised by procedures and calculated plans; it takes place in a more holistic way. Expertise means being able to “read” situations and to act quickly and intuitively (e.g. as a plumber, health care assistant, or nurse). It presupposes extensive, involved experience in many different situations and a great repertoire of skills. Dreyfus and Dreyfus’ conception of professional knowledge implies that a main concern in relevant VET curricula is stimulating the development of “beginning expertise”. An important principle is that students have opportunities to become involved in a considerable number of vocationally authentic, situational, and gradually ambiguous examples in placement periods and school workshops. Principles relating to tasks and assignments in the practice setting or school include ensuring they are different, complex, and varied, and that the students gradually acquire increasing levels of professional responsibility. Professional coherence between different tasks is essential. Authentic examples, coherence between tasks, and the development of beginning expertise can only be obtained through close cooperation between vocational schools and work enterprises. As we have seen, this kind of cooperation is limited in school-based Norwegian VET, as are students’ opportunities to work with vocationally authentic examples.

From Dreyfus and Dreyfus’ (1986) perspective, the curriculum should focus on the interpretation of practical situations rather than on theory in the first place. The ability
to use former experience in problem-solving and to learn from practice needs to be stimulated. Discussions of different perspectives regarding professional tasks and basic interpretations of professional work (e.g. as a plumber or health care assistant) may stimulate students’ learning from practice. Further discussions and interpretations of practical situations in the school workshop, in the workplace, and in the classroom will facilitate the development of professional vocational knowledge.

From a point of view inspired by Dreyfus and Dreyfus (1986), an important principle in vocational curriculum is to organize ongoing discussions to clarify what kinds of tasks and examples students should work with during their education to ensure relevance and progression. Tasks and assignments easily become rather accidental and governed by what happens from day to day, especially during the important placement periods. It should be emphasized that the point is not to define fixed standards for assignments and exercises, which would be contrary to Dreyfus and Dreyfus’ epistemological ideas, but to see the clarification of tasks as a dynamic curricular process.

Dreyfus and Dreyfus (1986) do not say much about the concept of theory, but they see theoretical knowledge as a factor in explaining and criticising vocational performance. Formal theory should be taught after students receive practical experience and must be systematically related to professional tasks and functions. This means that theories should be integrated to explain and to provide perspectives on practical problems and solutions. The concept “vocational theory” was used earlier in Norway, and may be helpful as long as it is not interpreted as a one-sided instrumental concept. For Dreyfus and Dreyfus, a main issue is that professional and vocational knowledge is grounded in a variety of examples and cannot be reduced to instrumental prescriptions.

From a pragmatic point of view, Dreyfus and Dreyfus’ (1986) competence model may be criticised for too strong an emphasis on standardised exercises in the initial phases of the professional learning process. It can be argued that students can be invited to be involved in simple but realistic tasks from the start. However, the model is clearly inspired by a pragmatic epistemological concept of professional knowledge, with its focus on the situation, the example, the tasks, the involvement, and the multi-dimensionality of knowledge, and with its scepticism towards standardization of the curriculum. The model is a system of ideas and principles concerning how vocational knowledge can be developed from beginner to expert level, and how the curriculum can be correspondingly organized.

4.4 Vocational Knowledge and Curriculum in Light of Schön’s Concept of a Reflective Practicum

Schön (1983) is very critical of a technological, rationalist view of professional knowledge and education that implies that professional knowledge and activity “consist in instrumental problem-solving made rigorous by the application of scientific theory and technique” (Schön, 1983, p. 21). He argues that the educational system is strongly influenced by a technological concept of knowledge, and that the development of professionalism has been poor in modern educational systems. Opportunities for practice-based learning remain limited, workshop exercises are overly structured, and there is
a lack of theory development and research based on actual vocational and professional practices. As mentioned above, these are all problems in Norwegian VET that need to be addressed and investigated. In his critique, Schön (1983) argues that practical tasks (e.g. as a nurse or plumber) change all the time and are characterised by complexity, uncertainty, and value conflicts that cannot be reduced to technical standards. Professional knowledge is multidimensional, constituted of skills related to our senses, values, feelings, understanding, and verbalised concepts. Factors relating to senses and skills cannot be reduced to words, but Schön emphasizes that words play an important role in professional vocational work and learning processes.

In his studies, Schön demonstrates how professionals carry out reflective conversations within the situation, a practice that he calls reflection-in-action (Schön, 1983). The professional worker acts, thinks, talks, and learns. The process can be compared to a game in which each move has consequences for the next, and each move is a kind of experiment. We try out how our practice (e.g. the construction or the nursing process) can be performed as well as possible. The trying-out is connected with a conceptual framing and understanding of the situation, which may be expressed through a professional theoretical perspective. The role of vocational teachers and instructors is to guide and advise students in this process. Vocational knowledge is developed through reflection-in-action and professional theoretical framing of situations. It is developed through critique of good work and experiments with alternatives.

Schön emphasises the value of what he calls a reflective practicum (1983, 1988), which means a simulated professional world in the form of a workshop or a clinic where students can experiment and reflect in realistic situations. Real work practice should also function as a reflective practicum, whereby students can experiment and reflect on a wide range of situations under safe conditions.

Schön is adamant about the importance of stimulating reflection-in-action in the education of practitioners and sees this kind of reflection as analogous to a researcher’s attitude to practice:

When someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but constructs a new theory for the unique case . . . . He does not separate thinking from doing (Schön, 1983, pp. 68-69).

Not separating thinking from doing and theory from practice is a core issue in Schön’s conception of professional and vocational knowledge. He uses the concept of knowing-in-action to express the unity of thinking and doing. This unity, and the multidimensionality of vocational knowledge, implies that this kind of knowledge is expressed through complex wholes of manual skills, intellectual reason, and value judgments. A relevant curriculum is a curriculum that provides the students with opportunities to develop and express all dimensions of knowledge in the actual vocation. Also, when it comes to assessment, holistic vocational knowledge should be evaluated; assessment should not be limited to fragmented verbal, disciplinary, or theoretical knowledge, as is often the case.

Schön also argues for the importance of practice-based research where practitioners
(e.g. nurses or teachers) contribute to the development of professional concepts relating to professional examples (Schön, 1991). The need for practitioner research can be seen in relation to a traditional distinction between real professions, semi-professions and vocations. The distinction, which is still widely used, implies that real professions have theory and research directly linked to them, semi-professions must borrow theory from real professions and from academic disciplines, and vocations do not need theory and research because they just demand practical, manual skills (Schön, 1983; Smeby, 2015).

An understanding that vocational competence mainly consists of manual skills is highly dubious in a modern, technological, and complex society where a considerable number of vocational tasks require advanced practical and theoretical knowledge. One of the reasons for increasing the school-based component of vocational education is the recognition that vocational knowledge and high-level competence include theory. When Schön (1983) points to the distinction between professions, semi-professions, and vocations, he draws attention to a lack of relevant research and theory in the latter two, which leads to problems of relevance. Theoretical concepts grounded in actual professional practice are important in all professions and vocations in modern society. They concern descriptions of how and explanations of why, and offer broader social perspectives on vocational practice. From this point of view, systematic, practice-based development projects and research are needed in all vocations to strengthen the knowledge base and the curriculum in the actual vocations.

Based on Schön’s (1983, 1988) ideas, it seems reasonable to say that an important aspect of curriculum development in VET is to relate concepts and theories that are borrowed from the professions or from academic disciplines systematically to actual vocations. Theories and disciplines should be integrated through a focus on essential vocational tasks. The curriculum should not be split into disciplines and subjects separated from vocational functions, as is often the case.

Schön’s concepts of knowing-in-action and reflection-in-action point towards how a relevant curriculum in VET can be developed through a reflective practicum, where knowing and action are integrated. The reflective practicum contains authentic practical situations, examples, and multidimensional tasks that students are involved in, where they can experiment with and reflect on problem definitions and problem-solving.

Pragmatic epistemology has been criticised for an overly one-sided focus on existing traditions of practice, with insufficient attention paid to normative aspects and questions of power. This critique will be discussed in the next section.

4.5 Vocational Knowledge and Curriculum in Light of Habermas

There may be a tendency to conceive of established vocational and professional knowledge and traditions as a given, rather than as an expression of social norms and values that may be changed (Habermas, 1980). In this way, the apprenticeship tradition in vocational education has been partly characterised by a relatively authoritarian transference of traditions, a lack of co-influence in the learning process, and a lack of critique and development.

As mentioned earlier, there is also a relatively strong tendency in our society to reduce
different types of practice, in technical as well as in social vocations, to instrumental actions and skills that are primarily evaluated on the basis of demands for efficiency (Nielsen, Nielsen, & Munch-Madsen, 2010; Sennett, 2008). In a one-sided instrumental understanding of social and professional activity and knowledge, the evaluation of skilled craftsmanship, care for patients, and learning is reduced to a question of efficiency related to given, measurable standards. Habermas’ (1999) concern in the theory of communicative action is to create a basis for the critique and democratic change of social practice. All vocations, technical as well as social, have a social element of norms and values that constitutes parts of their vocational knowledge.

Communicative competence (Habermas, 1999) means the ability to judge, in fields such as nursing, construction, and floristry: Is what is done and said effective? Is it in accordance with factual knowledge in the actual field? Is it understandable to those involved (i.e., patients, customers, clients, colleagues)? Do those involved have an opportunity to express themselves sincerely about what happens? Are actions and statements just, and in accordance with the ethics and social mandate of the vocation? From a critical perspective, these criteria represent important aspects of the VET curriculum. Students participating in vocational education must be stimulated to raise these questions when they plan, carry out, and evaluate their work, and be urged to answer them in collaboration with their patients, clients, and colleagues.

Abilities relating to democratic, cooperative reflection, critique, and change are an important part of skilled workers’ professional competence, whether they work as health care assistants, construction workers, electricians, or workers in other vocational fields. A high degree of standardisation in the organisation of modern work life - for instance - in health care work, tends to eliminate much of the professional’s responsibility for planning, carrying out, and evaluating work. The result may be a kind of de-professionalization where vocational competence becomes less varied and independent (Nielsen et al., 2010; Sennett, 2008). From a critical epistemological perspective, relevant vocational curricula are based on an understanding of vocational knowledge that also includes cooperation, creativity, independence, and ability to change. An important principle is to stimulate these competencies through democratic educational processes whereby students have co-influence in their own learning process.

5 Concluding Discussion: How can Curriculum Relevance in VET be Improved?

In this final discussion, I will conclude what we have learned about improving curriculum relevance from the epistemological analyses of vocational knowledge in the previous sections. Relevant curriculum can be defined as a curriculum that provides students with the opportunity to develop vocational knowledge in their chosen occupations. The epistemological analyses and results from previous research on the Norwegian VET curriculum indicate that unclear conceptions of what vocational knowledge is and how it is developed are problems in Norwegian VET and possibly in other VET programs. The analyses show that problems in the 2 + 2 model related to a split between learning arenas,
subjects, and theory and practice are connected with a rationalist, technological concept of knowledge that has, to a great extent, dominated our educational system. From a rationalist, technological epistemological perspective, professional vocational knowledge concerns the application of theory and technical procedures that can be learned before practice (Molander, 1997). Theoretical knowledge is separated from, and seen as superior to, practical knowledge (Janik, 1996). Results from previous research show that, according to VET teachers, practice in the form of placement periods has a low status and is not prioritized (Hansen & Haaland, 2015; Hiim, 2015).

A technological, rationalist understanding of knowledge is expressed through the separation of theoretical and practical subjects in the formal curriculum frameworks; there are a lack of opportunities for work life practice during the first two years, separation of theoretical and practical subjects in the timetables of the schools, forms of assessment that prioritize verbal and written knowledge, a lack of cooperation between vocational and academic teachers, and so on (Hiim, 2013). There is also a tendency to see vocations as crafts that do not rely on theoretical knowledge; from this perspective, cooperation between schools and work life is not necessary. These kinds of ideas and practices are often taken for granted and can be very difficult to change.

Results from previous research on Norwegian VET curricula, however, indicate that many teachers and students do not find the curriculum meaningful, and do not think that it gives students the opportunity to develop vocational knowledge. These results also indicate that work life practice in the school-based part is essential to students’ learning, and should be the core of the curriculum that all subjects are systematically related to (Hiim, 2013, 2015; Hansen & Haaland, 2015). Still, there is a need for more research here (see also Gessler & Howe, 2015). I have tried to show how analyses of vocational knowledge based on pragmatic and critical epistemologies can contribute with an understanding of why a more holistic, integrated and practice based curriculum should be developed, and how. The development and investigation of this kind of curriculum is a main issue in our new project.

A pragmatic concept of vocational knowledge, based on interpretations of Wittgenstein (2003) and Heidegger (1978) emphasises that our experience and learning are grounded in life forms and practices, and eventually vocational practices. Experience, learning, and knowledge development happen through participation in practices where intentions, concepts, and values are woven into professional vocational patterns. Professional vocational experience and knowledge is multi-dimensional, and it is constituted by complex wholes of skills related to senses, values, feelings, understanding, and verbal concepts. It is contextual, connected with various examples and situations, and has no absolute concepts. It has a purpose connected with a vocational practice, and with intentions, values, and responsibilities embedded in the practice (Janik, 1996; Molander, 1997).

Vocational knowledge concerns problem-solving in a variety of situations. This kind of knowledge is also intuitive, and demands abilities in situational judgement based on experiences from many different situations. Ethical judgment and democratic cooperation are important aspects of vocational knowledge, which also includes insight into the social and vocational mandate, and ability to critically judge norms and traditions. The last points are emphasized in critical epistemology (Habermas, 1999; Sennett, 2008).
Professional vocational knowledge is expressed in many forms - manual and technical skills, intellectual and verbal reasoning, and action - while it is also holistic. It is much more complex than a “sum” of general theoretical and technical procedures to be applied in specific situations. Dreyfus and Dreyfus (1986) and Schön (1983, 1988) share these basic pragmatic ideas of how vocational knowledge is constituted, and both emphasize the importance of the practice traditions, the multi-dimensionality, the context, the examples, the situations, and the participation. Both criticize the split between theory and practice, the simplistic ideas of transference, and the tendencies of standardization in a technological, rationalist understanding of vocational knowledge. The question is: How is this kind of knowledge developed? What kind of curriculum is needed?

From a pragmatic epistemological perspective, guidance on choice of occupation can be helping the students to choose their “game” and main purpose of their education. In “Democracy and Education”, Dewey (2010) emphasizes that choice of occupation is an existentially very important matter: “To find out what one is fitted to do and to secure the opportunity to do it is the key to happiness” (Dewey 2010, p. 308). Results from the previous project on curriculum research mentioned herein indicate that guidance from experienced vocational professionals, as well as opportunities for authentic work experience early in the school-based programme, are important for students’ decision-making. Early work life practice is necessary to give the students a basic understanding of what a vocation is about and to understand its purpose (Hiim, 2013). From a pragmatic perspective, work life practice is the centre of the curriculum that all subjects, disciplines, and concepts must be clearly related to. Dreyfus and Dreyfus (1986) as well as Schön (1983, 1988) strongly emphasize realistic professional tasks as the core of professional and vocational curriculum. This means that cooperation between school and work life is a main principle in relevant VET curricula.

Dreyfus and Dreyfus’ competence model can help in clarifying stages of progression in practical vocational tasks from simple to more complex situations, gradually demanding independent responsibility. Both Dreyfus and Dreyfus (1986) and Schön (1983) argue that variation in tasks, situations, and examples is crucial for the students’ opportunities to develop robust vocational concepts, and should be encouraged in the curriculum. Variation is necessary to see similarities and differences between concepts and learn to use them adequately. The importance of problem-framing as well as discussions of different perspectives on vocational challenges is also emphasized by the authors. Problem-framing and discussion should be related to different explanations and different theories concerning the actual problem, as well as to students’ former experiences. The aim is for students to learn that vocational situations and problems can be ambiguous, and that there may be many ways of understanding the challenges.

Schön (1983, 1988) is especially concerned with the importance of verbal reflection in the development of professional knowledge. A reflective practicum is a place: a school workshop or a workplace where students have opportunities and room to experiment with, reflect on, explain, and discuss realistic work performance under safe conditions. A reflective practicum is a place to investigate and research vocational practice individually and collectively, in order to develop individual and collective multidimensional vocational knowledge.
The results of the epistemological analyses indicate that a relevant curriculum in VET is a curriculum where authentic work practice is the centre, and that all content is related to and integrated with that centre. In Norwegian VET, this would suggest a move towards stronger possibilities for students to choose and specialize in a vocation quite early. Within the 2 + 2 model, regular placement periods in vocational firms that are systematically planned, followed up on, and worked on afterwards at school seems crucial. School subjects should be related systematically to, and integrated with, work practice, and assessment forms must allow and stimulate the expression of multidimensional vocational knowledge.

Empirical research in our project will be inspired by the epistemological analyses and principles that have been presented in this article. The aim is to find out more about how different stakeholders experience the curriculum, and how a more relevant curriculum can be developed in different programs. Curriculum research in VET is limited, and there is a need for more research in this field. I hope that the epistemological perspectives in this article can also inspire other researchers.
References


Biographical Note

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Supporting Vocational Students’ Development of Preventive Behaviour at Work: A Phenomenological Analysis of Teachers’ Experiences

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Abstract: Statistics indicate that even if young workers complete vocational training, as a group they are at risk of sustaining injury. It appears that a lack of training in the area of injury prevention may explain some of this effect. Teachers are considered to be key actors in injury-prevention training and in the process of developing students’ preventive behaviour at work, but little is known about the reality. The objective of this study was to understand how teachers experience their activities in support of students’ development of injury-prevention behaviour at work. Semi-structured interviews were conducted with eleven teachers from four different vocational training programs. The content of the interviews was then examined using phenomenological analysis. Results show representations participants form of occupational health and safety, of injury-prevention behaviour and of their roles as teachers in relation to prevention. A closer look at these roles reveals the daily challenges teachers encounter. Among other things, there seems to be a lack of continuity in the training process, insufficient pedagogical resources and resistance on the students’ part. Results offer an insight into teachers’ experience with their part in the support of vocational students’ development of injury-preventing behaviour. It appears they recognize having to play an active role in the development of injury-preventing behaviour at work among students, but have to face daily challenges affecting their teaching. Results of this study can serve as a starting point to make improvements to the injury-prevention training offered in vocational training centres.

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1 Introduction

Statistics indicate that young workers are a group at risk of sustaining injury, even if they completed a vocational training (Girard, Doyon, Gilbert, Legris, & Laliberté, 2006; Ledoux & Laberge, 2006; Thivierge, 2002; Turner, Tucker, & Kelloway, 2015). In fact, youth aged 15 to 24 are proportionally more often victims of an injury at work than their older colleagues (Breslin, Koehoorn, Smith, & Manno, 2003; Ledoux & Laberge, 2006; Salminen, 2004). In America, it is estimated that the frequency rate of occupational injuries among workers aged from 15 to 24 is 5.8%, while it is of 3.7% among older workers (Hébert, Gervais, Duguay, Champoux, & Massicotte, 2003). In Europe, the risk of work accidents among young workers is 25% to 40% higher in comparison with other age groups (Schneider, 2007). This higher risk to have a work injury for young workers could be related to the fact that these workers often have several organizational (eg. irregular hours, low pay) or physical (eg. repetitive work, heavy lifting) constraints in their jobs, compared to older age employees (Gervais, Massicotte, & Champoux, 2006; Ledoux & Laberge, 2006; Zierold & Anderson, 2006). In addition to a lack of work experience (Breslin et al., 2003; Laberge, 2008; Passmore, Odnoda, Paine, & Mohamed, 1991; Tétreault, 1994), the lack of training in terms of prevention is also reported as a factor influencing the frequency of work-related injuries or illnesses of youth (Laberge, Maceachern, & Calvet, 2014; Ledoux et al., 2008; Moreau, Angora, & Michel, 2013; Moscato et al., 2011). In this sense, training related to prevention provided by employers to young workers is often scarce (Ledoux, Laberge, & Thuilier, 2015), low, or at least uneven between organizations (Smith & Mustard, 2007). Moreover, the quality of such training is not reported in the literature (Breslin, Morassaei, Wood, & Mustard, 2011; Zierold & Anderson, 2006). It also appears that training related to prevention offered in vocational training centres seems insufficient and difficult to transfer when entering employment (Chatigny & Desmarais, 2015). In fact, some authors reported that this training poorly prepares students to face the challenges of prevention they will experience in the labour market (Frigul & Thébaud-Mony, 2010) or that learning made at school is only mobilized a little in work situations (Moreau et al., 2013). Training is an important antecedent in the development of preventive behaviour at work, which is considered a significant determinant of success in terms of prevention (Lecours & Therriault, 2016b; Roy, Cadieux, Forter, & Leclerc, 2008). It is then important to understand where the gaps are.

However, only few studies have attended to understand factors explaining weaknesses in prevention training offered in vocational training centres. It seems that although some government initiatives offer guidance tracks, no standard or policy is intended to standardize and structure the teachings of prevention in vocational programs, which leads to an inequality between different programs and vocational training centres in terms of available resources (human, financial, material and time) for training related to prevention (Chatigny, Nadon-Vézina, Riel, Couture, & Hastey, 2012; Pisaniello et al., 2013). Scientific literature recognizes the central role that teachers play regarding the support to students’ development of preventive behaviour at work (Chatigny et al., 2012; Hubert, Ulrich, Lindner, & Murphy, 2003; Kaskutas et al., 2010; Moreau
et al., 2013; Pisaniello et al., 2013), but it seems they face challenges in their daily activities (Chatigny et al., 2012; Moreau et al., 2013; Pisaniello et al., 2013; Schooley, 2012). Among others, it appears that the responsibility for the quality of training in prevention is not shared between the different actors of the education system, but mainly relegated to teachers (Chatigny & Desmarais, 2015; Moreau et al., 2013; Passmore et al., 1991; Pisaniello et al., 2013). Defining course contents and teaching methods are based almost exclusively on their willingness and skills, which can create pressure on teachers as they often find themselves alone to bear the responsibility for teaching about prevention. Little information is currently available on the reality experienced by teachers of vocational training about their activities related to prevention and the few studies that have addressed this subject are mainly exploratory. As teachers are considered key actors in the development process of students’ preventive behaviour at work (Andersson, Gunnarsson, & Rosén, 2015; Chatigny et al., 2012; Hubert et al., 2003; Kaskutas et al., 2010; Moreau et al., 2013; Hofman, Stalder, Tschan & Hfeli, 2014), it is important to get an in-depth understanding of their reality in order to define the starting point to identify improvements required to make the training more effective. This article presents the results of a study that painted the portrait of the teachers’ reality related to the support to students’ development of preventive behaviour at work.

2 Theoretical Background

2.1 Context of Vocational Training

In the Canadian province of Quebec, training for a skilled or semi-skilled occupation is primarily offered in near of 200 vocational training centres. For the 2013-2014 academic year, 129 348 students were registered in one of the programs offered (Gouvernement du Québec, 2015). These training programs are offered on a full-time basis and the duration of study is relatively short, ranging from 600 to 1,800 hours. These courses are offered to students from the age of 15. However, the clientele in vocational training has a significant diversity in terms of student profiles. The clientele consists of minors coming directly from general high schools, but also of adults who have experienced periods of employment, education, or inactivity (Berbaoui, 2015; Chatigny & Desmarais, 2015). Students aged 24 and under represent 55% of the population, while those over 30 years of age represent 30% of the clientele (Gouvernement du Québec, 2010). Very young people (under the age of 20) would represent only 17% of the vocational students (MELS & MESRST, 2012). More than 60% of young students (24 years or younger) have a high school diploma upon entering vocational training, while only 40% of older students (25 years and older) have graduated. Vocational students consists of 56% of men (MELS & MESRST, 2012). The organization of studies in vocational training is entirely oriented towards learning the trade. There is no general education. In addition, the curriculum is divided into multiple training modules for the development of specific skills. The duration of these modules varies between 15 and 135 hours of training. Many programs, but not all, include a module dedicated to education about prevention of work-related injuries or illnesses. However, this module is, for most study programs, generic and not
specific to the occupation taught (Chatigny & Desmarais, 2015). This module, when present, is usually given very early in the curriculum and has between 15 and 30 hours of instruction. Notions on the legislative framework for health and safety are addressed as well as risks to health or safety related to the occupation (Girard et al., 2006). Less frequently, working methods and skills to prevent these risks can be taught (Girard et al., 2006).

A little more than 10,000 teachers worked in Quebec’s vocational training centres in 2009-2010. Many of them (76.1%) have a precarious employment status and work at an hourly (or per lesson) rate or on a contract basis. They are mostly male, with an average age of 45.2 years (Gouvernement du Québec, 2012). Most of the teachers in vocational training centres are professionals in their field who decided to turn to teaching to transmit their knowledge or to live new challenges sometimes after a long career in their respective profession (Balleux, 2006). Although they are skilled at their occupation, few of them have received prior training to develop their teaching abilities (Moreau et al., 2013), and even less are trained to teach prevention. Only after they have been hired do they undertake university studies in vocational education if they wish to be granted tenure (Balleux, 2006; Gouvernement du Québec, 2001; Loignon, 2006). Since 2003, a bachelor’s degree in vocational education is a requirement for tenure status. One distinguishing trait of the teaching context in vocational training centres is the expediency or urgency with which teaching resources are hired. Indeed, studies indicate that a large number of these teachers are hired a few days before their first lesson (Balleux, 2006; Chatigny et al., 2012; Gouvernement du Québec, 2012; Loignon, 2006). Hence, preparation time is short considering the content that must be covered.

2.2 Definition of Preventive Behaviour at Work

Recognized as a determinant of success in prevention of work-related injuries or illnesses (Roy et al., 2008), preventive behaviour is a predominant concept to develop among students to train young workers involved toward prevention. A recent study (Lecours & Therriault, 2016b) highlighted the five attributes that define the concept of preventive behaviour at work, which are:

1) Compliance with safety rules and procedures;
2) Proactivity, participation, engagement and initiatives related to prevention;
3) Maintenance of the physical environment;
4) Concern for the social environment and;
5) Reflexivity and analytical skills of work situations.

Preventive behaviour at work is a complex concept that is formed of multiple attributes that interact together. Therefore, each of the attributes have to be developed among vocational students. Among others, the concept of preventive behaviour goes beyond
compliance with the rules and procedures (attribute #1) and participation in prevention activities (attributes #2) (Griffin & Neal, 2000; Hayes, Perandan, Snecko, & Trask, 1998; Marchand, Simard, Carpentier-Roy, & Ouellet, 1998). In fact, it asks the worker to think about prevention consistently, analyzing work situations before engaging into them and be on the lookout for risks. Preventive behaviour at work also requires worker to mobilize appropriate knowledge to engage in work activities without putting his health or safety at risk. Reflexivity and cognitive skills are thus required (attribute #5) (Cossette, 2003; Garrigou, Peeters, Jackson, Sagory, & Carballera, 2004; Ouellet & Vézina, 2008). Also, communication with the social environment (attribute #4) is an important characteristic of preventive behaviour at work. In fact, multiple studies reported the importance of teamwork, mutual assistance and consultation with colleagues or supervisors as manifestations of preventive behaviour (Burke, Sarpy, Tesluk, & Smith-Crowe, 2002; Cigularov, Chen, & Rosecrance, 2010; Fugas, Silva, & Meliá, 2011; Hayes et al., 1998; Hofmann, Morgeson, & Gerras, 2003; Marchand et al., 1998). Finally, attention paid to physical environment, including cleanliness of work station and maintenance of equipment, is part of the preventive behaviour (attribute #3) (Andriessen, 1978; Burke et al., 2002; Hayes et al., 1998; Lecours & Therriault, 2016a; Marchand et al., 1998).

As preventive behaviour at work expresses observable and measurable actions that students can take to protect their own health and safety and that of their colleagues, it is then important for teachers to support and reinforce the development of the five attributes in their daily activities.

Although literature allows to understand the importance of teachers in terms of preventive education for students, little is known about their lived reality. To improve the quality of prevention training during vocational studies regarding students’ development of the five attributes of preventive behaviour at work, a question remains: What is the experience lived by the key actors that are the teachers with regard to the support of vocational students’ development of preventive behaviour at work? This article attempts to fill this gap in the state of knowledge.

3 Objective

The objective of this study was to understand how teachers experience their activities in support to students’ development of preventive behaviour at work.

4 Method

4.1 Research Design

In order to understand the processes involved in teaching activities in support to students’ development of preventive behaviour at work, a phenomenological qualitative design was followed (Fortin, 2010; Giorgi, 2009; O’Reilly & Cara, 2015). A phenomenological design allows to describe the experience to be studied, namely the support to students’ development of preventive behaviour at work, from the point of view of the
population involved, namely teachers. This design allows the use of the significance that give people to their experiences to interpret and understand a lived experience. In fact, phenomenological design is interested in thoughts, impressions, feelings, interpretations, understandings and representations of participants (Broomé, 2011). This design is particularly useful for subjects studied little (Fortin, 2010), as it is the case in this study. Also, phenomenological design allows to describe the structure of a phenomenon, so that it can be understood in a deeper, holistic and comprehensive manner (Broomé, 2011).

4.2 Participants

Participants were teachers in vocational training. To be included in the study, participants had to meet the following criteria:

1. to have at least two years of experience as a teacher in vocational training;
2. to speak and to understand French;
3. to be engaged in one of targeted vocational programs, which were cooking, secretarial, hairstyling, automated systems electromechanical (ASE), located in two vocational training centres in the province of Quebec, Canada.

Study programs were identified in collaboration with the research team, the school principals and the intervener in youth prevention of the Commission for health and safety in the Canadian province of Quebec based on their different realities (e.g. number of hours allocated to the teaching of prevention, available resources) in order to represent the diversity of the teachers’ reality. This concern for the diversification of participants is desired in the phenomenological design to collect divergent discourses and enrich the description of the phenomenon (Lincoln & Guba, 1985; O’Reilly & Cara, 2015). Teachers responsible of the module on prevention as well as teachers who have never specifically taught this training module were recruited in order to obtain a variety of experiences. No participant who was contacted declined to participate.

4.3 Data Collection

Individual, semi-structured interviews with open questions (e.g. How prevention is taught in your study program? or How do you define preventive behaviour at work?) were conducted with the participants. The aim was to collect information on their daily reality which pertains to the support to students’ development of preventive behaviour. The interview framework has been validated with a pre-test method; its content and clarity were verified with two teachers from two vocational training centres, and modified and tested anew with another teacher before being used to gather information for this project. Interviews were recorded with digital audio, and the same framework was used for every participant. The preset order of questions was not methodic and could vary depending on the participants to allow for individual ways of structuring thoughts. The meetings lasted 45 to 90 minutes, were conducted in French and took place at the
vocational training centres where participants work. After the ninth interview, responses started to become repetitive and little new information was founded, indicating saturation of content (Corbin & Strauss, 2008). Due to the specificity of the subject, this was not unexpected. For this reason, after all participants who were initially contacted to participate in the study have completed the interviews, recruitment ended.

4.4 Analysis

A phenomenological analysis as described by Giorgi was used to analyze the data (Giorgi, 1997, 2009). The primary goal of phenomenological analysis is to derive meaning units from the raw data in order to capture the experience of participants, namely teachers, related to a phenomenon, namely the support to vocational students’ development of preventive behaviour at work. After all interviews have been transcribed into verbatim, the corpus of data was analysed through the five-step process of the phenomenological analysis proposed by Giorgi (2009). First, a reading of the entire set of data was done in order to get a sense of the whole. Second, multiple other readings allowed to identify meaning units and to assign them a code. Open coding was favoured because of the inductive approach used. Units represented passages of discourse based on their meaning and relevance to the objective of exploring teachers’ experience toward the support to students’ development of preventive behaviour at work. The QSR NVivo 10 software was used to support the analysis. The third step was the transformation of meaning units into expressions that were revealing of the experience of participants. The fourth step allowed to synthetise a general structure of the comprehension of the phenomenon based on participants’ experiences. Finally, the fifth step was used to refine the structure in order to clarify and interpret data related to participants’ experience of the phenomenon. Several round trips between the raw interview data and the general structure allowed to fine-tune the analysis process. In order to improve validity of the analysis process, a second researcher verified the meaning units identified, the codes assigned and the structure generated. Inter-rater agreement has been verified periodically through out the analysis process. After three rounds of coding, an inter-rater agreement has been found on more than 90 % of the meaning units identified and codes assigned. Also, when both researchers agreed that the structure generated allowed for a comprehension of the phenomenon according to participants’ experience, a validation of the final results have been conducted with participants themselves. That final step ensured the representativness of the results obtained (Mukamurera, Lacourse, & Couturier, 2006).

4.5 Ethics

The participants freely and voluntarily agreed to take part in the study, and no incentive was offered. This project was approved by the Université du Québec à Trois-Rivières’ Comité d’éthique de la recherche avec des êtres humains [Ethics Committee for Research Involving Human Subjects] (CER-14-208-07.02).
5 RESULTS

This section details characteristics of the study participants and categories that emerged from the analysis process. It is possible to delineate three categories of representation teachers have of 1) occupational health and safety (OHS), of 2) preventive behaviour, and of 3) their roles as teachers. From these roles, three types of challenges teachers face on a daily basis were founded, which concern a) the teaching continuum, b) the available resources and c) the students’ resistance to prevention education. Figure 1 illustrates the results obtained.

5.1 Participants

Eleven teachers from four study programs in two different vocational training centres participated in the study and completed the interview. Table 1 lists their main characteristics.

Table 1: Descriptive characteristics of participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Age</th>
<th>Gender*</th>
<th>Study programs</th>
<th>Number of years of teaching experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>61</td>
<td>F</td>
<td>ASE</td>
<td>18</td>
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<tr>
<td>2</td>
<td>37</td>
<td>F</td>
<td>cooking</td>
<td>10</td>
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<tr>
<td>3</td>
<td>53</td>
<td>M</td>
<td>cooking</td>
<td>20</td>
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<tr>
<td>4</td>
<td>47</td>
<td>M</td>
<td>cooking</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>55</td>
<td>M</td>
<td>hairstyling</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>58</td>
<td>M</td>
<td>hairstyling</td>
<td>13</td>
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<tr>
<td>7</td>
<td>49</td>
<td>F</td>
<td>hairstyling</td>
<td>15</td>
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<tr>
<td>8</td>
<td>33</td>
<td>F</td>
<td>hairstyling</td>
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<td>9</td>
<td>34</td>
<td>F</td>
<td>hairstyling</td>
<td>12</td>
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<tr>
<td>10</td>
<td>69</td>
<td>F</td>
<td>secretarial</td>
<td>19</td>
</tr>
<tr>
<td>11</td>
<td>58</td>
<td>F</td>
<td>secretarial</td>
<td>21</td>
</tr>
</tbody>
</table>

* F = female, M = male

5.2 Representations

Analyses enabled to identify three types of representation that participants form, which are: I) representations of OHS; II) representations of preventive behaviour; III) representations of the teacher’s role in relation with prevention. Table 2 shows the principal
representations discussed by participants according to their study programs.

Table 2: Representations reported by participants of the different study programs

<table>
<thead>
<tr>
<th></th>
<th>ASE</th>
<th>Cooking</th>
<th>Hairstyling</th>
<th>Secretarial</th>
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<tbody>
<tr>
<td><strong>I. Representations of OHS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSH includes clients’ safety</td>
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<tr>
<td>OSH includes hygiene and sanitation</td>
<td>x</td>
<td>x</td>
<td></td>
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<tr>
<td>OSH is a collective responsibility</td>
<td>x</td>
<td></td>
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<tr>
<td>OSH is an individual responsibility</td>
<td>x</td>
<td>x</td>
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<tr>
<td><strong>II. Representations of preventive behaviour</strong></td>
<td></td>
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<tr>
<td>Preventive behaviour is the application of prescribed rules and procedures</td>
<td>x</td>
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<tr>
<td>Preventive behaviour is to adopt appropriate habits and work postures</td>
<td>x</td>
<td>x</td>
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<td>x</td>
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<tr>
<td>Preventive behaviour is to properly adapt the workplace and to have an appropriate use of work equipment</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Preventive behaviour is to know how to analyze the tasks to identify the hazards and risks</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
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<tr>
<td><strong>III. Representations of the teacher’s role in relation with prevention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Avoid classroom injury</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
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<tr>
<td>Be a model, set an example</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Educate to the adoption of safe behaviour and to the importance of prevention</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Ensure a safe environment</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Teach good working methods and assist students in their application</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Teach to identify hazards</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
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<tr>
<td>Remind rules and correct individual behaviours</td>
<td></td>
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<td>x</td>
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</table>

1) Representations of OHS
First of all, there is a semantic shift in the definition of OHS, with OHS getting confused with concerns for client safety, as evidenced in the following excerpts from the transcript: “It involves the health and safety of students, but also of clients. . . . For example, we explain how to style hair without burning the client,” and “For the practical exam, they
[the students] have to style a client’s hair. So we watch how they handle a hairdryer and curling iron, which can be harmful because it can burn the client.”

A semantic shift was also detected in the representations of OHS with participants in the cooking program, who mix OHS with hygiene and sanitation. One participant mentioned, “We also get into the hygiene and sanitation aspect, with the floors and all. We kind of throw that all in together.”

Results also showed that the representation of the responsibility of OSH is different across study programs. Participants in the cooking program were the only ones who discussed OHS as being a collective rather than an individual responsibility. One participant explained the importance of teamwork in safe work practices:

You have to be mindful of other people. There can be dangers, not necessarily just for a given student, but also for the other people around him. While working, students walk around with knives, and there’s a way of doing things, a proper procedure. Maybe the worker won’t hurt himself, but other people around him [could get hurt]... You have to follow procedures. For example, there’s a way to place pots on a hot plate, and it’s important as much for the person working as it is for the others around him.

This representation of OHS as a collective responsibility was not evoked by participants in other programs, who mostly feel that OHS is an individual responsibility to comply with the rules. For example, a secretarial program participant said, speaking of her interactions with a student who was not properly seated on his chair: “As long as you’re going to hold you like this, you’re gonna have trouble.” Another participant of this study program added, always referring to a discussion with a student who did not adopt a suitable working posture: “If you ever want to pick up with back pain, continue to sit like that because you will go straight there.”

II) Representations of preventive behaviour

Participants in three programs (cooking, hairstyling and secretarial) defined preventive behaviour as the proper adjustment of the work station and work equipment as well as the adoption of appropriate work habits and safe postures. The appropriate use of work equipment is a representation shared by several participants. A participant of the cooking program illustrated: “It can be dangerous to use work equipment in a way they [the students] don’t know. I tell them always to ask when they don’t know how to work with an equipment. Don’t improvise.” A participant of the hairstyling program illustrated, in reference to examples of appropriate work habits in his work: “For me, gloves are very important. It is inconceivable to work with bleach without set gloves.” Also, for participants in ASE, cooking and secretarial, preventive behaviour also involves knowing how to analyze situations, to discern the risks and thus be able to correct them. The following participant’s thoughts clearly illustrate this representation:

1Sentences in quotes correspond to excerpts of transcripts of interviews with teachers who participated in the study. These transcripts were translated from French into English for this publication.
Ultimately, the goal is to have a little warning bell that goes off in every situation. That is to say, they [the students] have to be able to say, ‘Wait a minute, this situation is dangerous,’ or, ‘This is not right.’ It has to be second nature. You look at a machine with its safety guard missing, and you have to notice it right away. You need to be able to spot the dangers.

III) Representations of the teacher’s role in relation with prevention

Participants in all four study programs consider that when it comes to support students’ development of preventive behaviour at work, one of their primary roles is to teach students good working habits and the importance of prevention in work activities. One participant spoke of being a “sensitizing agent” when it comes to prevention and wanting students to become “multiplying agents” for their peers.

According to participants in the cooking and hairstyling programs, they fill the role of being a model and exemplar for students in terms of prevention as well as the role of conveying proper work methods and assisting students in their application. The latter role is shared by teachers in all programs.

One role omnipresent among the participants in three programs, namely, cooking, hairstyling and secretarial programs, is that of providing frequent reminders of prevention rules and correcting behaviour that can result in injury. In this regard, one participant explained,

Whenever I see something that is not right, I have to say something right away and not wait. I can’t let it slide even if I have already told the student three times. There are some [students] who need to be told six times before the message is understood.

Participants in only one program (secretarial) alluded to the role of offering students a safe working environment and the teacher’s responsibility of preventing injuries from taking place in class.

5.3 Challenges

Analyses enabled to define and group challenges participants encounter in their roles related to students’ development of preventive behaviour at work into three categories concerning: a) the prevention teaching continuum in the training program, b) the available resources and c) the students’ resistance to prevention education. Table 3 shows the challenges identified by the participants.

Table 3: Challenges related to teacher’s roles reported by participants of the different study programs
a. Challenges due to the prevention teaching continuum

One of the first challenges touched upon is the place given to prevention in the program. The matter of fact is that the topic is not officially part of the secretarial program according to government guidelines, so the integration of prevention concepts is entirely of the vocational training centre’s initiative. That being said, participants said that without a proper time slot, there is just too little time to cover the topic. They decided to fit some prevention elements into an early module, but it is the only time students receive any formal training on the subject. One participant explained the challenge this lack of time poses: “Our way of managing it was to really integrate it. We did not have to, it takes up a lot of time, and time is the real problem here.”

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<th>ASE</th>
<th>Cooking</th>
<th>Hairstyling</th>
<th>Secretarial</th>
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<tbody>
<tr>
<td><strong>a. Challenges due to the prevention teaching continuum</strong></td>
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<tr>
<td>Inequality in prevention education according to courses and teachers</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lack of knowledge about prevention</td>
<td>x</td>
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<tr>
<td>Lack of time for prevention education</td>
<td></td>
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<tr>
<td>Little monitoring of prevention in internships</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Preventive behaviour is not an official topic in the curriculum</td>
<td></td>
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<tr>
<td><strong>b. Challenges due to the resources available</strong></td>
<td></td>
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<tr>
<td>Lack of educational material</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
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<tr>
<td>Lack of financial means to purchase equipment</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
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<tr>
<td>Lack of support from OSH Committee of the institution</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lack of training received related to the prevention education</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
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<tr>
<td><strong>c. Challenges due to students’ resistance to prevention education</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Addictions of students</td>
<td>x</td>
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<td></td>
<td></td>
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<tr>
<td>High number of students per group</td>
<td></td>
<td></td>
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<td>x</td>
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<tr>
<td>Preventive behaviour is the first to be neglected under stress compared to technical skills</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Students are hard to raise awareness of the importance of prevention</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>The experiences in the profession-related workplaces negatively affect student attitudes regarding prevention</td>
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</table>
It is a completely different reality for the teacher in ASE, where instruction on prevention teaching is overseen by a sectorial organization devoted to prevention and safety in the construction industry. In this context, the participant stated that a specific training is required for everyone who teaches the 30-hour course on general health and safety on job sites. This participant therefore has a teaching manual and various tools. Furthermore, every module of the curriculum begins with a lesson on applicable prevention measures. This participant did not talk about any challenges pertaining to the prevention teaching continuum.

In hairstyling, participants spoke of discrepancies with other classes and colleagues’ teachings. The following participant elaborated on the challenges caused by these discrepancies:

Maybe I stress it more because I teach it [the module on prevention]. As soon as I see something wrong in the workshop, I correct the student. They [the other teachers] do it too, but less ‘by the book,’ perhaps. I’m even annoying when it comes to prevention . . . . I don’t know if my colleagues dwell on it as much. We need to have everyone putting the same things into practice. If I teach something but they [the students] don’t have any examples, or the other teachers don’t do it, students will think they have to do certain things in front of Mr. So-and-so but not in other classes.

These discrepancies in teaching could stem from a challenge another participant in the hairstyling program pointed out, namely, a lack of knowledge related to prevention: “I don’t really know what competency in OHS entails because I have never taught it.”

The last issue with the teaching continuity, which was raised by participants in three of the four programs, is the minimal concern for prevention in practicum settings. This makes it hard to ensure continuity and coherence from an educational standpoint. In the secretarial program, for instance, the participant responsible for internships has this to say:

I oversee internships and visit all of the businesses. I would say that it’s seriously not a top priority. I even find it absurd, because I see students at work stations that are completely ill-adapted and inadequate. They don’t even have anything to prop up a sheet of paper. There is a huge deficiency among businesses. It’s pretty flagrant.

A participant in hairstyling makes a similar observation: “I once did the practicum visits, and I didn’t get the feeling that prevention play much of a role in the workplace reality.”

b) Challenges due to the available resources

One of the most frequently cited challenges is participants’ lack of training in teaching prevention. All participants indicated having received no training on the subject during their university studies in vocational education (they all possess a vocational teaching certificate, the mandatory diploma before 2003), and only one spoke of receiving continuing training to teach prevention. One participant in the hairstyling program said lack of training can impede teaching by making it difficult to discuss the topic in any real
There is no doubt that I would like to know what to tell students who always want to know more. For example, ‘What can happen when my wrist is like this (in full flexion)?’ I don’t know if it causes tendinitis or carpal tunnel, so I answer, ‘It’s just not good.’ I wish I could tell them what can really happen.

The same participant talked about needing more training:

If there were experts professionally qualified in OHS to pass on just a bit of those skills, I think it would be good. Or, on our end, we could take regular refresher courses. It would be great to have someone who could help us brush up on the subject.

In the cooking program, another participant said insufficient prevention training directly impacts one’s teaching:

When it comes to posture, I don’t have much information to offer. Of course, we talk about posture, about standing correctly, being upright at your work station and so on. We adapt the work station to the student’s height, but sometimes we have some students who are 1.49 m and others who are 1.89 m, and we don’t really know what to do for posture. Should we get a small bench to stand on or stack up boards on the table? We adapt as best we can, but we don’t have a lot of information on the matter.

According to a participant in the secretarial program, the lack of financial means poses a challenge to teaching of prevention, because it is hard to adjust work stations without the necessary materials.

Another obstacle to teaching of prevention is the want of pedagogical materials. In both cooking and secretarial programs, participants have no training manual to help teach prevention. The content of their lessons comes mostly from a slide presentation created by a government organization that oversees prevention and fact sheets on how the program’s cooking equipment works. Although the hairstyling program does have a manual, it does not meet all of their needs, as one person explained:

Sure, the module shows us all the OHS procedures for the workplace, but it’s not very elaborated. It’s very basic, and not necessarily geared toward hairstyling. Most of it has to do with work postures. It’s really very basic.

Lastly, the participants in the hairstyling program reported having little support from their centre’s OHS committee. “Yes, we have an OHS committee here at the school. Unfortunately, it doesn’t have much to do with us. The committee is more concerned with machines. Because we deal with cosmetic products, there is nothing dangerous in our program.” This foremost task of ensuring that equipment meets standards was
described by nearly all participants as being the lone role their OHS committee plays, thereby demonstrating that they know little about the resources the committee can offer them.

The analysis of the transcript of the teacher in ASE revealed that unlike the other participants, this person does not attribute any challenges to a scarcity of resources. The participant spoke of receiving training and having access to teaching tools, while also relating the active role played by the OHS committee in the vocational training centre and all its study programs.

c) Challenges due to students’ resistance to prevention education
Participants all agreed that making their students aware of the significance of prevention is an ongoing struggle. Students’ young age and lack of life experience are a common explanation for this difficulty, as the following participant explained:

The younger students have no life experience outside having worked at [fast food restaurant chain]; it is hard to get to them. I like to draw a parallel with all the ad campaigns about safe driving. We repeat it ad nauseam, yet there are about 40 deaths [among young drivers] every year. They seem unreachable. It’s as if bad things only happen to other people. It’s very hard to get through to them and make them understand.

Teachers in the secretarial program also blamed the challenge of raising awareness among students on the fact that knowledge of prevention does not factor into the certification of studies. This participant put it as follows:

I think the greatest obstacle is a lack of interest. They [the students] don’t see the importance, and it’s not part of the program. Modules that are part of the program and needed to get the vocational diploma are all that matter to students. Anything beyond that often gets neglected.

Another participant in this program agreed, saying, “Sometimes, we get the impression they [the students] have the information and hit the ‘eject’ button because it will not be asked on the exam. I don’t get the sense that it matters much to them. I really don’t.”

In cooking, three participants considered that current or past work experience has a negative influence on the importance students give to prevention, and teachers must constantly fight the less than edifying view of prevention in the restaurant industry, as reflected by this participant: “It is difficult because many of our students already work in the restaurant industry, and it [prevention] is really neglected. We have a lot of work to do to convince them that it is important.”

Others stated that one of the challenges they observe with students is the prioritization of competencies, since they note that in times of stress, preventive behaviour is neglected compared to technical skills. One excerpt from a participant in the hairstyling program illustrates this assessment:
It is certainly not easy for them [the students], since they are in the learning process and have a lot to think about. First, they have to be comfortable with the client. Then, they have to use the proper techniques. So having the right posture is secondary.

Another participant expanded on this point with an example from the cooking program:

We also tell them [the students], from the very beginning, ‘Don’t leave your knives in the sink.’ But it still happens. They’ll be in the dining room, feeling stressed. They want to save time. So they leave a knife in the sink. And then maybe another student happens by and puts his hand in the sink and cuts himself. When they are stressed, they sometimes take shortcuts when it comes to OHS.

Finally, the large number of students in each group and students who attend class while under the influence of drugs constitute daily challenges for teachers. Figure 1 illustrates the representations and challenges described by the participants.

Figure 1: Mapping of representations and challenges expressed by participants

6 Discussion

The study presented in this article has provided an insight into teachers’ experience of activities in support to students’ development of preventive behaviour at work. Analyses
allowed to identify three types of representation, from which emerged three different categories of challenges faced by teachers.

6.1 Representations

It is interesting to note that the discourse of participants allows to understand that teachers are trying to develop most of the attributes of the concept of preventive behaviour at work among their students. In fact, the different representations participants form of OHS, preventive behaviour or of their roles as teachers refer to attributes of the concept of preventive behaviour. First, most of the participants consider the importance of the application of rules and procedures, as well as the adoption of appropriate habits, which may be related to the attribute of compliance with safety rules and procedures (attribute #1) of the concept of preventive behaviour at work, as described earlier (Lecours & Therriault, 2016b). Participants explored this attribute in their representation of preventive behaviour, but also in their roles as a teacher who has to support students’ development of preventive behaviour at work.

Moreover, most participants described the importance taken to the adaptation of the work station and the appropriate use of work equipment, which may be related to the attribute of the maintenance of the physical environment (attribute #3).

The attribute #4 referring to the concern for social environment is also highlighted by participants of the cooking program in their representation of the OSH as a collective responsibility. This attribute was thus not present in the discourse of participants from other study programs. It is true that among the four study programs taking part in this research, the cooking program is the one that prepares students for an occupation that requires the most collaboration. In the other programs, colleagues tend to work more parallel to each other without a production line or dependence on each other’s activities.

A last attribute of the concept of preventive behaviour may be extracted from the discourse of participants; it is the attribute #5 related to the reflexivity and analytical skills of work situations. This characteristic is considered as a representation of the preventive behaviour at work by several participants, but is considered as a role by only one. Interestingly, it appears that teachers recognize the importance of reflexivity and analytical skills of work situations to develop preventive behaviour, but only one assigned a role to teachers in supporting students deal with this attribute. As it has been shown that strict compliance with safety regulations and cautious behaviour has little impact on the occurrence of work-related injuries and illnesses (Simard & Marchand, 1997), it is important to work on developing vocational students’ ability to express all of the attributes of the concept, including the capacity to assess work situations in order to mobilize the appropriate knowledge (Dejours, 1987; Simard & Marchand, 1997). Training in this sense should be offered to teachers.

Attribute #2 on the proactivity, participation, engagement and initiatives related to safety at work was not mentioned in the discourse of participants. Teachers did not mention that this feature could be part of their representation of prevention. This could be related to the stage of future workers. Indeed, students learning a trade are in a listening posture, assimilation of information and adjustment. They are probably
not yet advanced enough in learning their occupation to propose initiatives, changes or to demand. However, results of a recent study suggested that self-advocacy regarding safety at work, including leadership skills, would gain to be promoted in school settings in order to enable young workers to be active regarding prevention in the workplace (Chin et al., 2010).

6.2 Challenges

Participants encounter several major challenges in their roles of support to students’ development of preventive behaviour at work; foremost among them are the absence of training and scarcity of pedagogical tools. They all say the same thing, namely, that they received no instruction on teaching prevention during the university studies in vocational education they were required to complete. This is consistent with a recent Australian study, in which the teachers surveyed deem their lack of prevention training hinders their ability to teach the subject (Pisaniello et al., 2013). This deficiency in teachers’ training might explain the different interpretations certain participants have of OHS, especially those who mix notions of OHS with hygiene and sanitation or OHS with customer safety. This semantic shift had also been reported in an anterior study (Chatigny et al., 2012). One of the resources teachers can turn to for support in their role related to prevention is their institution’s OHS committee. However, teachers seem to believe that the committee’s sole purpose is to see to upgrading equipment. This is in line with a government priority in terms of prevention in vocational training centres which stipulates that the material, equipment and environment must meet recognized prevention standards (Gouvernement du Québec, 2005). This same conclusion was reached in an earlier study, which stated that improving material and equipment was a priority until 2013, and programs preparing students for “high risk” occupations (e.g. construction) were at the top of the list (Chatigny & Riel, 2014). It seems that work needs to be done with institutions’ OHS committees so they can support teachers in other priorities of action, such as integrating the teaching of prevention into the entire vocational training process. As teachers are key actors in prevention training of students (European agency for safety and health at work, 2006), it is particularly important to implement the means to support them.

Results also display a marked diversity in the different study programs’ realities in terms of the importance given to prevention in their teachings and pedagogical resources available. In the secretarial program, ministry specifications do not contain any requirements as to the learning of prevention and, therefore, does not set aside any time for teaching and evaluating this topic. The participating vocational training centre’s syllabus includes certain prevention notions out of a personal initiative, but teachers perceive this initiative is taking time away from other topics required for the diploma. This time constraint relative to prevention education is consistent with results of other studies (Pisaniello et al., 2013). The situation in ASE is completely different. Education to prevention is a foremost concern in the program, due in equal part to the wishes of the government, vocational training centre and teachers. The fact that the prevention teaching module is overseen by a sectorial organization means teachers have
access to ongoing training and pedagogical tools on which to base their lessons. Teachers themselves note the disparities in support given to different programs. Teachers in the hairstyling and secretarial programs say they feel that since their work presents a lower risk of injuries than the more gruelling occupations, they receive less support in their efforts to support students’ development of preventive behaviour at work. This discrepancy in time and resources allotted for the teaching of prevention among the different study programs is reported in other Canadian (Chatigny et al., 2012) and international (Pisaniello et al., 2013) texts as well. This could be explained, in part, by the fact that the current teachings on prevention in educational settings depend greatly on the will of teachers (Andersson et al., 2015; Chatigny & Desmarais, 2015; Laberge et al., 2012; Moreau et al., 2013; Passmore et al., 1991; Pisaniello et al., 2013; Schulte, Stephenson, & Okun, 2005). These often bear sole responsibility for developing preventive behaviour of students.

With regard to students’ development of preventive behaviour at work, practicums offer little follow-up on what is being taught in vocational training centres, as it has been found in previous studies (Chatigny et al., 2012; Moreau et al., 2013). This presents another considerable challenge for teachers, who must diligently strive to show the importance of preventive behaviour that is downplayed in practicum environments. Considering that workers build their professional identity by assimilating every work-related experience (Gohier et al., 2001) - positive and negative – the dichotomy in the message communicated to students as to the significance of prevention can have negative repercussions on how they internalize the value of prevention. Greater synergy between the school and practicum settings would be beneficial. To this end, the government would have to issue clear guidelines.

Finally, all of the teachers refer to challenges arising from the difficulty of making students grasp the importance of prevention, which is consistent with other recently published texts (Pisaniello et al., 2013). They perceive students as being “unreachable” or as displaying “wishful thinking” that workplace injuries and occupational diseases cannot happen to them. As attitudes and beliefs about prevention have been found to be significantly related to the explanation of behaviour among youth (Blair, Seo, Torabi, & Kaldahl, 2004; Crowe, 1995), this is an important concern to address. Many teachers attribute attitude of students toward prevention to a lack of life experience. Some add that students who have experienced or witnessed a situation in which a worker has suffered an accident or work-related illness better understand the importance of prevention teachings and become more receptive. This fits in with literature suggesting that people are more likely to engage in preventive actions and develop preventive behaviour at work if they have experienced emotions that prompt a greater level of awareness (Cossette, 2013). In the same vein, the concept analysis of preventive behaviour revealed that the motivation, as part of the human affectivity, is an important antecedent of the behaviour (Lecours & Therriault, 2016b). Considering that many vocational students have only just entered adulthood and have little work experience, it is recommended that prevention training given during vocational studies be used to illicit these emotions that lead to a greater awareness to favour the development of preventive behaviour at work.
6.3 Limitations of this Study

The principal limitation of this study is the small sample. Only eleven teachers and two vocational training centres took part in the study. Even if saturation of content appeared to be reached and that programs were rigorously selected to reflect the different realities, it would be beneficial to lead similar research on a larger scale. In fact, this study reflects the reality of vocational teachers in one province of Canada. Results may have been different in other Canadian areas or in other countries. Moreover, the uneven number of participants from each study program may have influenced the conclusions drawn from the findings. Finally, all participants had completed the university certificate in vocational education, which was the mandatory diploma before 2003. Maybe results would have been different if the study had been conducted with participants who completed the bachelor’s degree. However, given the innovative aspect of this study on a little explored subject and the rigorous phenomenological analysis process, the scope of the results remains interesting.

7 Conclusion

This study has given an insight of how teachers experience their activities related to support to students’ development of preventive behaviour at work. Results enabled to report representations they form of OHS, of preventive behaviour and of their roles as teachers in relation with prevention. These roles then allowed to identify the challenges they face daily. Among others, we found a disparity in the importance given to teaching prevention from one program to another, a lack of continuity throughout the training curriculum, a lack of training and pedagogical tools available as well as a students’ resistance to the teachings offered. Since teachers are key actors for vocational students’ development of preventive behaviour, it is important to suggest solutions for the challenges presented herein. The results of this study can serve as a starting point to make improvements to the prevention training offered in vocational training centres.
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Developing Schemas for Assessing Social Competences among Unskilled Young People

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Abstract: Social competences are crucial parts of vocational education and training (VET) competences. As part of a development project preparing unskilled young people for VET, an action research project was conducted with the aim of developing a schema for assessing and grading social competences. The development included defining the social competences as well as three levels for assessing these competences. The schema was developed in cooperation with the assessors, i.e., representatives from workplaces, municipal youth guidance centres, and VET colleges. There were two main findings. First, the definitions of the competences and the levels for assessing the competences are related to the context in which the competences should be developed. Second, even though the definitions should be related to the specific contexts, to be manageable they should not be too elaborate. The aim of the project being to develop a schema that practitioners in general can use for assessing young peoples’ social competences in relation to work-based training, the study concludes that further research is needed to clarify whether the schema can be used without instruction or training.

Keywords: VET, Vocational Education and Training, Assessment, Social Competence, Workplace-based Training, Young Unskilled People, Action Research

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1 Introduction

In educational policy and educational research competence has been a vital concept for the last twenty years. At a policy level OECD has defined nine key competences within the following three categories: ‘using tools interactively’, ‘interacting in heterogeneous groups’ and ‘acting autonomously’ (OECD, 2005). In a European lifelong learning context, eight competences have been outlined: ‘communication in mother tongue, communication in foreign languages’, ‘mathematical and technological competence’, ‘digital competence’, ‘learning to learn’, ‘social competence’, ‘innovative competence’ and ‘cultural awareness’ (European Communities, 2007).

In relation to the labour market and to vocational education and training, CEDEFOP has analysed the need for competences. One of the key conclusions from this analysis is:

Social and personal competences are especially important in assessments for management positions, in promotion and succession planning, and with employees who have direct client contact. Overall, notably social competences have become more significant in firms’ employee assessments over the past few years (CEDEFOP, 2014, pp. 19-20).

Despite the great political interest in key competences, learning in informal and non-formal settings, and the need for assessing prior learning, only limited research have been conducted about assessing competences obtained in informal settings. In this article we focus on assessment of social competences. Social competences, which will be defined below, constitute a central element in the total competence-landscape as well as in workplace-based learning and vocational education and training (VET). Focusing on social competence in the learning process includes assessing social competence which requires adequate assessment methods to be developed.

Below we describe how methods for assessing social competences were developed in an action research project. The project was related to an ongoing programme, ‘Job with an educational perspective’, the aim of which was to motivate and qualify unskilled young people to enrol in a VET programme via six months of work-based training. The young people’s work experience is obtained within trades and industries where they are able to visualize themselves as future employees, e.g. as assistant chefs, kindergarten assistants, shop assistants, or car mechanics. In order to encourage the young people’s participation in education, three dialogue meetings were held with the young people over the course of the training period. The aim of these dialogue meetings was to assess the young people’s technical and social competences. The idea is that explaining to the young people how their competences are developing through the work-based training will encourage them for improving their performance in the workplace and eventually for enrolling in a VET programme. In order to secure a systematic and encouraging assessment the dialogues should be based on filling out schemas for assessing technical and social competences.

A schema is a tool for assessing competences. In the left column of the schema the various competences are listed vertically; horizontally three competence levels are listed. The practitioners fill out the schema based on assessing at which level the young person
performs in relation to each of the competences. The aim of the action research project was to develop schemas that are useful for the practitioners. A schema was drafted for the technical competences for each of the trades and industries whereas the schema for the social competences should be applicable across the various industries and trades. In this article we solely focus on the development of the schema for assessing the young persons’ social competences.

2 The Concept of ‘Competence’

To assess a competence it is necessary to have a precise and comprehensive definition of the concept of competence. The meaning of ‘competence’ has been discussed within a wide variety of contexts, applying different theoretical approaches, including behaviouristic, generic, and cognitive approaches (Mulder, Weigel, & Collins, 2007, pp. 69-70). Eraut defines competence as ‘the ability to perform the task and the roles required to the expected standard’, and adds that competence is always related to a specific context, a particular job or category of job. However, a person does not only possess specific competences. A person possesses a capability, defined as ‘everything a person can think or do, given an appropriate context for demonstration of it’ (Eraut, 1998, p. 135). Ellström defines the concept in a workplace setting as ‘the capacity of an individual to successfully handle certain situations or complete a certain task or job’ (Ellström & Koch, 2008, p. 6). Mulder defines competence as the capability to reach specific achievements. Furthermore, he distinguishes between competences and competencies. Competencies are capabilities, capacities, or potentials and can be understood as characteristics of persons (Mulder, 2001, p. 152) while competence is the integrated set of capabilities (or competencies), consisting of knowledge, skills, and attitudes, enabling the person to function effectively in a particular profession, organization, job, role, and situation (Mulder, Guliikers, Biemans, & Wesselink, 2009, p. 757). We agree with Mulder; however in this article we merely use the concept of competence.

Mulder et al. analyse the use of the concept of competence in vocational education and training in a European context. They conclude that ”assessment of competences, especially in work situations, is a labour-intensive and time-consuming exercise” and warn against ”competence being formulated in terms that are too general, which means that they have no discriminative power in assessments” (pp. 81-82).

Under the headline ‘What Is Competence?’ Le Deist and Winterton analyse the use of the concept in the USA, the UK, France, and Germany based on a number of research studies. Not surprisingly, they state that the approach to the concept is multi-dimensional and holistic. Based on their analysis, they construct a typology of competence that should be useful in a vocational context. This typology consists of cognitive competences, functional competences, social competences, and meta-competences (Le Deist & Winterton, 2007, p. 38).

In line with the considerations above, we define competence as the ability to perform required tasks and roles to the expected standard in a specific context.
As stated above, in this article we focus on social competences, leading to the question: what is meant by social competence?

3 The Concept of ‘Social Competence’

A literature study concerning the definition of the concept of social competence shows that the concept can be defined and categorized in various ways.

In the typology of competence mentioned above, social competence is defined as ”the willingness and ability to experience and shape relationships, to identify and understand benefits and tensions, and to interact with others in a rational and conscientious way, including the development of social responsibility and solidarity” (Le Deist & Winterton, 2007, p. 38).

In the Handbook of Social and Emotional Learning, social and emotional competences have been divided into five competences: ‘self-awareness’, ‘self-management’, ‘social awareness’, ‘relational skills’, and ‘decision making’. Furthermore, six tools have been outlined for assessing social and emotional competences within formal educational settings (Denham, 2015, pp. 287-293).

In the Handbook of Competence and Motivation, social competences related to work are listed as ‘enterprising’, ‘social interest’, ‘extraversion’, ‘social potency’, and ‘well-being’. The concepts are not elaborated in relation to the work situation, and, under the headline ‘assessment’, the Handbook summarizes that ”the research on the personality determinants of work competences has not made much theoretical progress” (Kanfer & Ackerman, 2005, pp. 342-343).

In a study in the health sector about assessment of ‘communication’ in relation to physician-patient communication, this competence was divided into seven sub-competences: ‘establishes support’, ‘opens discussion’, ‘gathers information’, ‘understands patient’s perspective of illness’, ‘shares information’, ‘reaches agreement on problems and plans’, and ‘provides closure’. These competences were further divided into sub-sub-competences; e.g. the competence ‘shares information’ was divided into ‘uses language patient can understand’, ‘checks for understanding’, and ‘encourages questions’. Apart from being an example of rather detailed descriptions the study shows the need to relate the definitions closely to the specific context (Schirmer et al., 2005, p. 185).

In a study similar to the one described in this article, young people’s competences were divided into social competences, personal competences, and methodological competences. Social competence was divided into three sub-competences: ‘ability to cooperate’, ‘ability to face conflicts’, and ‘ability to communicate’ (Frey, Balzer, & Ruppert, 2014, pp. 5-7).

In a literature study seeking to clarify the concept of ‘social competence’, the authors conclude that ”we did not find any instruments in the literature which were suitable for measuring social competence as an educational goal in the broadest sense. . . . What is considered to be socially competent depends on the context” (Dam & Volman, 2007, pp. 293-294).
Developing Schemas for Assessing Social Competences

Based on the studies above, we conclude that essential and recurring elements in social competences are communication, cooperation, and social responsibility. We have analysed how these competences feature in the learning outcome descriptions in the Danish national curricula for VET programmes (see Undervisnings Ministeriet, 2015). Learning outcome descriptions were studied for four VET programmes relevant to the work experience of the participating young people: the programmes for ‘car mechanic’, ‘chef’, ‘sales assistant’, and ‘social and healthcare assistant’. Based on the analysis of the four learning outcome descriptions, the research project has focused on developing five categories of social competence, each of them divided into sub-competences. Below, these categories of competence are defined as they were in the final draft of the schema.

Social competence in a workplace setting is the ability to perform social tasks and roles in relation to:

1. **Communication**, meaning to listen to others, to express oneself clearly, and to signal positivity, including the following sub-competences:
   a) Is able to receive feedback from manager on one’s job performance and demonstrate the ability to give feedback.
   b) Is able to receive feedback from colleagues on job performance and demonstrate the ability to give feedback.
   c) Is able to listen to and speak with users (e.g. customers/citizens/children/parents).

2. **Cooperation**, meaning to participate in social relations in order to realize own and others’ needs, including the following sub-competences:
   a) Is able to work in accordance with the supervisor’s guidelines.
   b) Is able to cooperate with colleagues in performing tasks.
   c) Is able to participate in the workplace community.

3. **Responsibility**, meaning to take responsibility in relation to the job and the tasks involved, including the following sub-competences:
   a) Is able to meet on time.
   b) Is able to meet standards of reliability.
   c) Is able to complete tasks and do not leave a task half-done.

4. **Independence**, meaning to manage and accomplish work tasks based on own experience and obtained knowledge, including the following sub-competences:
   a) Is able to work independently based on instructions and guidance.
   b) Is able to perform based on own strengths and weaknesses.
   c) Is able to take initiatives in relation to solving tasks.
5. **Social understanding**, meaning understanding different ways of performing and behaving, including the following sub-competences:

   a) Is able to accept that there are different ways to act and perform.
   
   b) Is able to accept that others can have different attitudes and values.

The definitions and elaborations of the competences should meet the following four requirements:

1. They should be useful for clarifying the development of the young person’s competences over time.

2. They should be immediately understandable, relevant, and applicable for the assessors (i.e. the representatives from the workplaces, from the municipal guidance centres, and from the VET colleges), and they should be useful for assessing young unskilled workers. ‘Immediately’ means that the assessors should be able to use the schema without previous training.

3. They should ensure the validity and reliability of the assessment: the assessors should have a mutual understanding of the meaning of the competences. The assessments should cover the young person’s abilities and they should not depend on the individual assessor.

### 4 Assessment of Competence

The principles and methods for assessing competence are not new (Walklin, 1991). Assessment has been discussed in relation to teaching and the teacher’s role (Klenowski & Wyatt-Smith, 2014) and, more specifically, in relation to higher education (Boud & Falchikov, 2007). In a vocational and adult learning context, competence assessment has been analysed in a critical perspective (Eccleston, 2010). Most of the literature has focused on assessment in relation to education and training programmes. Reviewing articles published in the journal ‘Assessment in Education: Principles, Policy and Practice’ within the last five years clearly illustrates this tendency. Almost all the articles deal with assessment in relation to learning outcomes from school-based education. Moreover, the focus is on assessing ‘knowledge’ and ‘skills’ rather than ‘competences’, knowledge and skills being the concepts used in the curricula of the educational programmes. An example from one of the few articles about vocational education and training illustrates this tendency:

During the skills demonstration, the student carries out practical tasks in a workplace or at an educational institution or in another working life situation and thus demonstrates how well he or she has attained the goals and the vocational skills required in working life. The content of the demonstration has to correspond to the national requirements of qualification (core curricula) (Räisänen & Räkköläinen, 2014, p. 113).
A review on clinical competence assessment in nursing concludes that ‘some assessment strategies have been developed and tested’. The reported strategies are tests, self-assessment instruments and portfolios related to the clinical practice (Yanhua & Watson, 2011, p. 835). Analysing the concept of nurses’ holistic competences, a study concludes that assessment of nurse competences should take place in a natural or near natural setting required for the job and must be based on actions; furthermore that written assessment instruments only tell part of the story (namely the amount of knowledge) (Garside & Nhachena, 2013, p. 544). A systematic review on competence assessment of ‘procedural skills’ in the health sector concludes that ‘simulators’ are valuable for continuous assessment (Ekkelenkamp, Kock, de Man, & Kuipers, 2016).

Validating and assessing non-formal and informal learning has been highlighted as a consequence of the increasing interest for learning outside the classroom. The CEDEFOP study, mentioned above, includes mapping and analysis of the use of validation instruments for competence assessment in European companies. Based on data from more than 400 companies, the study informs about the different assessment methods used in the companies, concluding that, in general, competence assessment has become more important and that an increasing number of companies have improved and developed their assessment tools (CEDEFOP, 2014, p. 48-58). In a follow-up report from CEDEFOP, six ”tools for extracting evidence” have been described: tests and examinations, dialogue, declarative methods, observations, simulations, and evidence extracted from practice (CEDEFOP, 2015, pp. 46-49). Only a minor part of the first report discusses how to ensure quality in the assessment procedure, and none of the reports address the problems related to assessing competences.

The interest in non-formal and informal learning has entailed a focus on the assessment of prior learning, which means assessment of the sum of all the individual’s competences. Assessment of prior learning and the associated difficulties have been analysed and described in the research literature. Most of this literature deals with the organizational process (Harris, Breier, & Wihak, 2011) and the various ways of validating prior learning (Halttunen, Koivisto, & Billet, 2014). Only few research-based results concern the challenges related to the assessment processes authors (Aarkrog & Wahlgren, 2015).

Competence acquisition outside the classroom has been described in some studies. These studies mainly deal with the learning process and are less concerned with the problems associated with the assessment process. The themes concentrate on the acquisition of competences outside the formal educational system, e.g. in the workplace (Zegwaard, Coll, & Hodges, 2003), as part of in-service training (Alqawi & Ezzeldin, 2015), in relation to teachers’ professional development (Dumitriu, Dumitriu, & Timofti, 2014), or as a particular teaching method in a university context (Bezanilla et al., 2014).

Much research has been conducted in relation to assessing knowledge, skills, and competences obtained in formal education. However, there has been little research on the assessment process in relation to social competences outside the classroom. Thus there seems to be a need for developing methods that can assess the social competences obtained through performing in real-world workplace situations.

As a consequence, in this article we focus on the assessment of social competences from
a workplace perspective. We focus on developing an instrument (a schema) which can be used by non-professional assessors to assess competences developed in a workplace context. The research question “How can social competences be assessed in a workplace setting?” includes two sub-research questions:

- How can social competences be defined in a workplace setting?
- How can social competences be graded with a high degree of validity and reliability?

## 5 The Research Method

As stated above the aim of the research project was to develop a method for assessing social competences that would be useful for the practitioners, i.e. assessors of social competences in relation to work performance. The development of the schema included definitions of the content of social competences as well as of the levels of the competences. In order to secure that the schema would be useful for the assessors, the development should be based on a dialogue with the assessors. Therefore the project was conducted as an action research project, in which the researchers and the assessors met regularly to develop, try out, and revise the content of the method (Cohen, Manion, & Morrison, 2011, p. 18). The underlying idea was that the assessors – together and in dialogue with the researchers – ‘produce theory through a reflective examination of their practice, thus simultaneously achieving progress in their practice’ (Papastephanou, 2014, p. 178). Using a concept from Donald Schö"on the assessors were ‘reflective practitioners’ in the project (Schö"on, 1983) and reflected continuously on the way they used the assessment instrument.

During the research period, three versions of schema for assessing social competences were drafted, tried out, and revised, concluding in a final version in spring 2016. The development of the schema included the following activities:

1. Meetings with the assessors in order to discuss their understandings of the social competences as well as of the different levels of the social competences.
2. The assessors tested the schema during their dialogues with the young people. The researchers made observations of selected dialogues.
3. The researchers interviewed the assessors about their experiences with employing the schema.
4. Based on the observations and interviews, the researchers drafted a new version of the schema.
Steps 2–4 were repeated for versions 2 and 3 of the schema. As can be seen above, the data collection included observations and interviews, more specifically:

- Five observations of the assessors’ use of the schema in relation to the dialogues with the young people. The purpose of the observations was to clarify the extent to which the assessors and the young people were able to understand and react relevantly to the formulations of respectively the competences and the three levels in the schema. Notes were taken throughout the observations the focus being on how the assessors and the young people explained and understood the competences and the competence levels. The length of each observation corresponded to the duration of each of the dialogues, i.e. 0.5–1 hour.

- 29 semi-structured interviews have been conducted, the purpose of which was to learn about the assessors’ experiences in assessing competences: How did the assessors understand the definitions of the competences respectively the three levels, and how did they – based on experiences with using the schema – develop the definitions of the social competences and the three levels? Were they able to distinguish the various competences in the schema? Which examples from the workplaces could be used to support the definition of the competences? How did the assessors explain and exemplify the content of the different competences to the young people? Related to the definition of the three levels: According to which criteria did the assessors refer the individual competences to a specific level?

The 29 interviews included interviews with:

- twelve representatives from the workplaces, i.e. four interviews within each of the three main vocational fields: technical VET, commercial VET, and social and health care VET.

- three representatives from the municipal guidance centres who were each interviewed three times in relation to a new draft of each of the three schemes.

- four teachers from the VET colleges who were interviewed twice in relation to the first and second drafts of the schema.

All interviews were based on the same set of questions, including that the informants should give examples that could illustrate their perceptions of the competences and their criteria for assessing the level of the competences. The interviews took 1-2 hours each, and central passages were transcribed.

The analysis of the data from the observations and interviews focused on how the assessors – based on experiences with using the schema – developed their understandings and definitions of the five social competences mentioned above. Likewise it was analysed how the assessors developed their understandings and definitions of the three levels for assessing the competences. It was analysed in which ways the assessors shared the same understandings or differed in their understandings (Cohen et al., 2011, p. 29).
6 Results

The development of the definitions of the social competences has involved a division of each of the competences into sub-competences. The following findings are based on the experiences derived from developing these sub-competences.

The analysis of the empirical data focus on the following two issues:

- How do the assessors develop their understandings and definitions of the five social competences?
- How do the assessors develop their understandings and definitions of three levels for assessing the competences?

6.1 The Development of the Assessors’ Understandings and Definitions of Social Competences

The development of the understandings and definitions of the social competences has led to two findings:

1. In order to be useful for assessing in specific contexts, the competences must be defined in relation to these contexts.

2. In order to be useful for assessing the definitions should not be too detailed.

Concerning the first finding, table 1 shows the development of the sub-competences for the competence ‘communication’. The definitions in table 1 also show that the semantic focus in relation to the competences was altered during the development, becoming more specifically related to the purpose of the project, the purpose being to assess competences that are developed during workplace-based training and that are important for the young persons’ development. The understanding of the competence ‘communication’ changed from focusing on the ability to talk and perform to the ability to receive and give feedback, feedback being considered by the assessors to be the core of the young person’s communication with managers and colleagues. In this line of argumentation, ‘perform personally in a correct and sure way’ has been removed as interviews with the assessors showed that this sub-competence was not relevant for assessing the central elements of ‘communication’ in relation to the young people.

The dialogues with the assessors showed that the definitions should be idiomatic and everyday-like in order to be usable. Definitions that include actions were perceived as closer to the activities in the workplaces and it was easier to assess a competence when the assessors could visualize situations in which the young person might use it. This can be illustrated in the following example of the development of the definition of one of the sub-competences of ‘responsibility’. In the first draft, the sub-competence was formulated in this way: ‘Complete tasks in a satisfying manner.’ In the final schema the corresponding formulation is: ‘Complete tasks and do not leave a task half-done.’ ‘Not leave a task half-done’ provides an interpretation of ‘satisfying manner’. The adjective
‘satisfying’ has been altered to a situation that is easier to visualize in the workplace, where completing tasks is first priority.

Table 1: Three versions of defining the sub-competences of ‘communication’

<table>
<thead>
<tr>
<th>Competence</th>
<th>First draft of schema</th>
<th>Second draft of schema</th>
<th>Final draft of schema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>1. Good at talking with colleagues and manager.</td>
<td>1. Communicate with colleagues and manager.</td>
<td>1. Is able to receive feedback from manager on one’s job performance and demonstrate the ability to give feedback.</td>
</tr>
<tr>
<td></td>
<td>2. Good at talking with customers.</td>
<td>Explanation: is able to talk with colleagues and managers about the work in a constructive way. Is able to receive feedback on job performance and is able to pose questions and report back.</td>
<td>2. Is able to receive feedback from colleagues on one’s job performance and demonstrate the ability to give feedback.</td>
</tr>
<tr>
<td></td>
<td>3. Perform personally in a correct and sure way.</td>
<td>2. Communicate with users (customers/participants).</td>
<td>3. Is able to listen to and speak with users (e.g. customers/citizens/children/parents).</td>
</tr>
<tr>
<td></td>
<td>Explanation: is able to talk with users about the work in a constructive and forthcoming manner. Is able to receive comments concerning job performance and is capable of answering the users questions.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The development towards formulations that are relatively close to work situations reflects the purpose of the assessments. It is important for the assessors to help the young person to visualize situations in which he or she might use or develop the competence: "As a supervisor you should help the young person to visualize situations that makes the young person understand the competence, i.e. examples and illustrations of the practice the young person is part of" (interview with a teacher). In the dialogues with the young people the competences should be contextualized in order to be useful.
Another example of the significance of visualizing practice can be illustrated from the development of one of the sub-competences of ‘communication’ (table 1). The interviews with the assessors within the social and health care sector showed that they associated the phrase ‘Good at talking with customers’ with the sales programmes, and that they did not perceive it to be useful in relation to the social and health care sector. ‘Communication’ is a central and more complex competence within the social and health programmes than within the technical programmes. Consequently, the assessors within social and health care argued that the young people should be assessed on their ability to - for example - differentiate communication in relation to different kinds of users. Thus changing ‘customers’ in the first draft of the schema into ‘users (customers/participants)’ in the second draft did not meet the needs within the social and health care sector and was further differentiated as appears in the final schema: ‘Listen to and speak with users (e.g. customers/citizens/children/parents)’.

The current context also influences the number of sub-competences. Looking at table 1, this can be illustrated by comparing the three versions of the first sub-competence of ‘communication’. The development from drafts 1 and 2 to the final schema shows a need for distinguishing between ‘communicate with a manager’ and ‘communicate with colleagues’, cf. table 1. Thus one of the sub-competences has been split into two. This amendment is a result of trying out the schema in the dialogues with the young people, the experience being that the young person, while good at communicating with colleagues, may not necessarily be good at communicating with the manager.

The second finding concerns the degree of detail in the definitions of the competences. Even though the results above indicate that it was important for the assessors to relate the competences to actions and performances in a workplace, the descriptions could also be too detailed to be useful across the different occupations, trades or industries. A comparison of the three versions of the sub-competences in table 1 shows that in the second draft particular emphasis has been placed on elaborating, i.e. ‘explaining’ the sub-competences. In the second draft the sub-competences, such as ‘Communicate with colleagues and manager’, were explained in relatively more detail than in the first draft. In the second draft the ambition was to strengthen the validity and reliability of the assessment by including more aspects of the communication with the managers: ‘constructive way’, ‘feedback’ and the ability to ‘pose questions’ and ‘report back’. The idea was that these elaborations would support the assessment process, guiding the assessors to look for the specific characteristics of communication.

However, the relatively detailed explanations turned out not to have the expected effect. The explanations did not lead to a greater clarification of the competences and consequently did not improve the assessors’ mutual understanding of the competences, nor their ability to assess them. According to the assessors, the explanations complicated the assessment, as more words were introduced. Too many words made the definitions unwieldy. Furthermore, some of the explanations referred too much to specific trades or industries meaning that the assessors had to translate the explanations to their ”own” trades or industries. A comparison of the second draft and the final schema shows that a reduction of words was needed and only the concept ‘feedback’ survived.

Based on the findings, the general lesson to be learnt from developing the definitions
of the competences is that the definitions move from being general and non-contextual to become more specific and contextualized. However, the descriptions should not be so detailed and contextualized that they cannot be translated to different trades, industries, workplaces etc.

6.2 The Development of the Assessors’ Understandings and Definitions of Three Levels for Assessing the Competences

As mentioned above, the development of the young persons’ competences took place in three dialogue meetings during the six months of workplace training. Drafting a useful scale for describing this development presented us with two issues: the number of levels and the wording of these levels.

At the first meeting with the assessors it was decided that the competences should be assessed at three levels. A three level scale makes completing the schema manageable while allowing assessors to indicate development, whether to the better or to the worse. The wordings of the levels in the scale have been based on the following three criteria:

1. They should be positive.
2. They should show a progression.
3. They should be idiomatic.

The development of the scale has resulted in the following two findings:

The first finding is that the scale depends on the standards for the assessment. A distinction between objective and subjective standards turned out to be relevant in the project. Objective standard means that the person is assessed in relation to external and predefined standards; e.g., standards formulated in the curricula for the VET programmes. Subjective standard means that the person is assessed in relation to his or her previous performances.

Table 2 shows two of the scales developed in the project illustrating the objective standard and the subjective standard respectively. The objective standard was based on what could be expected from a ‘normal’ worker in this occupation or in the actual workplace. The subjective standard was based on assessment of the how well the individual young person performed over time compared with the initial level.

Table 2: Scale for assessment based on, respectively, objective and subjective standards

<table>
<thead>
<tr>
<th>Assessment based on:</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective standard</td>
<td>Okay</td>
<td>Good</td>
<td>Very good</td>
</tr>
<tr>
<td>Subjective standard</td>
<td>Beginner</td>
<td>Trained</td>
<td>Experienced</td>
</tr>
</tbody>
</table>
The change from objective standards to subjective standards was based on the results from the interviews with the assessors, in which the general view was that the purpose of filling in the schema was to encourage the young person: "Perhaps it is not so important at which competence level the young people are; the important thing is that they have progressed" (teacher from a VET college); "the schema has been proven to motivate the young people; they experience that they are progressing, and they also realize if they have to improve, e.g. if they have slackened in terms of meeting on time" (representative from a municipal guidance centre); "when the young person studies the ticks in the schema, it strengthens her self-confidence" (employer). The function of the schema has changed from being a tool for assessing and awarding credits to being a tool for guidance: The schema is used for guidance, e.g. "you (addressing the young person) ought to develop your ability to take initiative to accomplish a work task, e.g. initiate play" (representative from a municipal guidance centre about a young person training in a kindergarten).

The purpose being to motivate the young people, it was important that the assessors could tick off one of the levels in the scale. The interviews and observations showed that the wordings at level 1 sometimes meant that the young person could not even qualify for a tick at the lowest level. Thus, in relation to the competence ‘To be able to meet on time’, some of the young people could not be characterized as ‘Okay’, because they had not yet managed to turn up at the workplace on time. The formulation ‘Beginner’ proved to be the most acceptable, the argument being that a person can always be defined as a beginner as this does not indicate whether he or she can actually perform.

The second finding is that the assessors assess the level of social competences in relation to specific work tasks or work situations. One of the aims in the interviews was to make the assessors explain their principles for referring a person to a specific level. Below, an assessor’s example deals with operationalizing the three levels of the competence ‘independence’.

The example shows that the competence is assessed in relation to accomplishing work tasks or performing in situations in the workplace, in this case a kindergarten:

- Beginner: The young person is able to provide food for the children and is able to handle simple conflicts, e.g.: ‘please remove your feet from the table’!

- Trained: The young person is seated among the quieter children, providing food for the children while at the same time reacting to various situations at the table, such as table manners, whether the children drink and eat sufficiently, conflicts among the children etc.

- Experienced: the young person can accomplish the tasks that are included in a meal, i.e. providing food for the children, attending to the children’s table manners, taking care that the children drink and eat sufficiently, and solving conflicts including all children within the group.

By taking an example from a situation in the kindergarten, the assessor shows that the situation can involve few or rather many tasks, and that the tasks can be more or less
complicated. Thus the competence ‘act responsibly’ can be graded according to the number and type of tasks in a typical situation.

Summing up, the development of the scale has shown that the wordings of the levels depend on the purpose of the assessment. In this case the purpose was to show the young person that he or she is progressing. This resulted in a change from objective standards to subjective standards. Furthermore, the assessment of the level of social competences is made in relation to accomplishing specific tasks or performing in specific situations within specific workplaces, occupations, trades or industries. Therefore, the levels are not general; rather they should be understood in relation to specific contexts.

7 Discussion and Limitations

Juxtaposing the results from developing the schema with results from other studies about assessment of social competences, the following limitations and issues for discussion should be raised.

The first issue is to which degree social competences are context-bound: is it possible to find general and context-independent dimensions in these competences and in the assessment procedures? Or should we conclude that “...what is considered to be socially competent depends on the context”? (Dam & Volman, 2007, p. 294). The development of the schema for assessing social competences has shown that these competences are closely related to the specific person’s ability to act in a specific context, meaning that the assessment of a person’s social competences will most easily be conducted, or can perhaps only be conducted, in relation to the specific context. Our data shows that the assessors based their definitions of the levels of the competences on specific examples from the work situations they encountered. In the examples of the competence ‘act independently’, the assessors related the general competence to a specific task or situation within the occupational field or within the current workplace. The context related understanding of the schema limits the possibility of using the schema to assess social competences in general. However, the data also shows that different assessors from different occupational fields were all able to understand and use the definition of for example ‘act independently’. The development of the schema illustrates that it is important that general terms such as ‘users’ are exemplified in relation to the specific occupation as ‘customers, citizens, children, parents’. However, with these adjustments it was possible to construct an assessment instrument - in this case a schema - that allows assessors to assess social competences across different vocational sectors.

The second issue concerns the degree of elaboration of the competences in the schema. In the second version of the schema the sub-competences were formulated in a relatively lengthy manner, including explanations. These elaborations were meant to contextualize the competences by describing typical activities in the workplace and in that way guide the assessor to the elements of practice that they should take into consideration in their assessments. However, the elaborations meant that the assessors actually had too many elements to take into consideration, complicating the assessment. Discussing experiences with competence-based assessment in a vocational setting, Alison Wolf highlights the
same issue. She cautions against overly specialized descriptions of the competences and too many detailed requirements (Wolf, 2001). David Pepper, discussing how to assess key competences, likewise concludes: “...the challenge is specifying key competences in sufficient detail to plan and assess learning - but not with so much prescription that the process of developing competences is reduced to a series of procedural tasks...” (Pepper, 2011, p. 341).

A report from CEDEFOP highlights the issue in relation to assessment in small companies: "Several interviewed experts note that often in small-sized companies it does not pay to use sophisticated and expensive assessment systems. Assessment procedures should not be overelaborated and too complex as the additional cost would outweigh the benefit” (CEDEFOP, 2014, p. 69).

A literature review on the assessment of key competences also cautions that "over-specification of learning outcomes should be avoided” (European Commission, 2012). Based on the findings from our and other studies, we conclude that written elaborations of the sub-competences do not improve the quality of the assessment; on the contrary.

The third issue concerns the assessors’ qualifications. The idea was to develop a schema that practitioners can understand and use without instruction or training. However, a number of studies emphasize the need to train the assessors (CEDEFOP, 2015, p. 32; European Commission, 2014, p. 42). In the current project the assessors have not been trained as assessors. Even so, they were able to understand and use the schema. The most likely explanation is that the assessors were actually trained through their participation in developing the schema, which included interviews with them about their procedures for assessment and their perceptions of the definitions of the competences. If one can argue that the assessors were trained, albeit informally, and if the assessment of in particular social competences is closely linked to contexts with which these assessors are familiar, further research is needed in order to conclude whether the schema can be understood and used without further introduction or training.

Finally, the study has been accomplished as a research project, meaning that ‘its claim to validity lies in the dialectic relationships among the epistemological frames of the participants’ (McTaggart, 2014, p. 463). The results depend on whether the researchers and the practical participants share a sufficient insight in the assessment process. It could be argued that a limitation of the study is that the findings are too closely related to the assessors ‘epistemological frames’.

8 Conclusion and Perspectives

Much of the individual’s total competence is obtained outside the educational system in informal leaning contexts. Currently there is focus on the acquisition of competences and learning in workplaces and an increasing awareness of the importance of social competences in relation to workplace-based learning and vocational education and training. This includes a focus on the assessment of these competences and consequently on developing assessment methods. Based on the experiences from developing a schema for assessing social competences, the following conclusions can be drawn.
The understanding of competence and the assessment of these competences is related to the context in which the competence has been developed. Even generic competences like social competences are related to the context in which the competences should be used. A person is not socially competent at a general level; a person is more or less socially competent in relation to a specific context.

Likewise, assessors operationalize the levels of competence by referring to specific tasks or situations in the workplace. The assessors assessed the levels of the identified social competences, not at a general level, but in relation to the way the person performed and found solutions to work-related problems.

The development of the schema reflects that the assessors’ understanding and assessment of the competences depends on the current context. Thus the definitions of the competences have developed from being general and context-independent to being context-dependent and more closely connected to the tasks and situations in the workplaces. In the final version of the schema, the definitions reflect that the important activities in a workplace concern the accomplishment of work tasks and performing in work situations. Furthermore, the definitions have developed to reflect the needs of the target group, i.e. young people who, through work-based training, should become more motivated to enrol in a VET programme. The definitions of the competences should enable the young person to recognize or visualize the situations in which the competences are relevant, and the levels should be adequate for assessing the young person against his or her individual level of performance. However, the definitions should not be too detailed and lengthy, as too many details blur and confuse the focus of the assessment. In the schema, a balance has been sought to secure context-specific definitions that are not too detailed. The litmus test is whether assessors who have not participated in the development of the schema are able to use the schema without previous training.

Assessment of competences is an integral part of the individual’s development of competences, having an educational function. The results of the assessment were used to guide dialogues with the young people. These dialogues contain a systematic review of what has been learned and what could be improved and have a motivational effect on the young person.

In a further perspective, the study raises three issues:

- Assessment of social competences in a workplace setting provides opportunities for guidance to improve the learning process.

- The process of developing tools for assessing social competences clarifies the specific content of these competences in a particular context.

- Through developing methods for assessing social competences, the importance of these competences is highlighted.
References


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Entrepreneurship Education at Indian Industrial Training Institutes – A Case Study of the Prescribed, Adopted and Enacted Curriculum in and around Bangalore

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Abstract: On the one hand, India is a growing economy that needs skilled labour, self-employed entrepreneurs and employees to tackle its economic and social challenges. On the other hand, India faces high unemployment rates, especially among young people. Graduates from industrial training institutes (ITIs) in particular are often facing difficulties in pursuing self-employment. Entrepreneurship education is an essential element in preparing young people for self-employment. This paper analyses how and to what extent entrepreneurship education has been conceived and implemented in vocational schools in and around Bangalore to face these challenges. Methodologically the authors use a three-step approach following the theories of a ‘prescribed’, ‘adopted’ or ‘enacted’ curriculum. Qualitative interviews are used for the analysis of the adopted and enacted curriculum. The authors conclude that whereas the prescribed curriculum includes several elements of entrepreneurship education and teacher’s understanding is in line with the prescription, the understanding is seldom translated into input in the day-to-day teaching. The plausible reasons for this gap are discussed in this paper.

Keywords: VET, Vocational Education and Training, Entrepreneurship Education, India, Prescribed Curriculum, Enacted Curriculum, Industrial Training Centers, Industrial Training Institutes

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1 Introduction

With a population of over 1.2 billion, India is the world’s second most populous country after China, and its economy is growing at between 4 and 10% per year. A growing economy needs skilled labour, both self-employed entrepreneurs and employees, as the Indian government itself has acknowledged: “[The initiatives] Make in India and Skill India are complementary to each other” (Government of India [GoI], 2015, p. 25), because a more educated workforce is generally more productive (Palmer, Wedgewood, Hayman, King, & Thin, 2007). Vocational training is crucial to developing employees’ skills outside the academic environment and is most commonly provided at state-run Industrial Training Institute (ITIs) through the Craftsmen Training Scheme (CTS) (Rao, Sahoo, & Gosh, 2014b).

Most individuals completing training at an ITI find it very difficult to make the transition to the labour market, and many face unemployment despite their qualifications (Rao, Joshi, Mathur, & Sahoo, 2014a; World Bank, 2008). Yet at the same time, Indian employers find it harder to fill vacancies than their counterparts in many other countries (Federation of Indian Chambers of Commerce & Industry [FICCI], 2012). Interestingly, only a minority of those completing vocational training actively seek self-employment as an alternative means of earning their living (World Bank, 2008).

Employers often blame this mismatch on the poor quality of those completing ITI training courses. They complain that these ITI trainees lack technical skills, practical skills and, particularly, vital soft skills, such as team-working and communication skills (Rao et al., 2014a). Employers also find that this group is inadequately prepared to run a business: they have not been trained as multi-skilled workers and lack exposure to the commercial skills that are required to perform as business persons (Kumar, 2016; World Bank, 2008).

To tackle the quantitative and qualitative problems in its vocational training provision, the Indian government adopted in 2009 a National Policy on Skill Development (GoI, 2009), which set the goal of training 500 million individuals by 2022. As well as producing greater numbers of skilled workers, however, the policy also aimed to address the quality of training courses, through the equipping of Indian nationals with the knowledge, expertise and skills required for the labour market and/or for running their own business.

In 2015, this policy was updated as the National Policy on Skill Development and Entrepreneurship (GoI, 2015), which regards the promotion of entrepreneurship as a crucial tool in the fight against poverty. Entrepreneurship education is the first of the nine strategies that make up the Entrepreneurship Framework: “Educate and equip potential and early stage entrepreneurship across India” (GoI, 2015, p. 35). This strategy provides for an entrepreneurship education curriculum to be developed in collaboration with experts and made available across the country, free of cost, for all Indian citizens, either face-to-face or online (GoI, 2015). Beside the Entrepreneurship Framework, there already exist the core ‘employability skills’ curriculum at the ITIs covering entrepreneurship education (GoI, 2011, 2014b). The introduction of the ‘employability skills’ curriculum takes the ‘delivery context’ (Palmer et al., 2007, p. 73) into consideration, aiming
Entrepreneurship Education at Indian Industrial Training Institutes

firstly to enhance the quality of the ITI education as well as the graduates, and secondly to facilitate the school-to-work transition of the latter. Because this curriculum has been implemented only recently, our research focuses on the quality of the input (curriculum design and teachers’ level of education and training) and process (teaching methodologies) rather than on the output (Tara, Kumar, & Pilz, 2016). In this paper we use a three step approach analysing the prescribed, adopted and enacted curriculum (see in detail section 3). Therefore, we investigate firstly the extent to which entrepreneurship education is currently embedded in ITI curricula, secondly the teacher’s understanding of entrepreneurship education and their interpretation of the curriculum and thirdly how it is actually delivered in day-to-day teaching. We illustrate the opportunities and difficulties involved, including the issues raised in the implementation of the new curriculum. However, we first outline the research context and our methodological approach before discussing the findings.

2 Research Context

To elaborate the research context, we define, in this section, what we mean by ‘entrepreneurship education’, provide an overview of the Indian vocational education and training (VET) context, and highlight the importance of entrepreneurship education in this context.

2.1 Defining ‘Entrepreneurship Education’

Clearly defining the concept of ‘entrepreneurship education’ is crucial to any investigation of how it is embedded in the curriculum and delivered. The international literature makes a distinction between a ‘narrow’ and a ‘wide’ definition of entrepreneurship (Lackéus, 2015; Metcalfe, 2004; Stevenson & Jarillo, 1990).

The ‘narrow’ definition depicts the goal of entrepreneurship education as ‘becoming an entrepreneur’, with emphasis on preparation for setting up a business. This narrow definition embraces primarily theoretical content relating to entrepreneurship, the identification of opportunities, business development, self-employment, venture creation, and growth (Gartner, 1990; Lackéus, 2015).

In contrast, the goal of the ‘wide’ definition is ‘becoming entrepreneurial’ (Lackéus, 2015). The main focus of this approach is learning the skills for successful entrepreneurship – that is, developing as an individual who thinks and acts entrepreneurially in any professional situation, not just in the context of setting up a business (Stevenson & Jarillo, 1990). Thus acting entrepreneurially is something that employed individuals can also do (Shane & Venkataraman, 2000). Personal development, creativity, self-reliance, initiative and an action orientation form the core elements of this wide definition of entrepreneurship education (Lackéus, 2015). Fisher, Graham and Compeau (2008) define a framework for analysing learning outcomes in entrepreneurship education, which also serves as the basis for developing and continuously improving entrepreneurship education. Our definition of entrepreneurship education draws on this framework in dividing the subject-matter into three domains: knowledge, attitudes and skills. This division
is common in the literature (EURYDICE, 2012; Heinonen & Poikkijoki, 2006; Lackéus, 2015). It is based on a ‘wide’ definition and embodies the idea that the essence of entrepreneurship education is to develop not only entrepreneurial knowledge but also entrepreneurial skills and attitudes. Table 1 indicates our understanding of entrepreneurial competencies based on the ‘wide’ definition, which forms the basis for the further analysis of the prescribed and enacted curricula.

Table 1: Entrepreneurial competencies (authors’ own compilation, drawing on Fisher et al., 2008, p. 320; Lackéus, 2015, p. 13).

<table>
<thead>
<tr>
<th>Domain</th>
<th>Sub-Domain</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge</strong></td>
<td><strong>K1)</strong> Knowledge of career opportunities and of the world of work</td>
<td>Knowledge of the world of work, of different types of employment, of what being an entrepreneur means, defining the individual’s role in the world of work and applying it personally, developing the individual’s awareness of his or her own scope and limitations</td>
</tr>
<tr>
<td></td>
<td><strong>K2)</strong> Business and financial knowledge</td>
<td>Knowledge of concepts and processes connected with entrepreneurship</td>
</tr>
<tr>
<td></td>
<td><strong>K3)</strong> Knowledge of business organisation and processes</td>
<td>Knowledge of the business environment, setting up a business, how businesses operate and fair trade</td>
</tr>
<tr>
<td><strong>Attitudes</strong></td>
<td><strong>A1)</strong> Ability to reflect</td>
<td>Self-assessment of strengths and weaknesses, assessment of risks, reflection on the individual’s own behaviour, and critical thinking and questioning</td>
</tr>
<tr>
<td></td>
<td><strong>A2)</strong> Entrepreneurial identity</td>
<td>Entrepreneurship values, awareness of responsible and social business management</td>
</tr>
<tr>
<td></td>
<td><strong>A3)</strong> Self-efficacy</td>
<td>Self-awareness and self-confidence</td>
</tr>
<tr>
<td></td>
<td><strong>A4)</strong> Pro-activeness</td>
<td>Creativity: innovation and imaginativeness</td>
</tr>
<tr>
<td></td>
<td><strong>A5)</strong> Entrepreneurial passion</td>
<td>Initiative</td>
</tr>
<tr>
<td></td>
<td><strong>A6)</strong> Perseverance</td>
<td>Problem-solving</td>
</tr>
<tr>
<td><strong>Skills</strong></td>
<td><strong>S1)</strong> Opportunity skills</td>
<td>Practical research into opportunities for entrepreneurship</td>
</tr>
<tr>
<td></td>
<td><strong>S2)</strong> Strategic skills</td>
<td>Planning skills, project management</td>
</tr>
<tr>
<td></td>
<td><strong>S3)</strong> Resource skills</td>
<td>Drawing up and implementing business plans</td>
</tr>
<tr>
<td></td>
<td><strong>S4)</strong> Interpersonal skills</td>
<td>Communication skills, successful presentation and negotiation, team-working skills, networking</td>
</tr>
</tbody>
</table>
2.2 An Overview of Vocational Education and Training in India

India’s education system comprises an elementary stage, lasting for eight years, followed by a two-year secondary stage and a higher secondary stage, also lasting for two years. Young people have the opportunity to leave general education for the labour market or a programme of vocational training at a number of points. The 2009 Right to Education Act introduced compulsory free schooling for children between the ages of 6 and 14, but around 40% of students drop out before they have completed their elementary education (GoI, 2014a, 2014c). However, eight years’ basic education is the minimum requirement for entry into a formal programme of vocational training (Mehrotra, Kalaiyarasan, Kumra, & Raman, 2015, p. 17). Those students dropping out before completing elementary education usually enter the informal sector, which constitutes around 93% of total employment (King, 2007).

Most formal vocational training takes place in full-time vocational schools, state-run ITIs or private Industrial Training Centers (ITCs). Trainees are enrolled in the CTS, which teaches basic, practical, occupational skills, primarily in the craft or industrial sector. The aim is to prepare those who complete the CTS for self-employment or as semi-skilled workers in an employed context. Those passing the final examination are awarded a nationally recognised certificate (Rao et al., 2014a, 2014b).

The CTS is delivered through a standard curriculum prescribed by the National Council for Vocational Training (NCVT). The curriculum covers 133 trades, comprising 70 engineering and 63 non-engineering trades. The courses vary from six months to three years. Students with varying levels of entry level education 8th, 10th or 12th grade are admitted to the course depending on the type of trade (GoI, 2014b).

National level institutions, such as the Central Staff Training and Research Institute (CSTARI) at Kolkata and the National Instructional Media Institute (NIMI) at Chennai, help in the development of the curriculum through research, development of the pedagogy and course materials. The prescribed qualification for teachers is either a diploma or a graduate degree with a minimum level of experience. The selection process for teachers is conducted at the state level. The selected teachers (craft instructors) are trained by one of the seven dedicated Central Training Institutes. Those trainees who successfully clear an All India Trade Test are awarded a National Trade Certificate by NCVT (World Bank, 2008).

In general, the vocational training provided by ITIs is seen to be falling short when it comes to the skills required for performing on the job. Specifically, the employers lament the lack of team working and communication skills amongst the craftsmen trained in the ITIs. Nor are these trained craftsmen seen as being well prepared for self-employment. Specifically, they do not seem to have received training as multi-skilled workers and they also lack exposure to commercial skills, so important for performing as business persons (World Bank, 2008).

2.3 Importance of Entrepreneurship Education in the Indian Context

VET in India has consistently been seen as deficient in terms of producing desirable employment outcomes for trained craftsmen. Prior studies have indicated that even after three years from graduation, 60% of the graduates are still not employed (World
Furthermore, the proportion of ITI graduates who became either self-employed or employers, thus entering the informal sector, was just over 10% in the case of government-owned ITIs and only around 5% in the case of privately-run ITCs (World Bank, 2008). A common reason for this low level of employment in both the organized sector and self-employment as part of the informal sector is attributed to the lack of well-rounded training beyond the occupational skill to include multiple work-related skills such as team working, communication and problem solving (World Bank, 2008). Recognizing this deficiency, the skill development policy of the GoI has been updated in 2015 and has been aptly titled the ‘National Policy on Skill Development and Entrepreneurship 2015’. Noting that India has one of the lowest rates of companies registered per 1000 working-age persons amongst the G20 countries in 2011, this policy emphasizes the need to “bring the world of education and training closer to the world of work” and emphasises the importance of creating entrepreneurial opportunities through an enabling eco-system that includes appropriate education and training (GoI, 2015, p. 10).

3 Research Question and Current State of Research in the Field

The objective of this paper is to portray the status quo of entrepreneurship education within vocational education in India. We show how, and to what extent, entrepreneurship is taught in the ITIs in order to identify potential for optimisation. We address the following three research questions:

A How is entrepreneurship education embedded in the curricula (the prescribed curriculum)?

B How do teachers interpret entrepreneurship education (the adopted curriculum)?

C How, and to what extent, is entrepreneurship education delivered by teachers (the enacted curriculum)?

This process drew on literature relating to the ‘prescribed’ and ‘enacted’ curriculum (Bloomer, 1997; Edwards, Miller, & Priestley, 2009). Teachers’ knowledge and understanding of the intervention are regarded as an important element in the process of curriculum implementation. For this reason the approach was extended to the ‘adopted’ curriculum which draws on research on curriculum implementation taking teacher’s interpretation, hence their adoption of the curriculum for their everyday teaching, into consideration (Fullan & Pomfret, 1977).

The literature review showed no evidence of any research on the topic of ‘prescribed’, ‘adopted’ and ‘enacted’ curricula in the context of entrepreneurship education in India. While several studies focus on the Indian VET system and its challenges (e.g. Mehrotra, 2014; Pilz, 2016), broader studies addressing curricular questions and teaching in ITIs are rare.

Mehrotra et al. (2015) have focused on the output of ITIs, researching companies about staff perceptions of ITI leavers. They found that company personnel consider ITI
graduates lack “application-oriented knowledge and problem-solving skills” (p. 265) – both elements of the wide definition of entrepreneurship education (section 2.1).

A similar methodological approach was taken by Pilz, Krisanthan, Michalik, Zenner and Li (2016). Their study compared the ‘prescribed’ and ‘enacted’ curricula in the area of pre-vocational education in secondary schools between four different countries, including India. Overall, Indian teachers regarded the prescribed curriculum as completely taught. Yet the emphasis was placed especially on knowledge, with less on skills or attitudes. Most teachers regarded preparation for students’ final exams as highly important. Tara et al. (2016) confirm these findings to be valid in the case of ITIs.

Whereas the focus in the study of Pilz et al. (2016) was on both the curriculum design and the implementation, the focus in this paper is on the teachers’ interpretation and implementation (research questions B and C), taking the results of the curriculum analysis (research question A) as a starting point. Our analysis of the prescribed and enacted curriculum, based on the wide and internationally-accepted understanding of entrepreneurship education (section 2.1) against the backdrop of the issues relating to the entrepreneurial and the personal independence of ITI graduates (section 2.2), is of relevance to transitions to employment in the Indian context. Research question A was tackled by curriculum analysis of the ‘employability skills’ curriculum (GoI, 2014b, 2011) while the answers of question B and C are based on semi-standardized qualitative interviews with ITI teachers at eight different ITIs in and around Bangalore. In a diverse country like India, it is not possible to generalise the findings of one area for the whole country, which in any case we do not intend to do in this paper. However, the area of Bangalore serves as a valuable test-bed for our research. Bangalore is an area located in the heart of India covering rural as well as urban areas. Furthermore it shows a cross-section of the cultures represented in India. Bangalore is also considered to have the most advanced entrepreneurial eco-system in India, often inviting comparisons with Silicon Valley. Hence, it is reasonable to expect the implementation of the recently mandated entrepreneurship curriculum in the ITIs in Bangalore to be a forerunner in India- both in terms of speed and quality of implementation (Herrmann, Gauthier, Holtschke, Berman, & Marmer, 2015).

The details on our methodological approach are described in direct relation to the findings (sections 4 and 5).

4 Details of Study Design and Analysis of the Prescribed Curriculum

Research question A concerning the prescribed curriculum was addressed by means of a theory-driven curriculum analysis. This review was focused on the ‘employability skills’ curriculum (GoI, 2014b, 2011), which includes elements of entrepreneurship education. This curriculum was first introduced in 2011 and updated in 2014 (GoI, 2014b). We could not assume that all vocational schools have yet implemented the new curriculum, so we included both in our curricular analysis. To reduce the risk of misinterpretation, we also included in our analysis the teaching materials developed by the NIMI in Chennai and officially made available to teaching staff (Kumar, 2016). The approach underpin-
ning our curriculum analysis was qualitative content analysis. The category system used represents a synthesis of induction and deduction (Schreier, 2012) and draws on our understanding of entrepreneurship education (section 2.1). The emphasis of the curriculum analysis is not on quantifying the codings (in contrast to former studies, e.g. Berger et al., 2012; Pilz et al., 2016), but rather to show which elements of knowledge, attitudes and skills are prescribed in the curriculum and which definition (wide or narrow) is followed. The analysis then forms the basis for the interviews, identifying similarities or differences in the intention of the prescribed curriculum and the enacted curriculum by the teachers. We used the framework in Table 1 (section 2.1) to derive codes and subcodes to underpin the curriculum analysis. The theoretical category system was used for a pilot study, the findings of which gave rise to further codes (Schreier, 2012).

4.1 Findings of the Curriculum Analysis

The ‘employability skills’ curricula divide into five or eight modules (2011 and 2014 curricula respectively). ‘Entrepreneurship’ is explicitly included as one module in both curricula and is taught for 20 hours in the 2011 curriculum and for 10 hours in the 2014 curriculum. Further modules are among others ‘communication skills’, ‘English language skills’ or ‘environment education’. The sub-sections, which are divided into thematic areas, describe the knowledge, skills and attitudes to be acquired. In some cases, these are supplemented with teaching recommendations. The teaching materials are compiled in Instructional Media Packages (IMPs) that include the theoretical content, practical exercises, tests, and a CD-ROM with listening exercises. These are closely tailored to the 2011 curriculum. Some of the entrepreneurship education learning outcomes are integrated into other modules in the ‘employability skills’ curriculum. Consequently, we have analysed not just the ‘entrepreneurship’ module but also the other modules in this curriculum. Codes were derived primarily from the modules on ‘communication skills’ and ‘English language skills’.

Knowledge

Both, in the curricula and in the teaching materials, the emphasis in the ‘entrepreneurship’ module is on teaching knowledge. In total, eight of the eleven categories were identified in at least one ‘employability skills’ curriculum or in teaching materials. Seven out of those eight identified categories were recognised in the ‘entrepreneurship’ module.

Table 2 presents the codes identified. ‘Yes’ means teaching input in the respective category has been identified. Dimensions not identified in the analysed curricula and teaching materials are highlighted with bold letters.
Table 2: Codes identified for the ‘knowledge’ dimension

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Curriculum 2011</th>
<th>Curriculum 2014</th>
<th>Teaching Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>K1.1: Knowledge of the world of work</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>K1.2: Knowledge of different types of employment</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>K1.3: Knowing what being an entrepreneur means</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>K1.4: Defining the individual’s role in the world of work and applying it personally</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>K1.5: Developing the individual’s awareness of his or her own scope and limitations</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>K2.1: Knowledge of entrepreneurial concepts</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>K2.2: Knowledge of processes connected with entrepreneurship</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>K3.1: Knowledge of the business environment</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>K3.2: Knowledge of setting up a business</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>K3.3: Knowledge of how businesses operate</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>K3.4: Knowledge of fair trade</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

Both curricula provide for teaching on knowledge of the world of work, but content related to this area could not be identified in the teaching materials.

The curricula also include topics to develop understanding of what it means to be an entrepreneur. The curricula include content such as entrepreneurial values, attitudes and motives, the characteristics of a successful entrepreneur and a successful business, the importance of skills, the identification and development of entrepreneurial competence and networking, and entrepreneurial culture. They do not specify whether this involves a purely theoretical consideration of entrepreneurial attitudes, characteristics and skills or whether students actually develop these elements. Scrutiny of the teaching materials indicates, however, that the approach is purely theoretical.

The curricula also attempt to tackle the requirements for students to be able to define and develop their own role in the world of work by including career-planning as a learning
outcome. It is also clear from the teaching materials that students are required to read job descriptions, practise applying for these jobs, and set goals for their own career-planning based on self-assessment of their own strengths and weaknesses.

With regard to the processes linked to entrepreneurship, the curricula focus on the needs and scope of entrepreneurial self-employment along with forms of support (particularly financial) and applicable frameworks. They also specify content related to the business environment, including customers, markets, and health and safety. The curricula additionally specify learning outcomes related to how businesses operate, which may include such areas as marketing methods and various aspects of quality and management systems. Scrutiny of the teaching materials also revealed content in relation to business concepts and setting up a business. This includes the distinction between small, medium-sized and large businesses, for example, or between companies in the manufacturing and services sectors. Further input is geared to equipping students to draw up a business plan or to prepare and present a project report. The project report component also involves exercises that require students to apply their knowledge in practice.

**Attitudes**

Content indicating learning in the ‘attitude’ domain was identified for seven out of ten codes. Here they were mainly identified in the ‘entrepreneurship’, ‘environment’ and ‘communication skills’ modules (Table 3).

<table>
<thead>
<tr>
<th>Attitudes</th>
<th>Curriculum 2011</th>
<th>Curriculum 2014</th>
<th>Teaching Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1.1: Self-assessment of strengths and weaknesses</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>A1.2: Assessment of risks</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td><strong>A1.3: Reflection on the individual’s own behaviour</strong></td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>A1.4: Critical thinking and questioning</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td><strong>A2.1: Entrepreneurship values</strong></td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>A2.2: Awareness of responsible and social business management</td>
<td>no</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>A3: Self-awareness and self-confidence</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>A4: Creativity: innovation and imaginativeness</strong></td>
<td>yes</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td><strong>A5: Initiative</strong></td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>A:6 Problem-solving skills</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>
The ‘entrepreneurship’ module, for example, describes self-analysis as a learning outcome, suggesting that self-assessment of their own strengths and weaknesses are part of the teaching that students receive. Scrutiny of the teaching materials relating to this area reveals exercises tailored to this learning outcome. Students are presented with the key characteristics of entrepreneurs and then reflect on whether they see themselves as having strengths or weaknesses in these areas. These exercises are designed to pinpoint areas in which students have weaknesses so that they can work to overcome them. Overall, it is clear that while teaching input relating to self-assessment skills is evident, students are not really being equipped to develop these skills successfully.

We also identified curriculum content related to awareness of general ethical values. Relevant teaching materials cover areas including reliability, respect, responsibility, awareness of the law, fairness, environmental protection, and electoral systems.

Moreover, both the 2011 and the 2014 curricula describe ‘motivational training’ as part of the teaching programme. This covers, for example, the characteristics that contribute to success, the importance of a positive attitude, self-awareness, ethics and values, self-motivational methods, goal-setting and career-planning. Research into motivation shows that to be motivated, students need to appreciate the relationship between their own efforts and achievement of their goals, to set ambitious goals for themselves, and to pursue them determinedly and to their own standards (e.g. Bransford, Brown, & Cocking, 2000). Support with goal-setting and career-planning gives a particular boost to students’ motivation, enabling them to experience self-effectiveness and increasing their self-awareness (Jiang & Kleitman, 2015). Self-awareness is, therefore, a further motivational factor.

The 2014 curriculum identifies problem-solving skills as a learning outcome. The teaching materials include exercises that involve students in analysing a range of problems and devising possible solutions. Theoretical approaches to problem-solving processes form the basis for this.

Skills

We were able to identify six of the eight entrepreneurial skills in one of the two curricula or in the teaching materials for the ‘entrepreneurship’ and ‘communications skills’ modules. Table 4 below depicts the codes identified.

In the ‘communication skills’ module of the 2011 curriculum, time-management is included under the heading of planning skills, and teaching input promotes development of a range of tools to enable students to plan and organise their working day efficiently. It also incorporates project management skills, including project design, feasibility and cost-effectiveness.

It also emerges from the teaching documentation that the students are required to develop their own entrepreneurial concept for a product that they have thought of.

The 2011 curriculum focuses on developing wide-ranging communication skills, teaching both basic knowledge about communications and techniques for dealing with barriers to communication and nervousness and for conducting interviews. The content and learning outcomes for non-verbal communication, manners, etiquette and dress codes are included under ‘successful presentation’.
Table 4: Codes identified for the ‘skills’ domain

<table>
<thead>
<tr>
<th>Skills</th>
<th>Curriculum 2011</th>
<th>Curriculum 2014</th>
<th>Teaching Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1: Practical research into opportunities for entrepreneurship</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>S2.1: Planning skills</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>S2.2: Project management</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>S3: Drawing up and implementing business plans</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>S4.1: Communication skills</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>S4.2: Successful presentation and negotiation</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>S4.3: Team-working skills</td>
<td>no</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>S4.4: Networking</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

The ‘entrepreneurship’ module also aims to equip students to develop their networking skills. However, this learning outcome is not explicitly formulated in the teaching materials and was deduced from the suggestions for group-work contained in the materials.

The 2014 curriculum also tackles all of these skills areas with the exception of networking. The major difference between the two curricula is that the 2011 curriculum is substantially more detailed; some parts of the 2014 curriculum have been pared down to such an extent that they offer virtually no in-depth information on individual areas, which has a negative impact on the clarity and comprehensibility of the curriculum. Without teaching documentation, it is very difficult to discern which thematic areas are relevant to teaching and in what depth and breadth they are tackled.

4.2 Summary and Discussion of Findings of the Curriculum Analysis

Overall, it can be concluded that the ‘knowledge’ domain codings predominate in the ‘entrepreneurship’ module. Analysing other modules from the ‘employability skills’ curriculum produced a non-significant difference in the codings for the three dimensions in eight ‘knowledge’ categories and seven each of the ‘attitudes’ and ‘skills’ categories.

Considering solely the learning outcomes described in the ‘entrepreneurship’ module illustrates that these outcomes focus predominantly on the skills needed to set up and run a business. The module is, therefore, based on the narrow definition of entrepreneurship education. This is reflected also in the skills, attitudes and characteristics of entrepreneurs described in the teaching materials, which focus overwhelmingly on the skills that entrepreneurs need to set up and manage businesses, set ambitious goals and work towards them, their willingness to take risk, creativity and optimism, how entrepreneurs
Entrepreneurship Education at Indian Industrial Training Institutes

5 Details of Study Design and Analysis of the Adopted and Enacted Curriculum

Research questions B (‘How do teachers interpret entrepreneurship education?’) and C (‘How, and to what extent, is entrepreneurship education delivered by teachers?’) relate to the enacted curriculum and were addressed through qualitative interviews. In the Indian context it is complicated to conduct classroom observations, because permissions are difficult to receive. Qualitative interviews instead of observations were therefore chosen as the method to address these two research questions. Even though this method shows weaknesses (for example, the subjective view of the teachers), it is considered the most appropriate way to capture teachers’ understandings of entrepreneurship education and their interpretations of curriculum (Wragg, 2012; Fullan & Pomfret, 1977). Furthermore validity checks using the observation method showed that questioning teachers is quite effective at measuring degree of implementation (Fullan & Pomfret, 1977). Because of the small number of interviews with the teachers (section 3), it is not possible to generalise our findings, and we do not intend to do so. We also did not identify any trends between the answers and the age, sex and state of experience of the teachers.

Teachers who teach the ‘employability skills’ curriculum at ITIs were interviewed, because they are the central persons who interpret and then deliver the prescribed curricula in their everyday teaching. In total eight teachers teaching the ‘employability skills’ curriculum at eight different ITIs in and around Bangalore were interviewed. ITIs were selected by partner institutions in India and teachers were named by ITIs. However, given the context of Indian culture, hierarchy and complex administrative processes, the choice of respondents (ITIs) was dictated more by accessibility than an ex-ante list of desirable respondents. However, an ex-post analysis of respondents (both the institutes and teachers) shows diversity along a variety of different characteristics:

- ITIs are located in urban as well as rural areas (T5, T6 and T7).

- The size of the ITIs varies between small ITIs (e.g.: 53 students and 6 faculties (T5)) up to big ITIs (e.g.: around 1000 students and a faculty of 73 trainers (T8)).
The qualification of the teachers most teachers have a Bachelor of Arts, Science or Engineering (T1, T2, T3, T7, T8), one teacher has National training certificate (T5), one teacher has a Diploma (T4) and one teacher has even a Master of Arts (T6).

The entrepreneurial experience (running or working in a business) of the teachers (e.g. from no experience at all (T4, T6) to one year of work experience in a business (T7) and up to 20 years of work experience in a business (T1). However, it is noteworthy that none of the teachers has any experience in running a business.

The experience in teaching “employability skills” curriculum – e.g. from 2 month (T2) up to more than 20 years (T7, T6).

Most ITIs collaborate with companies and receive formal (T1, T3, T5, T7 and T8) or informal training on their feedback.

A semi-standardised questionnaire was developed for these interviews, based on the definition of entrepreneurship education (section 2.1) and on the finding of the curriculum analysis (section 4). In the first part of the interview teachers were asked about their understanding of entrepreneurship education based on the analysis of the prescribed curriculum. In the second part of the interview teachers were asked how and to what extent they actually teach entrepreneurship education in the day-to-day teaching. The interviews were analysed using qualitative content analysis on the basis of a category system drawing on our understanding of entrepreneurship education and the results of the curriculum analysis (Schreier, 2012; Fullan & Pomfret, 1977).

To compare the prescribed and enacted curricula, we first established which curriculum the teachers were using. Five said they were using the 2014 curriculum and three the 2011 curriculum.

5.1 Teachers’ Understandings of Entrepreneurship Education (Adopted Curriculum)

Research question B is aimed at investigating teachers’ understanding of the concept of entrepreneurship education, since this understanding influences the way in which skills are developed through teaching (Fullan & Pomfret, 1977). The question was also designed to identify potential discrepancies between the intentions behind the curricula and individual teachers’ understanding. Teachers were, therefore, asked what they understood by entrepreneurial knowledge, attitudes and skills.

Their widely varying responses highlight the fact that they have different understandings both of entrepreneurial knowledge and of skills and attitudes. Five teachers reported that their approach to teaching entrepreneurial knowledge was to teach theoretical knowledge using the blackboard and tools such as presentations, role-play, group-work and case studies. These teachers described skills and attitudes as practical knowledge that the students could acquire through company visits or by attending talks on best practice by successful entrepreneurs: “Skills are about getting hands-on experience. So we show video clips about specific subjects and let them work with computers for IT-topics. Knowledge is only the information with blackboard and power point.” (T3).
One teacher also reported that he used ‘hands-on experience’ to teach skills, though he did not explain what this meant. There is a clear separation between these areas, then, and teachers believe that skills and attitudes are best acquired through doing.

With regard to entrepreneurial knowledge, teaching focused in all eight cases on setting up and running a business. Five teachers made it clear that their aim was to open up the range of career perspectives to trainees and to show them the benefits and success they could achieve through self-employment. They also demonstrate the personal financial success that entrepreneurship can bring as well as the social benefits, such as the creation of new jobs. In this context, one teacher told us: “...we do different projects and give them the chance to choose between getting more information about own business or working in a business.” (T1).

Furthermore they reported the following with regard to their understanding of entrepreneurial knowledge:

- One teacher offers students the opportunity to obtain information about both career pathways and to develop their awareness of the opportunities open to them.
- For three teachers, however, the aim was also to equip students to continue to develop their skills and to shape their lives independently.
- Five teachers also reported that knowledge of sales and marketing was important for running a business.
- In some cases, however, they also provided information on sources of state and financial support, different types of business, financial and business processes, the awareness of quality, and knowledge of labour legislation.
- In two cases, respondents also referred to the importance of technical and professional knowledge.

The teachers’ understanding of entrepreneurial knowledge therefore overlapped to a considerable extent with the content specified in the curricula. In fact, it even covered issues that also form part of other modules in the ‘employability skills’ area. What is surprising is that knowledge of setting up a business was mentioned by all teachers even though it does not feature in either curriculum and appears only in teaching materials: “Knowledge about starting an industry, types of industry, financial opportunities, marketing of goods, support by government.” (T7).

However, this strengthens the argument that teachers take their main orientation from teaching materials. A broad and very diverse picture emerges of the entrepreneurial skills and attitudes that may be inferred from the interviewees’ definitions, with a very wide range of examples being quoted. Teachers mentioned the following attitudes and skills that are reflected in the curricula:

- ability to reflect (e.g. “behaviour, good character, positive thinking, overcome their weaknesses and identify strengths” (T2))
- entrepreneurial identity (e.g. “quality statements, values of being an employer” (T1)) “leadership qualities” (T6), “attitudes to become a leader and to start a business” (T7)
• self-efficacy (e.g. “self-confidence” (T4))
• pro-activeness (e.g. “creativity and courage” (T9))
• entrepreneurial passion (e.g. “initiative” and “willingness to start an entrepreneurship or to go to industry” (T4), “risk-taking, independent mind of their own, don’t want to be an employee” (T6), “motivation and initiative for quality” (T8))
• opportunity skills (e.g. “seeking jobs, profit making” (T4), “looking for opportunities” (T5))
• strategic skills (e.g. “foresight, future plans and the thinking of one’s own profit as well as for others the society” (T8))
• resource skills (e.g. “fostering knowledge, market-, marketing and sales competencies” (T8))
• interpersonal skills (e.g. “life skills like communication ... acting in different situations and with many persons” (T2), “interacting with other people” (T6) “good communications skills” (T7))

This list includes attitudes and skills that also feature in the curriculum of one of the ‘employability skills’ modules – planning and project management skills and networking – as well as additional attitudes and skills, such as focus, independence, initiative, a positive attitude and profit-seeking. One teacher argued that entrepreneurial attitudes could not be taught: “You can’t teach it, you must have it” (T1).

This reflects the range of statements made by interviewees when they were asked about differences in the teaching of knowledge, skills and attitudes. Three teachers reported that they did not teach entrepreneurial skills and attitudes, citing a lack of resources to do so: “We have no space for practical activities. We have only a rented building. The rooms are too small. We can’t even use our CNC machine because of less space. Nobody can teach skills.” (T6).

Overall, it may be concluded that respondents take a broad view of entrepreneurship: they cite the importance of content that goes beyond the narrow description contained in the ‘entrepreneurship’ module. They also see their students’ development into independent and responsible individuals as part of their entrepreneurship education, mirroring the wide definition of the concept. Some teachers point to potential problems with teaching a more broadly-defined form of entrepreneurship education, however, and the next section outlines how this is achieved in day-to-day teaching.

5.2 Delivering Entrepreneurship Education in Day-to-Day Teaching (Enacted Curriculum)

After establishing the teachers’ understandings of entrepreneurship education, we moved to the third research question – how it is delivered in day-to-day teaching. We asked teachers to indicate the extent from not taught at all to teach overarching – to which their teaching actually delivered the curriculum prescribed for entrepreneurship education. The curriculum analysis showed that the prescribed curriculum did not cover every
entrepreneurial competency (section 2.1, table 1). Those competencies not identified in the prescribed curriculum were, therefore, left out in the analysis of the enacted curriculum. Interviewees were asked to assess their teaching input in each of the three domains.

Knowledge
Questions in the ‘knowledge’ domain focused on the three main categories ‘knowledge of career opportunities and of the world of work’ (K1), ‘business and financial knowledge’ (K2) and ‘knowledge of business organisation and processes’ (K3).

Teachers consider their teaching input in the area of ‘knowledge of career opportunities and the world of work’ overall as ‘wide-ranging’. Just one teacher (T5) reported only limited input in this area. Most ITIs invite or visit companies to show possible career pathways: “We do company visits to create the awareness of the industry close to the ITI and show available job opportunities” (T3).

They considered teaching input somewhat higher in the area of ‘knowledge of business organisation and processes’, where the widest range of responses was also evident. Going into detail it became clear, that the focus in this area was more on the knowledge of business environment instead of setting up and running a business. While two teachers reported that they spent little, if any, time teaching the business environment, three said that they covered it in a wide-ranging way and three teachers mentioned that they covered it comprehensively: “We teach it in a wide-ranging way. We cover market, customer and safety issues” (T1). In contrast, the teaching input reported for ‘setting up and running a business’ was low. Three teachers said they did not teach the area, two said that their input was limited and three responded that it was wide-ranging. One of the teachers reporting limited input in this area added: “We give only awareness for that since most students want to go for employment” (T9).

It seems that respondents do not attach great importance to developing knowledge in this area, since many students are not considering self-employment. The fact that teaching input here is mainly rated as limited can be explained by the fact that neither of the two curricula specifies learning outcomes in this area. This, however, runs contrary to the information provided by the interviewees on their understanding of entrepreneurship and the importance of such content, which suggests that knowledge in this area was regarded as important. Teachers are focussing on getting their students into employment: “In case one of the students is unemployed, he would call us and we would help them. We send a list with all students to companies with all the details of the students so that companies can contact them” (T1). Trainees who have not yet found a job are offered self-employment as an alternative:

We motivate them to start an own business if they don’t get a job. We show them all possible ways they can go, how they can benefit from it, what support is available and how they can use the maximum of it to become a good entrepreneur (T7).

The teaching input for business and financial concepts and processes was also reported as low. This is particularly surprising given a large proportion of the curricula in the ‘entrepreneurship’ module relates to financial processes and the financial environment. Those who teach content in this area teach “knowledge about banks” (T4) or knowledge
about “financial support you can get from the government, neighbours and parents” (T3).

Overall, it is clear that none of the knowledge categories reflected in the curriculum content is taught by all teachers. Only a few teachers cover the framework and processes connected with entrepreneurship (and those only to a limited extent). The focus is more on preparing trainees for employment and on tackling areas such as ethical values and the financial framework. This is not adequate reason for assuming that students are sufficiently familiar with the range of opportunities offered by differing forms of employment to recognise the possibilities.

**Attitudes**

The six main categories in the ‘attitude’ domain were ‘ability to reflect’ (A1), ‘entrepreneurial identity’ (A2), ‘self-efficacy’ (A3), ‘pro-activeness’ (also referred to as ‘creativity’) (A4), ‘entrepreneurial passion’ (A5) and ‘perseverance’ (A6). All competencies except ‘entrepreneurial passion’ were identified in the prescribed curriculum (Table 3).

The teachers attached highest value to ‘self-efficacy’ as a combination of ‘self-awareness’ and ‘self-confidence’ and to ‘creativity’. These are also the only areas that all teachers said they taught. For all other entrepreneurial attitudes, only some interviewees said they developed their students’ skills. Asked how they used teaching to contribute to students’ self-efficacy, interviewees gave very diverse responses. One teacher saw monthly testing as a means towards strengthening self-efficacy. However, in terms of motivation research, this would be borne out only if it produced positive outcomes. Since this was not universally the case, we cannot reliably assume that there was teaching input in this case. All other teachers reported either that they motivated their students and encouraged them to have confidence in their own skills or to overcome their own weaknesses by giving them positive feedback and showing them ways of developing such attitudes, or that they set them practical exercises, such as presentations or conversations. “We teach self-efficacy in an overarching way: making them speak, help them to overcome their weaknesses, to give and receive feedback about strengths” (T3).

In the area of ‘creativity’, a total of seven respondents referred to practical methods, including role-play, work with case studies, use of multimedia, and work with projects and creativity tools. “We teach it wide-ranging, for example by giving them practical projects” (T4). Nevertheless, one interviewee stated: “They have to be born with that” (T4). In some cases, therefore, teachers assume that creativity cannot be taught.

As with ‘creativity’, there is an assumption here that ‘initiative’ cannot be taught or learned: “You need to have it. It’s a basic nature. Nobody can teach it.” (T6). The pictures drawn by the teachers regarding the ‘ability to reflect’ and ‘perseverance’ are the most heterogeneous. While in each case three teachers said that they spent little, if any, time teaching this ability to reflect, three said that they covered it in a wide-ranging way and two that they covered it comprehensively.

We teach self-reflection and problem-solving skills comprehensively. We make them speak, overcome their weaknesses and give feedback about their strengths. To enhance problem-solving skill we give them opportunities and situations to solve problems by their own. That could be real problems, for example if a machine is not working, or
they have to solve problems during role plays (T3).

Overall, teaching input in the area of attitudes varies widely from one ITI to another. Many teachers were of the view that attitudes such as creativity, initiative and appetite for risk cannot actually be taught.

Skills

In the ‘skills’ domain only two out of four competencies were identified in the prescribed curricula (Table 4). The focus in the ‘skills’ domain was, therefore, on the areas of ‘strategic skills’ (S2) as well as ‘interpersonal skills’ (S4).

The highest assessment by teachers of their teaching input was in the area of ‘interpersonal skills’ and here especially in ‘communication skills’ and ‘team-working skills’, which reflects the marked focus on this areas in the curricula. Three teachers reported using interviews to teach communication skills, two use presentations and group discussions, and one uses role-play. One teacher involved industry partners, who conduct interviews with the students. One teacher commented on the problems of teaching such skills: “Students come from a zero English level. We have to make them speak English. So we let them read newspapers, prepare them for job interviews and teach them to speak in the class and during group discussions.” (T3)

Teachers focus on the fact that the main priority is to equip students to speak English, since very few have any English language skills before joining the course.

‘Team-working skills’ are not formulated as a learning outcome in the curricula, but the 2011 curriculum describes teaching methods that enable this skill to be practised and developed. Five teachers describe group-work and a further three required students to work on projects in teams: “We give them projects and tasks they have to coordinate in a group” (T3) or in short “all what they do is in a team” (T6).

In this context, one teacher added: “We do a lot of projects in team-work. We do one activity each year in June. For example we do tree planting, cleaning, cutting and we go to the national safety day” (T5).

Respondents also cited activities that exceed what is written in the curriculum and are designed to promote team-working skills. Teaching and learning research demonstrates that the extent of cooperative learning by itself will not promote social competencies. The structuring of the interaction processes that take place during cooperation does, however, promote such social competencies (Edeling & Pilz, 2016). It is, however, unclear how far the teachers interviewed actually structured interaction processes in group-work.

‘Strategic skills’ were implemented very rarely. Just two teachers reported that they implemented them in a wide range or comprehensively. Another two teach them little. Four don’t teach these skills at all. The teachers who teach the skills said that these are achieved through projects carried out by the students. “Students have to manage projects and we counsel them during the process” (T7). There is no theoretical underpinning as described in the curriculum.
5.3 Interpretation of the Results

The ‘entrepreneurship’ module is based on a narrow definition of entrepreneurship education that focuses primarily on teaching knowledge of how to set up and run a business. Scrutiny of the other modules in the ‘employability skills’ curriculum shows evidence of a broader definition of entrepreneurship education. Teachers’ understandings are in line with the wide definition of entrepreneurship education and the broad ‘employability skills’ curriculum, and hence the prescribed curriculum.

The intensity with which the individual categories are delivered in practice varies widely, however. One reason for this is the unclear and rudimentary description contained within the curriculum. The elements included in the ‘knowledge’ dimension were mostly delivered as planned, but the enacted curriculum diverges from the prescribed and adopted one in the ‘knowledge of career opportunities and of the world of work’ category: all that is evident in both the curriculum and the teaching materials is the prospect of entrepreneurship/self-employment, with no content relating to paid employment. This is mirrored in interviewees’ understanding in relation to curriculum content. In practice, however, the focus in teaching is on future employment in a company, with no proactive input on the prospect of entrepreneurial self-employment.

Teachers are aware of the elements of the ‘skills’ and ‘attitudes’ domains prescribed in the curriculum, which form part of their understanding of entrepreneurship education, but this understanding is seldom translated into teaching input or, if it is, is delivered relatively crudely. Some teachers justify this non-implementation by arguing that skills and attitudes cannot be taught and that they deliver other input, such as team-working skills, through group-work. Whether, and to what extent, the application of the social form is delivered in a structured and/or reflective way remains unclear.

In summary the findings show clearly, that even though the adopted is closely based on the prescribed curriculum, what lacks is the transformation into day-to-day teaching. Reasons seem to rely heavily on teachers perception that skills and attitudes can’t be taught. Implications arising from those findings are therefore closely connected to teacher training, especially with regard to didactics and pedagogy tackling the teaching of soft- and personal-skills.

6 Conclusion

How is entrepreneurship education prescribed, adopted and enacted in Indian ITIs? Do the recently introduced curricula have the potential to enhance the entrepreneurship knowledge, skills and attitudes of ITI graduates in order to facilitate employment pathways – as an employee or self-employed? Within this study we tried to address those questions.

It can be concluded that the wide definition of entrepreneurship education underpins both the ‘employability skills’ curriculum and the teachers’ understandings of entrepreneurship education. However, the findings also show that there are shortcomings in day-to-day teaching in some areas, particular as regards skills and attitudes. Many teachers have difficulty teaching these two domains. They rationalise these problems by citing inadequate equipment (in particular, machinery) and time. Both equipment and
Entrepreneurship Education at Indian Industrial Training Institutes

Other studies come to similar findings in the Indian context, both at ITIs and general secondary schools (Pilz et al., 2016; Tara et al., 2016). With regard to soft skills and attitudes, teachers see delivery itself as their main problem (see also Ajithkumar, 2016). The personal influence that the teacher embodies (Posner, 2004) can be an obstacle here. Teachers appear to lack the methodological knowledge to teach soft skills and attitudes, so in-service training in specific teaching methods and the provision of appropriate teaching materials would be useful approaches. Even though their adopted curriculum includes the skills and attitudes, delivery in the day-to-day teaching falls short. Pilz et al. (2016) concluded for the Indian context that the focus in day-to-day teaching was on knowledge and marks, while underplaying skills and attitudes. Detailed curricula, teaching materials tailored to teaching skills and attitudes, and in-service training for teachers on appropriate teaching methods would contribute to better use of the potential for entrepreneurship education to facilitate students’ transition from training to the labour market.

It became clear that the teachers working for the ITIs are strongly guided by what is specified in the curriculum and teaching materials. Guidelines must, therefore, be expressed clearly and in detail if entrepreneurship education is to develop both entrepreneurial and personal independence that is, the day-to-day teaching is to reflect the wider definition of entrepreneurship education. Reducing ambiguity would enable misunderstandings to be minimised and make it easier for teachers to implement the curriculum. It would also require teaching materials to be coordinated with curriculum content, demand adequate depth in the curriculum, and require the inclusion of specific suggestions for teaching, along with exercises and questions that ensure that lessons run smoothly.

It also became clear in the interviews that, in some areas, teachers place in their day-to-day teaching less emphasis on self-employment than on employment, even though their adopted curriculum included self-employment aspects. Entrepreneurship and self-employment need to be highlighted more by teachers as an option for the post-vocational training period, so that students do not discount this option for earning their living. Instruction for the teachers could be very helpful in this context.

The findings of this study also point to the substantial gap that needs to be covered to make entrepreneurship education better aligned with VET in India. Based on a study of Sub-Saharan Africa, Sandirasegarane, Sutermaster, Gill, Volz, and Mehta (2016) point out the need to judiciously balance the distinctive strengths and weaknesses of the VET and entrepreneurship education, and deliver an integrated and context specific learning incorporating the practical and transferable skills. Based on a German study, Holtsch (2014) highlights the need to tailor the entrepreneurship training to differing levels of entrepreneurial intentions amongst the young students. Recognising that the perceived value of the entrepreneurship education may vary with entrepreneurial intent, Holtsch also notes that the knowledge of entrepreneurship itself can influence such intentions. It follows from the above research that the challenges of incorporating entrepreneurship training into the VET is complex and multi layered, and the curriculum design and the comprehension and ability of teachers to deliver that curriculum are important contributors to this end.
These findings contribute a valuable basis for achieving the delivery intended by the government of its new entrepreneurship education curriculum as laid down in the National Policy on Skill Development and Entrepreneurship (GoI, 2015). Beside the measures announced in this National Policy, the design and implementation of an entrepreneurship curriculum at secondary or even primary level, which focus at the implementation level on the preparation for self-employment, could be useful. Most children dropping out of primary or secondary school (see section 2.2) enter the informal sector to help work at their relatives’ businesses or even setting up a new business (see, e.g. Pilz, Uma, & Venkatram, 2015; Pilz & Wilmshöfer, 2015). Entrepreneurship education following the wide as well as narrow education has the potential to help those working in the informal sector as well as those working in the formal sector. But defining a curriculum is not sufficient the teaching quality and the processes used by the teachers are also important in enhancing student learning outcomes (Singh & Sarkar, 2015). Considering the results of Pilz et al. (2016) for the Indian context, it becomes clear that the problems teachers perceive in implementing the prescribed curricula are similar in secondary schools as well as in ITIs, especially with regard to skills and attitudes. Some of the findings presented in this paper could be taken into consideration when developing curriculum, and especially in associated teacher training and in facilitating teaching-learning environments.
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Finnish WorldSkills Achievers’ Vocational Talent Development and School-to-Work Pathways

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Abstract: This paper examines the perceptions of vocational expertise and school-to-work pathways among WorldSkills Competition (WSC) achievers and their co-workers and employers within the Finnish context. At the biennial international WSC, young people (aged 18-to-23 years) from over 60 countries demonstrate their skills in more than 40 trades. Individualized training for this competition is provided through the cooperation of vocational institutions (e.g., expert coaches, team leaders and competition panellists) and industry (e.g., mentors, sponsors, materials, equipment). Semi-structured thematic interviews (N=51) were conducted in 2013 and 2014 with former Finnish WSC medal or diploma winners (n=18) who had since begun their working lives (1-to-15 years of work experience). Their employers (n=16) and colleagues (n=17) were also interviewed. Results showed that in addition to vocation-specific knowledge and skills, problem-solving skills, creativity, social skills and self-regulatory skills were acknowledged as the most significant elements of vocational expertise. The findings also indicated that formal vocational education combined with deliberate practice and training based on expert mentoring improved the long-term career progress and vocational expertise of the WSC achievers.

Keywords: VET, Vocational Education and Training, Skilled Worker, Education-Work Relationship, Talent Development, Career Exploration

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1 Introduction

Recent research on VET underline the importance of integrating formal education and workplace learning. This reflects the need for students and teachers to learn how to mediate between the different forms of expertise and the demands of different contexts and how to navigate the boundaries between them (Griffiths & Guile, 2003; Guile & Griffiths, 2001; Tuomi-Gröhn, Engeström, & Young, 2003). In the biennial international WorldSkills Competition (WSC), young people (aged 18-23 years) from over 60 countries demonstrate their vocational competence in more than 40 trades (WSI, 2010). The competitors are selected to participate in the WSC based on their success in their vocational studies and in official national competitions. Before the four-day event is held, all competitors participate in an additional training programme. The individualized competition training is carried out in cooperation between vocational institutions (expert coaches, team leaders and panellists) and industry (e.g., mentors, sponsors, materials, equipment). As the WSC offers alternative perspectives on crossing the boundaries between formal education and the workplace, and it finds itself on the political agenda as a strategy to heighten the status of vocational education and training (VET) (European Council, 2010), it is highly relevant to more closely investigate the impact of skills competitions on participants’ learning opportunities, outcomes and motivation.

This paper builds on a large interview study (n=51) with vocational skills competition participants and their co-workers and employers in order to gather their perceptions of vocational expertise and school-to-work pathways. The specific focus is on the former WSC medal and diploma winners’ perspectives on the development of vocational excellence. The data includes interviews with Finnish WSC achievers (n=18) who have since entered working life (1-15 years of work experience), and their co-workers (n=17) and employers (n=16) from the same workplace. The fertility of the grounds for this research is based on two facts: Firstly, the former WSC achievers have been evaluated as excellent performers by an external international panel, and secondly, they have participated in a training program in which they received guidance from vocational expert mentors. The main goal of this study is to provide information about the advantages and disadvantages of the WSC training in relation to traditionally implemented VET in the context of Finland. This research focuses on an investigation of the WSC achievers’ and their non-competing co-workers’ perspectives on the main characteristics they consider important to performing well professionally, their vocational pathways after vocational education, and the most important external conditions that have supported their vocational development. The research questions asked by this study are the following:

(RQ1) How is vocational expertise perceived by the former WorldSkills Competition achievers in relation to their co-workers and employers?

(RQ2) What kinds of school-to-work pathways describe the former WorldSkills Competition achievers in relation to their co-workers?
(RQ3) What kind of influence has the WorldSkills Competition and training experience had on achievers’ vocational development and pathways in relation to vocational education?

2 Theoretical Framework

WorldSkills Competition
In the biennial international WSC, young people (aged 18-23 years) from over 60 countries demonstrate their vocational competence in more than 40 trades (e.g., health care, hairdressing and robotics). The WSC is the largest skills competition in the world, in which young professionals compete for the world championship (WSI, 2010). Each compet- itor receives a score (from 0-600 points) from a panel of international experts based on his or her performance during the four-day competition. Finland provides an interesting context in which to examine the influence of WSC because skills competitions have been included in the country’s strategic planning for international cooperation in VET by the Finnish National Board of Education (2014). The participants are the selected students of vocational upper secondary school. Instead of providing financial or material rewards, participation in international competitions allows vocational institutions to compare the quality and elements of their training to those of other countries and improve the skills and international competences of their students (e.g., through international networking) and teachers (e.g., by designing the tasks for the competitions, assessing the performance of contestants together with experts from other countries, and gaining an international perspective into training and teaching at the highest level) (Finnish National Board of Education, 2014).

The competition training system is coordinated by the non-profit organization SkillsFinland and supported by the Finnish Ministry of Education and Culture and the Finnish National Board of Education. The training is implemented in cooperation with vocational institutions (expert coaches, team leaders and WorldSkills Champion Panellists) and industry (e.g., mentors, sponsors, materials and equipment). The training period is mostly individualized and carried out in vocational institutions and workplaces. Moreover, it also includes collaborative practising (e.g., national team camps) (SkillsFinland, 2017). The content of the training is based on the earlier skills competition tasks that follow the VET requirements of vocational qualifications and specialist qualifications and acknowledge the perceptions of experts from different countries. The training is included with the components related to vocation-specific skills and knowledge as well as psychological and physical preparation to overcome competition-related issues (Saarinen, 2010). The training starts approximately one year before the competition. The competitors are selected to participate in the WSC based on their success in the national (Taitaja) skills competition or through training providers’ contacts with vocational institutions or companies (SkillsFinland, 2017). According to the WSC achievers interviewed in this study, the impetus to join the competition often comes from the VET teachers and their impressions of their students’ success, motivation and willingness to participate in the WSC.
Developmental Model of Vocational and Professional Excellence

The developmental model of vocational and professional excellence (DMVE) (Nokelainen, 2016; Pylväs, Nokelainen, & Roisko, 2015) is developed on the basis of the earlier empirical research on modeling of vocational expertise and excellence (Nokelainen, Stasz & James, 2013; Nokelainen, 2010; Nokelainen & Ruohotie, 2009; Nokelainen, Korpelainen, & Ruohotie, 2009; Korpelainen, Nokelainen, & Ruohotie, 2009; Ruohotie, Nokelainen, & Koripelainen, 2008; Tirri & Nokelainen, 2011; Nokelainen, Tirri, Campbell, & Walberg, 2007; Nokelainen & Ruohotie, 2002). The DMVE model is applied in this study to investigate the vocational skills competition participants’, their co-workers’ and their employers’ perceptions of the natural abilities, intrinsic characteristics (self-regulation) and extrinsic conditions that influence the development of vocational expertise. The model presented in the Fugure 1 is comprised of the following components: natural abilities (multiple intelligence theory [MI], Gardner, 1983), intrinsic characteristics (the socio-constructivist approach to self-regulation, Zimmerman, 2000), deliberate practice (Ericsson, 2006) and extrinsic conditions (domain and non-domain factors related to talent development, Bloom, 1985; Lave & Wenger, 1991; Tuomi-Gröhn et al., 2003).

![Figure 1: Developmental model of professional and vocational excellence (Nokelainen, 2016; Pylväs et al., 2015)](image)

The model illustrates the process of how inborn gifts develop into talents. Previous research in the domain of vocational skills competitions shows that gifted individuals with exceptional natural abilities (intellectual, creative, socio-affective and sensorimotor), intrinsic characteristics (self-regulation) and auspicious extrinsic conditions (physical, cultural and sociological milieus; exposure to important individuals; activities; accidents)
may reach a level of vocational excellence through deliberate practice. Individuals who fail to meet all of these conditions may still become competent professionals (vocational expertise) through deliberate practice. (Nokelainen, 2010; Nokelainen, Smith, Rahimi, Stasz, & James, 2012; Pylväs et al., 2015).

Natural Abilities
The structure of the main DMVE components (Nokelainen, 2016; Pylväs et al., 2015) is based on Gagné’s (2004, 2010) differentiated model of giftedness and talent (DMGT). Chance is understood to play a predominant role in the DMGT as it includes both genetic and parental endowments affecting natural abilities and intrapersonal characteristics (Gagné, 2004, 2010). To investigate the role of natural abilities (gifts) in the development of vocational expertise and excellence, DMVE applies the original seven-dimension version of Gardner’s (1983, 1993, 1999) multiple intelligence (MI) theory that consists of 1) linguistic; 2) logical-mathematical; 3) musical; 4) spatial; 5) bodily-kinaesthetic; 6) interpersonal; and 7) intrapersonal intelligence. According to Martin (2001), in the workplace learning context, linguistic intelligence refers to an ability to read and produce professional documents and to communicate actively and adaptively with colleagues and clients. Logical-mathematical intelligence is related to technical awareness and an understanding of hardware and software and objective and logical assessments of problems related to people or products. Musical intelligence is related to attendance to auditory cues, such as the tone, volume and sequence of people, machines or environments. Spatial intelligence involves the use of visual elements not only in work tasks and product or service development, but also in other concrete applications related to workplace productivity or marketing. Bodily-kinaesthetic intelligence relates to the motor skills needed to carry out various work tasks, such as an ability to use tools or other equipment efficiently. Interpersonal intelligence is vital in everyday interactions with colleagues and clients, for example, to lead and work within teams and to give constructive feedback. Intrapersonal intelligence refers to a person’s self-awareness of one’s own feelings, goals, ethics and abilities in changing situations at work.

Intrinsic Characteristics
Self-regulated learning has been studied in depth mainly in the context of social cognitive theory (Bandura, 1986). The term “self-regulation” refers to the process by which self-generated thoughts, feelings and actions are planned and systematically adapted to further one’s learning and motivation (Schunk & Ertmer, 2000; Zimmerman, 2000). Self-regulatory skills allow learners to modify their performance based on personal characteristics and environmental conditions (Zimmerman, 2000). Further, self-regulated learning is not limited to academic contexts, but can occur wherever learning - whether formal or informal - takes place (Kaplan, 2008). Research has shown that successful learners can monitor and regulate the following triadic elements: volition, motivation and self-reflection (e.g., Kitsantas & Zimmerman, 2002; Zimmerman, 1989, 1998; Zimmerman & Kitsantas, 2005). Motivational processes help the learner to formulate decisions and to promote decision-making, whereas volitional processes guide one’s subsequent enactment of the decision (Corno, 1989). Volition includes persistence, the will to learn,
endeavour/effort, mindfulness in learning, regulation, and evaluation processes. It also involves various control strategies (e.g., the allocation and control of resources, emotional attentiveness and motivational control strategies) and methods of processing knowledge (Zimmermann, 2006). The processes of self-reflection enable individuals to evaluate their experiences and thought processes (Bandura, 1986). According to Weiner (1974), individuals constantly seek to understand why an event has occurred. The learner may interpret the failure of a strategy as the result of too little effort (control beliefs) and then decide to increase his or her subsequent effort. The learner may also attribute his or her failure to a lack of ability (efficacy beliefs) when the response will most likely require increasing one’s effort. Attribution interpretations (control and efficacy beliefs) can lead to both positive and negative self-reactions because they are under one’s own control (Zimmerman, 1998; Zimmerman & Kitsantas, 1997). Positive reactions reinforce intrinsic goal orientation and positive interpretations of oneself as an employee, such as beliefs in one’s own competencies and opportunities (Merenti-Välimäki, Nokelainen, & Tirri, 2005; Nokelainen et al., 2007).

**Deliberate Practice**
Intrapersonal characteristics precede the practice component in the DMGT (Gagné, 2004, 2010) because practice is based on the presence of gifts (natural abilities) and intrapersonal characteristics (e.g., self-regulation). Deliberate practice is essential in talent development; in most fields, it takes ten years to become an expert (Ericsson, Krampe, & Tesch-Römer, 1993). Recent research, however, has shown that the ten-year rule is not absolute; in some fields (e.g., chess, sports) total mastery of the necessary skills takes about six years, whereas in other fields (e.g., music, science), reaching the top can take 20-30 years of deliberate practice (Ericsson, 2006). Ericsson’s relative approach to the study of experts’ characteristics assumes that the fundamental capacities and domains - the general reasoning abilities of experts and non-experts alike - are almost identical. The major difference between experts and novices is that through deliberate practice, the former are more knowledgeable than the latter (Chi, 2006). However, to truly understand the influence of the environment on the maximum level of performance, deliberate practice must be characterized and distinguished from other types of everyday activities in which learning may be an indirect result. Ericsson et al. (1993) define deliberate practice as a “highly structured activity, the explicit goal of which is to improve performance” and link deliberate practice to such factors as engagement, motivation and monitored performance.

**Extrinsic Conditions**
Environmental conditions also follow intrapersonal characteristics in the DMGT (Gagné, 2004, 2010) as the differences in “normal” environments fail to explain differences between average and outstanding achievement (Greenspan, Solomon, & Gardner, 2004). However, environmental conditions have been proven to play an important role in talent development. From a social-cognitive view of self-regulation, expertise develops from both external support and self-directed practice sessions (Bloom, 1985; Zimmerman, 2006). Earlier talent research (Bloom, 1985; Greenspan, Solomon, & Gardner, 2004) has
identified three stages of talent development through which talented children progress: initial participation (first attraction to the activity and initiation of formal instruction), perseverance (acquisition of basic and intermediate skills), and mastery (building upon acquired skills to develop expertise and to compete on higher levels). According to Bloom (1985), parents make the talent field accessible and desirable to their children. The home environment provides the structure necessary for early learning (time, valuation, support, resources, and instruction) and instils the child’s work ethic. The work ethic applies initially to most activities in the home and school, and later relates most directly to learning and participation in the chosen talent field. The social reactions of parents and other individuals in the immediate environment establish a child’s original motivation and engagement in the domain, and when added to the accumulated experience and the help of teachers and coaches, a developing individual learns to internalize methods for assessing improvement, monitoring the effects of practice and setting goals (Bloom, 1985).

In the context of workplaces, the contribution of individual assistance and support by more experienced co-workers also seems to provide a significant basis for learning (Billett, 2001; Virtanen, Tynjälä, & Eteläpelto, 2014). Without the existence of a theoretical basis for understanding and guidance from experts, student learning at work may remain unsystematic and incidental (Collin & Tynjälä, 2003; Virtanen & Tynjälä, 2008). In socio-cultural theories of workplace training, learning is becoming a process situated within the framework of participation rather than within the learner, even if it does not replace notions of individual learning (Hager, 2013). Eraut (2000) argues that aspects of an individual’s knowledge accumulated through lifelong learning will always exist and become unique to them. Still, an individual is likely to encounter knowledge that is shared among the group with which he or she works. Lave and Wenger (1991) have proposed that learning happens in everyday interactions and through participation in communities of practice. Learning occurs as part of a process in which learners gradually move from peripheral participation to full participation in the community of practice. However, the master-novice relationship and the professional monopoly on expertise (based on such factors as age or status) may be important elements but are also problematic. Multiple contexts demand and afford different but complementary - yet sometimes conflicting - cognitive tools, rules, and patterns of social interaction (Fuller & Unwin, 2004). The criteria of expert knowledge and skill is defined differently in various contexts; by operating in, and moving between, multiple parallel activity contexts, experts face challenges when negotiating and combining elements from different contexts to achieve hybrid solutions. According to Tuomi-Gröhn et al. (2003), the school should prepare its teachers and students to work as boundary crossers between the worlds of school and work and engage students in real-life processes during their studies as students can see things from a fresh angle, have time to reflect and take the initiative before they are caught up in the routines and dynamics of the workplace.
3 Methods

Participants
The data includes interviews with Finnish WSC medal or diploma winners (n=18) who have since entered working life (1-15 years of work experience), and their co-workers (n=17) and employers (n=16) from the same workplace. The WSC achievers interviewed participated in the WSC between 1997-2011 and earned either a gold, silver or bronze medal, or a diploma (for being awarded more than 500 points). Going through the WSC high-standard evaluation process, the WSC achievers are being considered to perform on the high level of expertise in this study. To account for the differences between vocational fields, the interviewees were chosen to represent three different trades designated by the researchers: 1) customer service; 2) manual labour; and 3) technical work (Table 1).

<table>
<thead>
<tr>
<th>Participants</th>
<th>WorldSkills achievers (n=18)</th>
<th>Co-workers (n=17)</th>
<th>Employers (n=16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, $M_{\text{age}}$ ($SD_{\text{age}}$)</td>
<td>29.4 (5.012)</td>
<td>32.0 (7.433)</td>
<td>46.1 (7.191)</td>
</tr>
<tr>
<td>Female n(%)</td>
<td>7 (13.7)</td>
<td>8 (15.7)</td>
<td>7 (13.7)</td>
</tr>
<tr>
<td>Male n(%)</td>
<td>11 (21.6)</td>
<td>9 (17.6)</td>
<td>9 (17.6)</td>
</tr>
<tr>
<td>Work experience, years ($SD$)</td>
<td>8.7 (4.081)</td>
<td>12.2 (6.978)</td>
<td>24.0 (8.556)</td>
</tr>
</tbody>
</table>

Instrument
A total of 51 semi-structured thematic interviews (70-90 minutes) were conducted in 2013-2014 in 18 workplaces. Interviews served as the research method offering some leeway to pursue the angles deemed important by the interviewee, while also enabling the interviewer to focus the conversation on issues considered important to the research (Brinkmann, 2014). The interview instrument was developed on the basis of our previous research on vocational expertise and focused on examining the significance of natural abilities, intrinsic characteristics (self-regulation) and extrinsic conditions in the development of vocational expertise (e.g., Pylväät et al., 2015). Questions such as “How would you characterize an employee who succeeds well in your vocation?” or “How do you think that vocational education has prepared you for working life?” were included in the interviews.

Analysis
We used qualitative content analysis to analyse the research data. Qualitative content analysis can be defined as a research method used for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Hsieh & Shannon, 2005). The aim of the analyses was to create conceptually and empirically grounded categories related to the analytical context and rooted in empirical material to reflect the topic of the study (e.g., Dey, 1993). We obtained the text data from transcribed semi-structured interviews, which we managed
Results

How is vocational expertise perceived by the former WorldSkills Competition achievers in relation to their co-workers and employers?

The WSC achievers and their co-workers and employers shared a similar view of the most important skills related to vocational expertise: logical-mathematical skills, interpersonal skills and self-regulatory skills. The role of intelligences (natural abilities) will first be discussed, followed by a discussion on the role of self-regulatory skills.

Natural abilities. According to the interviewees, vocation-specific skills may not be the most critical of all the vocational skills, but they are required to perform well in vocational fields. Depending on the vocational field, one must have the necessary vocation-specific skills emphasising e.g., sensorimotor skills (bodily-kinaesthetic abilities supporting manual skills) and/or logical-mathematical skills (domain-specific knowledge). All of the interviewed groups highlighted the importance of logical-mathematical skills, but there were also the differences in terms of the cognitive skills that were considered the most important. The WSC achievers and employers underlined the importance of problem-solving skills more than the co-workers did and they believe that sufficient cognitive skills are the foundation for actualizing vocational excellence. These two groups discussed the importance of a broad understanding of the work processes that enable an employee to handle multiple tasks and to overcome various and unexpected problems independently and quickly. Moreover, the employers highlighted the importance of commercial expertise as many vocational trades involve working in private companies.

Creativity was one of the vocational skills highlighted in many of the interviews, particularly by the WSC achievers. Creativity was included with the artistic and visual skills needed in vocations such as florist and hairdresser. On the other hand, creativity was related to the creative thinking that may inspire a person to create something new, such as a new idea or method of working. Thus, creativity was also closely connected to problem-solving skills and innovativeness. To perform at the level of vocational excel-
ience, a person was considered to need the ability to create, innovate or solve problems independently. “Excellence then requires more logical thinking, to be able to apply everything one has ever seen, heard or done. Such skills and adequate work experience help one to become a top expert” (WSC achiever).

All of the interviewed groups also emphasized the significance of interpersonal skills as an element of vocational expertise. Several aspects of interpersonal skills were brought up in the interviews: the knowledge of human nature, extroverted personality, energetic and positive attitude, open-mindedness and encouragement, flexibility and humility, customer service orientation, teaching skills and mentoring skills. In some cases, interpersonal skills were even seen to compensate for the lack of some other vocational strengths such as manual skills. Only a few of the WSC achievers and their co-workers mentioned spatial skills (three-dimensional skills), linguistic skills (language skills, writing, documentation and guidance) and intrapersonal skills (recognizing one’s own strengths and weaknesses) in the context of vocational expertise.

Self-regulation. The interviewees of the three target groups specified multiple characteristics related to self-regulation that they considered important or vital to their vocational expertise and vocational development. Most importantly, the interviewees emphasized the significance of the following self-regulatory skills: volition (concentration, calmness, carefulness and organizational skills) and internal motivation (ambition to learn and develop professionally, initiative). Volition was described by an interviewee: “And perseverance and patience is needed in everything, because if there are any problems or other hassles, it takes time to make sense of it. Perseverance is needed, at least” (Co-worker).

The co-workers, in particular, highlighted the importance of internal motivation in the vocational field and work tasks. There were also a few interviewees in each group of interviewees who discussed external motivational factors that may have an influence on one’s professional development, such as ambition, expectations of career progression and ongoing changes in the work environment. Overall, motivation was recognized as an important prerequisite for vocational expertise. Self-reflection was acknowledged by all of the target groups even if it was less emphasized than volition and motivation. Tolerating stress in high-pressure work situations and reflecting on one’s own performance were both perceived as important in working life.

What kinds of school-to-work pathways describe the former WorldSkills Competition achievers in relation to their co-workers?

To analyse the participants’ vocational pathways, the results follow the three identified stages of talent development (Bloom, 1985; Greenspan, Solomon, & Gardner, 2004) discussing initial participation (first attraction to the vocational field), perseverance (acquisition of basic and intermediate skills in VET), and mastery (building upon acquired skills to develop expertise and to compete on higher levels at work).

Initial interest. The background to the interviewees’ initial interest in their vocational fields was largely consistent among both the WSC achievers and their co-workers. The most common statements were related to an interviewee’s personal interest in their chosen
vocational field and their family background: “Maybe it was because I saw my mother working and enjoying it, and I saw how much she got out of it” (Co-worker).

Family and friends were the greatest influences on the choices of profession, thus supporting Bloom’s (1985) concept that parents make the talent field accessible and desirable to their children and the home environment provides the structure necessary for early learning. Our data shows that the decisions were guided by such factors as family members’ professional backgrounds, the immediate family environment (e.g., available equipment, authentic work experiences) and the family members’ confidence in the education system and their children’s aptitudes for certain skills areas. A few of the interviewees from both target groups had also found their career path through work experience (e.g., workplace training in secondary school or non-military service) or a vocational school tour. In addition, some of the interviewees had chosen their career based on their study success or education offerings.

I came from a family of farmers, so manual skills have always been there. My uncle developed patents for some agricultural stuff, so it surely comes from there somewhere. In fact, I can see the same thing now in my own two sons; somehow they are more technically oriented (WSC achiever).

Study period. The WSC achievers’ and their co-workers’ experiences of their study period diverged at some level. Most of the WSC achievers considered themselves more successful than average students. They actively studied not only in a formal setting, but also in their spare time. They also greatly emphasized their internal motivation towards the vocational field and their enthusiasm for vocational education throughout their studies. Some of the WSC achievers described themselves as conscientious and hard-working students and the others underlined how their advanced studying skills helped them to succeed in their studies. Furthermore, some of the interviewed co-workers considered themselves to be more successful in their studies than average students. Among those interviewees, study success was also seen as being based on their conscientious and hard-working characteristics, study habits and strong motivation.

Yes, I was different from others. If I think back on our class, then yes, I certainly was the only one who studied from morning until evening... Maybe I differed in the sense that I had a strong will to learn. I think that is why I was chosen to participate in this event even though we would have had, as far as I recall, three other candidates to go (WSC achiever).

While only a few of the WSC achievers considered themselves to be average students during their studies, most of the co-workers assessed themselves as having performed at an average level. Their average or lower level of study success was seen as the result of such factors as young age, lack of motivation, lack of earlier work experience or random choices made in their career and training.

Working life. The WSC achievers acknowledged their strong professional networks, easy school-to-work transitions, high levels of expertise and career success more often than
their co-workers. Half of WSC achievers mentioned that finding a job after graduation was easier because of the contacts they had gained during the skills competitions. The WSC achievers also described their career development in working life as better than average more often than their co-workers. This was supported by more than half of the employers who acknowledged the exceptionally high level of expertise of the interviewed WSC achiever working in their organization: “I could let [the WSC achiever] run the business quite confidently, he is that rock-solid a professional; he knows what to do” (Employer).

The higher level of vocational expertise was included with vocation-specific natural abilities (e.g., technical knowledge, sensori-motor skills) and self-regulatory skills (e.g., motivation, self-confidence, volition, self-reflection and learning skills). A little more than one-third of the employers also considered the WSC achievers working in their organizations to be above average in terms of career development.

For sure, the biggest factor is the contacts. But the fact is that the contacts were earned through my success in vocational competitions. Let’s put it this way: if I were to become unemployed for some reason, I would find a new job through these contact networks, and very quickly (WSC achiever).

Some (less than one-third) of the co-workers also described their career development in working life as better than average and believed that the work experience or practical training they gained during their studies had influenced their school-to-work transition. Those co-workers who also felt that they had superior expertise to average employees acknowledged their strong self-regulatory skills.

The WSC achievers’ and co-workers’ thoughts concerning their work-related future ambitions revealed no particular differences. Both groups discussed the significance of lifelong learning, the ambition to learn and motivation to develop professionally. Career development was related to assuming responsibility for work tasks and further education. The common future interests of the co-workers were related to creating a private enterprise, engaging in further education, working in international environments and projects or be promoted in the organization. The WSC achievers emphasized slightly more often their career development, professional development and teaching/coaching (e.g., vocational skills competitions) ambitions. Moreover, a few of the WSC achievers mentioned the possibility of a career change, two of them for medical reasons.

What kind of influence has the WorldSkills Competition and training experience had on achievers’ vocational development and pathways in relation to vocational education?

The study had a specific focus on former WSC achievers’ perspectives on the advantages and disadvantages of skills competitions. The empirical finding implied that the WSC achievers acknowledged several benefits of the WSC and training. In particular, they reported gaining a boost in their career due to gaining access to a high level of expertise and extensive professional networks. The WSC supported the WSC achievers’ school-to-work transitions and strengthened their reputations and vocational confidence: “New
situations will not make you nervous, because you have experienced so much that you know how to handle them” (WSC achiever).

Skills competition experience and training was also considered to develop or strengthen self-regulatory skills such as volition (e.g., perseverance and exactness), motivation in the vocational field and self-reflection (e.g., stress-tolerance and self-confidence), as well as logical-mathematical skills (e.g., technical knowledge and skills, problem-solving skills and special expertise) and interpersonal skills (e.g., collaborative learning and customer service).

Some of the employers also highlighted the advantages of the skills competitions and training, as they had found the WSC achievers to have strong self-regulatory skills (e.g., motivation, volition and determination), logical-mathematical skills (e.g., technical knowledge and skills) and interpersonal skills (e.g., customer service and social skills). However, a few of the WSC achievers perceived no discernible advantage from participating in the skills competition. Some of those interviewees stated that the competition tasks were inconsistent with real working life, while others noted that their success went unacknowledged outside of the competition environment or the training failed to meet expectations.

The group most satisfied with formal VET was the WSC achievers who considered their studies to have been an important basis for their vocational expertise and considered them advantageous later in their career: “I feel that [. . .] I have gained good skills there [vocational education]. And the thing that I have certainly understood over the years is specifically lifelong learning” (WSC achiever).

Participation in the skills competition and training had even sparked some of the WSC achievers’ interest in teaching in vocational institutions or coaching in skills competitions. Overall, the significance of workplace learning was underlined by all groups of interviewees. Both the WSC achievers and their co-workers believed that an authentic work environment enables a student or novice employee to explore actual work tasks, to learn by doing and to become familiar with the hectic schedules of working life. One of the WSC achievers acknowledged that the WSC and training provides one with the opportunity to devote more time to learning, which one seldom has in the workplace. Those employers who described workplaces as “the main learning environment” felt that formal VET only provides a student with certain basic skills to use in the beginning of their career, based on the assumption that the rest of their knowledge and skills will be acquired on-the-job.

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

Some of the WSC achievers, co-workers and employers also expressed their discontent with formal vocational education. The criticism was concerning the outdated knowledge (lack of recent work experience and further education) of teachers, obsolete technology and devices as well as weak or theoretically oriented curriculum. However, some of
the statements were targeted at certain institutions rather than VET in general. Finally, most of the criticisms of formal vocational education hailed from the employer-interviewees. The employers were especially worried about the lack of commercial expertise (business skills) that was considered important or crucial in any vocational field.

5 Conclusions

This study examined the perceptions of former WSC medal and diploma winners, their co-workers and employers regarding vocational expertise and experiences of school-to-work pathways. The specific focus of our investigation was to better understand the WSC achievers’ perspectives on the influence of vocational skills competitions on their subsequent professional growth processes and career development. The findings showed that the WSC achievers and their co-workers and employers shared a common view of vocational expertise included with both natural abilities and self-regulatory skills. Vocation-specific skills, sensorimotor skills (manual skills) and logical-mathematical skills (contextual knowledge) were seen as the foundation for performing well in a vocational field. All groups emphasized the importance of interpersonal skills; possessing good social skills was even seen as a way to compensate for weakness in some other areas. Self-regulatory skills, volition, motivation and self-reflection, were acknowledged as characteristics that are vital to one’s vocational expertise and vocational development. WSC achievers differed from their co-workers by placing a strong emphasis on the importance of logical-mathematical skills (understanding overall work processes, creative thinking and quick and independent problem-solving skills). By contrast, their co-workers dominated in discussions related to the significance of internal motivation.

The results showed some differences between the WSC achievers’ and their co-workers’ experiences in their school-to-work vocational pathways. Similar factors influenced both the WSC achievers’ and their co-workers’ choice of career, whether it reflected their personal interest in the vocational field or was based on the recommendation of family members or friends. In a few cases, the decision was based on previous work experience, academic success or the available study opportunities. During their studies, the co-workers’ vocational pathways diverged in the sense that most of the WSC achievers, but only a few of the co-workers described their academic success as better than average. Success in their studies was related to strong self-regulatory characteristics, such as internal motivation towards the vocational field and volition (a conscientious and hard-working attitude), coupled with engaging in deliberate practice (individual active studying and advanced studying skills). The significance of workplace learning was underlined more often than formal VET by all the groups of interviewees. Most of the WSC achievers acknowledged the importance of both formal education and WSC to their development of vocational excellence. However, the advantages provided by the WSC and training were also particularly related to crossing the boundaries between student life and working life, thereby providing the student with an opportunity to create extensive professional networks and strengthen their vocational confidence in order to make the school-to-work transition easier and more efficient.
6 Limitations

This study describes the self-reported statements of the three different groups of interviewees with the aim of revealing some interesting findings regarding general factors related to vocational development. To draw further comparative conclusions between the target groups, however, the differences in the participants' backgrounds (e.g., vocational field, vocational school and current employer) create some limitations. Further research focusing on only one specific vocational field might yield more extensive information about vocation-specific career stages and turning points. Furthermore, one of the main factors that determine the success of content analysis and the trustworthiness of the study is a coding process (e.g., Hsieh & Shannon, 2005; Krippendorff, 2013; Schreier, 2014). Authentic citations have provided examples of meaningful pieces of the text behind the inferences and categorizations and empirical material, as qualitative researchers tend to acknowledge the possibility of multiple interpretations of textual units (Krippendorff, 2013; Patton, 1990). An empirically validated analytical framework served as the basis for the categories. As one of the most critical phases of the content analysis is the requirement of mutual exhaustiveness and exclusiveness (e.g., Schreier, 2013), all relevant aspects of the transcript were intended to cover a category, and any unit of analysis was to be coded only once under one main category to ensure coding consistency.

7 Discussion

In this paper, we have discussed the role of natural abilities and intrinsic characteristics (self-regulatory skills) in the development of vocational expertise and excellence. The vocational skills itemized by the interviewees of this study support previous research underlining the significance of both natural abilities (intellectual, creative, socio-affective and sensorimotor) and self-regulatory skills (Nokelainen, 2010; Nokelainen et al., 2012; Pylväs, Nokelainen, & Roisko, 2015) in vocational achievement. According to Gardner and Moran (2006), multiple intelligences can be related to occupational roles; however, in work contexts, the power of an multiple intelligences (MI) theory can be even greater through an examination of the ways the intelligences interact in individuals or within teams. A variety of potential combinations create different patterns to allow for a wider array of competences and performances to arise as one intelligence can mediate and constrain, compensate or catalyze another. According to the Gardner’s and Moran’s (2006) approach on interacting intelligences, in this study the WSC achievers underlined the importance of logical-mathematical skills intertwined with creativity. On the other hand, interpersonal skills were considered to compensate for the lack of some other vocational skills. Thus, the findings support the idea that what matters is not only how intelligent a person is, but how varying levels of different intelligences interact within a particular situation or job (Gardner & Moran, 2006). Further research is needed to better understand the crucial combinations of skills and intelligences needed in changing working life and to go beyond the traditional subject teaching in VET. The same complexity applies to developing vocational expertise in social contexts with multiple people, whether the focus
of learning is on cognitive, motivational or emotional processes. Collaborative working requires regulative learning skills to co-construct shared task representations, shared goals and shared strategies (Järvelä & Hadwin, 2013). In working life, the amount of information processing required is usually more than one person can even handle, thereby invalidating the notion of a single, all-purpose intelligence of a single individual (Gardner & Moran, 2006). In addition to intertwined intelligences, the understanding of shared expertise should also be involved in the pedagogical planning of study assignments to provide opportunities for VET students to develop a sufficient foundation for lifelong learning.

The findings support Bloom’s (1985) view on the home environment providing the structure necessary for early learning (e.g., work ethics, motivation and engagement in the domain). Further, in order to control their learning processes independently during their studies and later in their working lives, students were considered to need opportunities to develop strong self-regulatory skills. Following Ericsson’s et al. (1993) approach, the empirical results of this study emphasised the importance of deliberate practice to talent (or vocational) development and its connection to such factors as engagement and motivation. Some components of the WSC and training are certainly creating advantageous patterns that ought to be developed further and exploited in VET in general. The time that motivated experts gave to the WSC achievers to practise their vocational skills in authentic environments was perceived as having a positive influence on their motivation in the vocational field, development of vocational excellence, school-to-work transition, and self-confidence. The study of Wilde and James Relly (2015) also found a parallel result; the success of UK participants in the WSC is due to the intense effort, commitment and teaching and learning of the training managers and competitors. This study suggests focusing greater attention on VET students’ development of learning skills and self-regulatory skills during vocational education. There is need to provide students with the possibility of strengthening those skills within the sphere of vocational education through the help of teachers but to recognize potential advantages of collaboration with experts from working life.
References


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Humanistic Elements in the Educational Practice at a United States Sub-Baccalaureate Technical College

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Abstract: Humanism has never been able to establish a firm place in technical education, which remains predominantly pragmatist in response to industry needs, certification requirements and educational standardisation. However, after a period of decline, humanism has made somewhat of a comeback as part of the movement toward student-centred education. Research conducted at a technical college showed that although humanistic elements are largely absent from educational practice in post-secondary technical education, they are not detrimental to the achievement of stated educational objectives. This research indicated that including humanistic elements in educational practice will enable instructors to be more effective in helping students to develop skills in relation to team work, problem-solving, systems improvement, lifelong learning and other areas that are becoming increasingly necessary for success in the workplace. The specific recommendations from this research include a constructivist approach with a focus on contextual teaching and learning using situated cognition, cognitive apprenticeships, anchored instruction and authentic assessment. At the same time, some suggestions for improving professional development for teachers by using a Gestalt approach along with self-study in the context of learning communities have been discussed.

Keywords: VET, Vocational Education and Training, Technical Education, Vocational Education, Humanism, Humanistic Methods, Educational Practice

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1 Introduction

Although humanistic elements have been present in education since antiquity, educational humanism came into its own only after World War II. Its early proponents deplored the fact that existentialist thinking in response to the horrors of war had led to a distrust in traditional values, including those that support and encourage learning. Behaviorist teaching was seen by many as unencumbered by outmoded values, but humanists were unhappy with behaviorism’s focus on skills training rather than fulfilling human potential and experiencing emotional growth (DeCavalho, 1991).

The breakthrough for educational humanism in the United States came in the 1960s and 1970s. The Civil Rights and Counterculture movements of the 1960s encouraged people to question social values and institutions, so educators began to take a hard look at schools in the inner cities, which tended to enroll large numbers of minority and immigrant students and were often located in high-crime and economically depressed neighborhoods. Scholars attributed the pervasive feeling of hopelessness in these schools to fractured communities, families, and cultures; onerous bureaucracies; and a plethora of social ills like violence, crime, intolerance, poverty, teen pregnancy and suicide, and gang activity. Repairing the social and community structures that could prevent such ills was identified as the best approach, yet Civil Rights legislation did not provide adequate funding. Meanwhile, school buildings were falling into disrepair and teachers remained underpaid, a common problem in the United States where school funding tends to be tied to local property tax revenue. Humanistic education was not seen as a panacea but as a way to balance the various needs and re-ignite in teachers and students a new passion for education (Rogers & Freiberg, 1994).

When it seemed in the late 1970 and early 1980s that progressive and humanistic ideas might finally be able to gain a foothold in vocational education practice and educators began to pay attention to the lives of workers and their needs like decent work and professional dignity (Kincheloe, 1995), the National Commission on Excellence in Education (1983) published a report titled A Nation at Risk, which set off the academic standards movement that has come to dominate United States education reform. Instead of moving toward more open, individualized, and student-driven practices, vocational education instead moved further toward credentialing, that is, establishing worker qualifications and competencies. Humanistic ideas such as personal development and autonomy were seen as antithetical to effective certification test preparation and the need to conform to market demands (Veugelers, 2011b).

Within the past twenty-five years, however, some authors have once again recognized the value of humanistic ideas for today’s educational challenges, called for humanistic education to be “retrieved, reevaluated” (Nemiroff, 1992, p. 5), and promoted a renewed emphasis on personal development, meaningful learning, and social justice (Veugelers, 2011b) in an effort to improve student learning through the inclusion of issues outside of school and work (Westheimer, 2011). Considering this context, the purpose of this study was to investigate to what degree humanism might still be present in United States post-secondary technical education practice and which benefits instructors perceive in the use of humanistic methods.
2 Research Questions

1. According to instructors’ perceptions of their teaching, which humanistic elements are present in the instruction at one United States post-secondary technical college?

2. How do instructors at one United States post-secondary technical college feel about the inclusion and usefulness of humanistic elements in post-secondary technical instruction?

3 Literature Review

3.1 Humanistic Values and Principles

Humanism focuses on the dignity, autonomy, freedom, integrity, well-being, equity, and potential of learners. Humans enjoy making their own decisions about their lives, and educators must trust that learners’ educational choices are indeed well-reasoned (Aloni, 2011; Brockett, 1998; Hitt, 1973; Nakata, 1972; Veugelers, 2011a; Willers, 1975). The ultimate goal of humanistic education is to develop self-actualized individuals (Nemiroff, 1992; Willers, 1975). If learners have control over their own learning, any personal development and increased sense of social justice can help others grow and have beneficial effects on society as a whole (Aloni, 2011; De Groot, 2011; Greenleaf & Griffin, 1971; Hitt, 1973; Simpson, 1976; Westheimer, 2011).

Weinberg and Reidford (1972) suggested four components of successful learning: a free environment, relating learning to one’s own experiences, cooperation, and learning from the inside out. First, students need to have the freedom to delve into any topic they wish for learning to take place (Willers, 1975). Second, students are most motivated when what they learn helps them make sense of their lives and their surroundings. Third, students learn best under a constructive relationship with their instructors where feedback is seen as assistance to promote learning and growth rather than criticism. Finally, the more content is related to learners’ self-concept, the more meaningful learning becomes, and the less likely it is to be rejected (Aloni, 2011; Patterson, 1973; Veugelers, 2011b).

To guide students along the path to self-actualization, the instructor’s role is to help students grow emotionally and intellectually, to become independent and self-directed learners (Aloni, 2011; Hitt, 1973; Patterson, 1973; Zahorik & Brubaker, 1972). Learning objectives emphasize not only cognitive but also affective and psychomotor competencies. Instruction takes places through personal experiences in the form of projects, peer teaching, service learning, and the like. Instructors make sure that students have the resources to reach their goals but become involved only in case of student questions or risk of harm (Rogers & Freiberg, 1994; Veugelers, 2011b). This facilitator role is an integral part of humanistic instruction. Instructors encourage students to explore their interests, develop their talents, and become aware of social welfare issues (Aloni, 2011), and instructor confidence in students’ capacity to develop is the starting point for students to take charge of their own learning (Rogers & Freiberg, 1994; Nemiroff, 1992; Zahorik & Brubaker, 1972). All these requirements combine to help instructors...
develop the one skill that makes them expert facilitators: personal attention through reflective listening that develops respect for other people’s feelings and thoughts and allows students to focus their energy entirely on their learning (Aloni, 2011; Kraft, 1975; Veugelers, 2011b).

Successful instruction is built on a series of conditions defined by Patterson (1973) and guided by sixteen principles listed by Shapiro (1986). These in turn are part of four different levels of involvement: natural learning, co-planning, pulling out the props, and self-direction (Kraft, 1975). Natural learning encourages students to think creatively and express their ideas, form hypotheses, choose methods of finding information to test these hypotheses, and construct knowledge from their findings (Aloni, 2011; Greenleaf & Griffin, 1971; Patterson, 1973; Veugelers, 2011b). Co-planning helps students think about why they want or have to learn something. Students usually choose a problem that is related to their lives, understand the problem fully, conduct an inquiry, and come up with alternative solutions. Evaluation then looks at outcomes and suggests adjustments and changes for the future (Greenleaf & Griffin, 1971; Patterson, 1973). In the third level, pulling out the props, a wholesale elimination of teaching aids, textbooks, tests, syllabi, curricula, and grades is envisioned because their true purpose is to force knowledge upon students rather than allow them to seek it and grow on their own terms. The instructor’s role is to find out how students learn best and to solve the problem of those reluctant to learn (Greenleaf & Griffin, 1971).

3.2 Failures and Criticism

After being one of the early proponents of a humanistic approach to education, Patterson (1987) conceded that all the benefits humanism was supposed to have brought had not come to pass, and he concluded that humanism was no longer a valued part of the American educational landscape. Several reasons for such an assessment have been proposed:

1. Confounding educational humanism with secular humanism compelled some parents to oppose humanism on the grounds that it was hostile to their religion and led to a collapse of morals (Patterson, 1987).

2. Humanistic instructors were never able to state humanistic principles in clear, concise, and jargon-free language. Instead, their persistent vagueness made everyone wonder how exactly the theory would be applied in the classroom (Conklin, 1984; Patterson, 1987; Willers, 1975).

3. The idea of learners’ being responsible for their own learning seemed like something that many students would not be able to do responsibly. If that was so, some asked, was learner responsibility not in fact just another type of instructor preference foisted upon their students? Educators’ responses to such challenges were often less than satisfactory (Conklin, 1984).
4. As a result of the standards-based movement’s focus on cognitive and academic development, affective methods were seen as hostile to reaching academic goals (Patterson, 1987).

5. The strong individualism and emphasis on the present, some feared, led to selfish behavior, hedonism, and a lack of concern for social issues, accomplishing exactly the opposite of what humanism set out to do (Brockett, 1998).

6. A focus on the individual must mean that each student needs to be treated separately, and this need for individual approaches leads to a fragmentation of a humanistic whole.

Despite such issues, Patterson (1987) asserted that if changing instructor attitudes and behaviors were part of pre-service teacher training, these obstacles might be overcome. In addition, if the name of the movement were changed (he suggested “invitational learning”), there might be less apprehension among stakeholders and a renewed opportunity for humanism to make an impact.

3.3 Vocational Education in the United States

After the beginning of the industrial revolution in the United States in the early nineteenth century, vocational education (now called career and technical education or CTE) saw an increase in the number of industrial schools offering short-term programs to train machine operators in skills for mass production work while comprehensive school-based training programs consisted mostly of theory. The manual training movement of the late 1800s, however, emphasized practical skills and introduced the idea that (1) high school students needed exposure to careers that did not require a college degree and (2) disciplines other than academics could and should be taught in the public schools (Gordon, 2014).

The manual training movement also begot what are probably the two seminal discussions in the history of American vocational education, the debates between Booker T. Washington and W.E.B. DuBois in the closing years of the nineteenth century on the one hand and between John Dewey and David Snedden/Charles Prosser in the second decade of the twentieth century on the other. Washington, the founder of Tuskegee Institute in the State of Alabama, an industrial school for African Americans, believed that vocational education needed to be part of public education because it led to economic independence, which in turn led to better social integration and financial security and eventually more civil rights. DuBois, author, scholar, and one of the founders of the National Association for the Advancement of Colored People (NAACP), a major U.S. civil rights organization, was convinced that integration and economic stability were meaningless without civil rights and insisted that the latter be achieved first (Gordon, 2014). This difference of opinion has remained a contentious topic up until the present day.

David Snedden, professor of educational administration at Columbia University in New York, and his student Charles Prosser, who later became executive director of the
National Society for the Promotion of Industrial Education (NSPIE), emphasized the integration of theory and practice, productive work as part of the training curriculum, and financial incentives for students. Prosser’s sixteen theorems stressed preparing students for the workplace, using instructors with a background in industry, designing training to meet the needs of industry, and limiting vocational education to those interested and motivated to do well in it. John Dewey, longtime professor at the University of Chicago and arguably the most influential figure in American educational reform in the first half of the twentieth century, worried that vocational education had too narrow a focus and made workers too dependent on their industry employers. Instead, he advocated for preparing students for life rather than work, teaching transferable skills, and offering vocational education to everyone. Ultimately, Prosser’s idea of a dual system with academic education taught in high schools and technical education in trade schools won out and was reflected in the first major vocational education legislation in the United States, the Smith-Hughes Act of 1917 (Gordon, 2014). This division has remained the de facto standard for American vocational education since.

Education in the United States falls under the purview of each state, meaning that there is no “American” career and technical education (CTE) system per se but 50 different state systems. At the secondary level, CTE tends to be subdivided into the following eight categories: agricultural education, business education, family and consumer sciences education, health occupations education, marketing education, technical education (preparation for technical occupations), technology education (technological literacy), and trade and industrial education (preparation for industrial occupations and re-training). In addition, the U.S. Department of Education has identified sixteen career clusters for broad industry areas that include academic and technical knowledge and skills. Students at this level typically spend part of their time at a comprehensive high school and another part at a CTE facility operated by the local school district or at an area CTE center (Scott & Sarkees-Wircenski, 2008).

At the post-secondary level, vocational programs are customarily offered at CTE centers, community colleges, or technical colleges. The principal purpose of these programs is preparation for employment and ensuring a supply of skilled workers for industry. Students finishing a CTE center program will earn a certificate or diploma whereas students at community or technical colleges usually earn a two-year Associate of Science (A.S.) or a three-year Associate of Applied Science (A.A.S.) degree. These latter students are subject to the same general education requirements that other college students must fulfill (writing, communication, math, science, American history and government, and other requirements that vary from state to state) and may transfer academic credits to another university. Many colleges also offer certificate programs or corporate training and re-training (Cohen & Brawer, 2008).

The recent challenge for CTE has been to train enough workers for the high-tech information technology jobs that will keep the U.S. competitive globally as developed countries experience the shift toward a knowledge economy (Gordon, 2014). This task requires better integration of technical and academic education, awareness of cultural issues in an increasingly diverse society, and an improvement in the transition from secondary to post-secondary education and on to the workplace. Difficulties lie in the
tendency of employers, schools, educators, parents, community organizations, etc., to protect their own turf and be extremely cautious about engaging in true cooperation. Another persistent issue has been the resistance of employers to offering on-the-job experiences to students and paying interns for their work, requiring schools to fill the gap. A third problem has been that some public officials think taxpayer money ought not to be spent to benefit private enterprises while industry resists involvement out of fear that it will get no return on its investment (Kincheloe, 1999).

Hickox and Moore (1995) further argued that the growing emphasis in the United States on credentialing has compelled technical instructors to shy away from using humanistic methods, which are seen as the culprit that prevents students from being prepared for work by not focusing on employment-related knowledge. At the same time, rapid technological advances and the need for retraining resulting from the offshoring of well-paying American manufacturing jobs have led to rising job requirements that are often not matched by rising salaries, and workers become reluctant to engage in more training when the payoff is at best doubtful. Humanism can change this situation in two ways: It can help workers see the contribution of their learning to their personal development and the development of their communities, especially in terms of equity for ethnic minorities, and it can attract new groups of potential employees to advanced technical training in occupations where American employers still have trouble filling available openings (Aikenhead, 2004).

In addition, humanism can help learners lose the fear of basic math and science required for today’s high technology training. The emphasis on values, the role of technology in social development, and human interaction relative to technology can help those learners who see technology as irrelevant or even as a threat to their own and their communities’ cultural values. The benefits of a humanistic technology education are a better understanding of the connections between technology and the issues relevant to learners’ lives; an improvement of critical thinking, problem-solving, and decision-making skills; and an encouragement for students to become involved in community development (Aikenhead, 2004). Students will be able to reduce doubt in their abilities, fight issues of low motivation, and make the repeated need for skill upgrading seem less onerous (Nemiroff, 1992).

### 3.4 Student-Centered Learning

Some humanistic methods and ideas have been revived in the movement toward student-centered education and have reappeared in public education: building on students’ interests (Falk, 2009), experiential and explorative learning (Edmiston, 2014; Hopkins, 1994; Roberts, 2012), learning through inquiry (Barell, 2003; Lee, Green, Odom, Schechter, & Slatta, 2004), the teacher as guide (Hopkins, 1994), freedom and personal development (Falk, 2009; Gitlin & Peck, 2005; Hopkins, 1994), and authentic assessment (Edmiston, 2014; Falk, 2009). Higher education, too, has been encouraged to make a shift in the same direction. Weimer (2002) proposed five areas where learner-centered instruction could prove useful in improving student motivation and learning: the balance of power between teacher and student (e.g., assignment scheduling, attendance policies), a student
voice in instructional content, instructor roles, responsibility for learning, and evaluation methods.

However, none of these sources actually used the term “humanism.” Even if not humanistic in name, a comparison of student-centered learning with the principles of educational humanism nonetheless shows much overlap and indicates that humanistic ideals may not have been prominent in education for some time but have definitely not been forgotten and are once again seen as a possible solution to issues surrounding student achievement and completion rates.

As for vocational pedagogy, De Bruijn and Leeman (2011) described a competence-based “model of powerful learning environments” for vocational education (p. 695) with several features that could be described as humanistic: reflection, problem-solving activities, the instructor as guide, meaningful and flexible content, frequent low-stakes assessments, and self-regulated learning. However, they had to admit that their research showed only weak implementation of the various aspects of the model, especially reflection, self-regulation, and real-world tasks in real-world environments. The reasons they gave was teacher unease about trying new approaches and a lack of training in teaching methods, leading teachers to rely on familiar traditional methods. Change would first have to begin with organizational development toward a climate where innovation and experimentation are encouraged. Cedefop (2015) reported that although some European countries had made a commitment to learner-centered education, policy support was often weak. Implementation was inconsistent and varied greatly depending on the particular field of study, the size of the participating companies, school administrations, student diversity, and student-teacher ratios.

4 Conceptual Framework

The conceptual framework for this study is humanistic adult education as described by Elias and Merriam (2005). It was chosen because it not only corresponds with the major tenets of educational humanism as described in the literature review but also argues that humanistic teaching is appropriate for adults and older adolescents at whom vocational education tends to be directed. Elias and Merriam characterized humanism as being about individual dignity, autonomy, freedom, and integrity. The focus is on whole-person development, especially individual potential and creativity, and does not rely on extrinsic rewards. Typical humanistic practices are experiential learning, self-evaluation, self-determination of learning goals, and reflections on one’s own learning with an emphasis on personal growth.

The role of learners is to initiate and evaluate their own learning and progress, participate actively in learning experiences, and engage in reflective thought with the goal of self-actualization (Stephens, 2015). Teachers on their part act as guides and facilitators who encourage their students rather than criticize and judge them. Teachers must make sure that student self-expression and creativity are at the forefront of learning and that learning experiences are always meaningful (Elias & Merriam, 2005).
5 Methods

The purpose of this study to explore instructor perceptions and attitudes toward humanism and teaching in general led to these research questions: (1) According to instructors’ perceptions of their teaching, which humanistic elements are present in the instruction at one United States post-secondary technical college? (2) How do instructors at one United States post-secondary technical college feel about the inclusion and usefulness of humanistic elements in post-secondary technical instruction? To find answers to these questions, the researchers wanted to elicit participants’ feelings about and experiences with humanistic instruction, an approach that favors a pragmatic qualitative design. Qualitative interviewing was selected as the primary method to collect data because it is the research interview that puts participants’ views front and center in the attempt to uncover knowledge (Kvale & Brinkmann, 2009; Rubin & Rubin, 1995). Observation and document collection were added to enable the researchers to discover if and how humanistic approaches were reflected in curricula, course syllabi, and assignments and humanistic methods were implemented in the classroom (Morse & Richards, 2002).

5.1 Participants and Setting

The study’s participants were instructors at Great Plains Technical College (GPTC), a technical college in the United States with a focus on post-secondary technical education. The college offers mainly Associate of Applied Science (A.A.S.) degrees in different technical areas such as automotive, construction, heavy equipment, air conditioning, engineering, information, and health and environmental technologies; Associate of Science (A.S.) and Bachelor of Technology (B.T.) degrees in information and engineering technologies; and corporate training through its workforce and economic development unit. GPTC is known for its hands-on technical education and unique partnerships with industry. Participants all held at least a bachelor’s degree in their respective fields. Those who had also earned a master’s degree had done so in a variety of fields such as engineering, information technology, business, or education but had had little to no exposure to educational philosophy. As a result of the college’s focus on workforce education, most participants had had prior industry experience before joining the faculty at GPTC.

Three divisions, Information Technologies (IT), Engineering Technologies (ET), and Arts & Sciences (A&S), were used to collect data as these were divisions where the researchers were granted access to faculty members, classrooms, and documents. These divisions offer specializations in civil engineering, electrical/electronics, engineering graphics, instrumentation technology, and manufacturing (ET) and network infrastructure, software development, cybersecurity, and IT enterprise management (IT). All specializations are rather prescriptive, leaving no room for elective coursework. Class sizes depend on shop or laboratory restrictions. Classes with as few as 4 and as many as 16 students were observed. The average campuswide class size is 14. The A&S division was added because it provides all general education courses for IT and ET students and allowed a comparison to see if general education coursework and instructors might be more amenable to humanistic methods.
Complete target population sampling (Patton, 2002) was attempted, but not all potential participants agreed to participate in the study. Fourteen instructors ultimately consented to be interviewed: three from IT, six from ET, and five from A&S. There were nine males and five females among the participants.

<table>
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<tr>
<th>Name</th>
<th>Gender</th>
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<tbody>
<tr>
<td>Raymond</td>
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<td>Information Technologies</td>
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<td>Frank</td>
<td>Male</td>
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<td>Information Assurance</td>
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<tr>
<td>Gavin</td>
<td>Male</td>
<td>IT</td>
<td>Information Assurance</td>
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<tr>
<td>Liz</td>
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<td>ET</td>
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<td>Mike</td>
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<td>ET</td>
<td>Electrical/Electronics</td>
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<td>Dora</td>
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<td>Adam</td>
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5.2 Data Collection

Semi-structured interviews of 30–45 minutes were conducted with all participants. The interview protocol included fourteen major questions about professional background and self-perception as a teacher, courses taught, course competencies and content, relationships with students, instructional methods, and distinguishing characteristics of technical college instructors. Observations were conducted as selective observation with passive participation (Savin-Baden & Major, 2013) based on the protocol developed by Cas-
sady, Neumeister, Adams, Dixon, and Pierce (2004). During observations, instructional activities (delivery of information, interaction between instructor and students and between students, student and instructor activities), the person making learning decisions, cognitive activities by levels of complexity, and classroom management as well as the classroom environment were observed and recorded. Documents came from the college, the divisions, and the instructors themselves: strategic plan and assessment documents, degree plans and curricula for different degrees, class schedules, departmental assessment reports, syllabi, and various teaching materials.

5.3 Data Analysis

Data analysis was conducted as “content analysis” (Rossman & Rallis, 2003, p. 198). Coding included steps of open coding (Flick, 2002; Patton, 2002), focused coding (Patton, 2002; Rossman & Rallis, 2003), and selective coding (Flick, 2002). In the first coding step, open coding (Flick, 2002; Patton, 2002), the researchers immersed themselves in the data by reading the transcripts line by line several times and jotting down first codes representing interesting and emerging ideas, unexpected information, and possible items that might indicate patterns and themes. A second round of open coding was conducted to see if any of the codes could be grouped together.

In the next step, interview transcripts with codes and categories clearly applied were refined and expanded in focused coding (Patton, 2002; Rossman & Rallis, 2003). The purpose of this step is to choose the categories that are most likely to provide answers to the research question, assign the different data segments to these categories, and decide which codes should function as major categories and which ones as subcategories (Flick, 2002). The final step, selective coding (Flick, 2002), is used to develop core categories or themes from the categories at hand. The researchers integrated the categories around such central ideas, once again working across categories to look for any connections that had gone unnoticed, and ended up with three themes around which the categories could be grouped.

5.4 Trustworthiness and Rigor

Lincoln and Guba (1985) suggested that the criteria of credibility, transferability, and dependability be used to establish trustworthiness and rigor of a qualitative study. Credibility was assured through detailed field notes with particular emphasis on context and participant comments, the use of emic codes whenever possible, a search for alternative themes and categories through data reorganization, and a data check across categories. To allow a level of transferability, the researchers described the complete process of data gathering, analysis, and interpretation as well as the setting in detail. The more pertinent detail has been provided, the easier it is to identify another context as sufficiently similar and check if findings may apply. Dependability was established through a careful check of data sources and an audit trail, that is, a step-by-step documentation and accounting of each part of the research process (Meriam, 2009).
5.5 Limitations

The first limitation was geographical. This research was conducted at only one sub-baccalaureate technical institution in one region of the United States. Second, the study was limited to participants from three of the nine academic divisions at GPTC because those were the ones where access was granted. Third, not all instructors agreed to be interviewed, which resulted in participation rates of 43 percent for Information Technologies, 40 percent for Engineering Technologies, and 17 percent for Arts & Sciences.

6 Findings

Findings revealed that the major characteristics of humanism according to Elias and Merriam (2005) such as a focus on personal growth and development, self-evaluation of one’s learning, reflective thought leading to self-actualization, and teachers providing autonomy, freedom, and meaningful learning were not mentioned in interviews or documents nor were observed in the classroom. Therefore, Research Question 1 can be answered that although instructors used occasional methods and exhibited behaviors that can be seen as falling within a humanistic spectrum, they did not appear to be the result of an underlying systematic humanistic philosophy. Therefore, no unmistakably humanistic elements were present in the instruction at GPTC. As for Research Question 2, instructors seemed unaware of humanism and other educational philosophies, evidenced by the fact that no references to humanism or any other philosophy were made. Therefore, they expressed no feelings toward the inclusion and usefulness of humanistic elements in their teaching. The three major emic themes concerning teaching and learning at GPTC that emerged from the data instead were working in teams, helping students succeed, and looking for a good job.

6.1 Working in Teams

Teamwork featured in the curriculum as both the Information Technologies (IT) and the Engineering Technologies (ET) divisions allowed their students to take a course in small group communication instead of the traditional public speaking course required by many American universities. Mike stated the reason as follows: “[W]hen they join the workforce, they will most likely not be working by themselves. The student is therefore taught to work in a team environment.”

The potential benefits of teamwork, especially helping classmates achieve better understanding and developing critical thinking skills, seemed to be clearly understood and described by all IT and ET participants. Liz’s statement is one example: “Students working together is highly beneficial because everyone knows how it is done and how they argue to learn and approach the problem. From that, they learn critical thinking skills.” Although critical thinking, problem solving, stating and supporting opinions, and learning the steps of each task through cooperation were brought up as work-related skills learned through teamwork, they went unrecognized as elements of humanistic teaching. Work teams were merely seen as a way to disseminate new information and as a resource
Humanistic Elements in the Educational Practice

for employees who had questions to effect higher productivity and efficiency. Gavin explained it like this: “When I was in industry, I would go to the guy in the next office and say, ‘Hi, guy, come here and help me figure this out to understand it.’”

In practice, however, participants in general simply allowed their students to complete their assignments in teams if they wished to consult with classmates as stated by Raymond: “The students can help each other because somebody might understand more and someone else not understand something.” Students could work in larger or smaller teams based on class size to help one another, but they were not required to do so. Team projects were not used until students were in more advanced classes: According to Hank, “The only time they work in a team is when they are given the big project.”

Raymond advocated project learning as part of teamwork and discussed planned team projects: “It is good to incorporate interesting projects in classes. Then the students will get more engaged and want to come to class and want to do stuff.” However, he also made it clear that these projects were all planned by him. Two concerns about teamwork were also raised. Dora stated that she kept team size to two or three students because in larger teams, there were always team members who did little or no work, and Christian feared that when working in teams, students might end up doing each other’s work: “At times in some classes, I encourage the students to work together, but not do each other’s work, just help each other.”

Considering these responses, it came as no great surprise that the courses in which teamwork played a more prominent role were all located in the Arts & Sciences division. During the observation of a physics class, Adam divided the students into five groups and let each group carry out an experiment while offering guidance. Each student had his or her own task to conduct and to verify hypotheses. He said, “Only if students experience the whole course of a task can they grasp a certain knowledge point and then apply it.” The syllabus for the small group communications course asked students to complete multiple projects such as designing and constructing a flag representing their team or creating a PowerPoint presentation on a specific topic.

Despite recognizing the importance of teamwork, participants were much more emphatic when it came to the benefits of individual learning. Gavin actually preferred his students to work individually. He stated the benefits of individual work like this: “When students apply for jobs and go on interviews, they are on their own and not on a team.” Mike agreed that in foundational classes, individual learning was indicated to verify that all students had mastered foundational skills: “The benefits of working independently come in the basic classes, which are the foundation. Those things need to be learned on their own.” In fact, Liz mentioned that independent learning helped students believe in their ability: “For the introductory classes, the students need to work independently so they can get confidence and the skills they need.” Gavin agreed that students learn more quickly individually: “I prefer to let the students work independently most of the time because I think that the student can learn quietly a little quicker on their own.”

The findings show that although participants understood the benefits of teamwork, they still preferred that students complete most of their work individually. Teamwork was tolerated when students could learn from one another or when struggling students could benefit from collaborating with their classmates, but it was rarely encouraged or
even required, suggesting that teamwork benefits were seen strictly in terms of skills development rather than principles like student growth and independence mentioned by Elias and Merriam (2005).

6.2 Helping Students Succeed

Instructor-centered teaching was the default approach to classroom interaction mentioned by the majority of participants and expressed clearly by Hank: “I try to teach them concepts they need to learn.” Students were not encouraged to explore their own topics; Frank, for example, made the choice for them: “I try to find something interesting and find ways to put it into the course.”

The purpose of helping students was to allow them to pass the class, not to enhance their personal development. Max said, “I offer tutoring to them one or two students at a time outside of class time until they become competent in the course content.” Help tended to be conservative in the form of open lab hours, tutoring during office hours, or peer tutoring in class and involved mostly giving students a modicum (but not more) of freedom to catch up or not fall behind as in Frank’s case: “If I see some students have problems or difficulties, I will provide extra time in either the lab or in theory class.” Dora emphasized that every student deserved the opportunity to be successful: “Instructors must investigate and know about the background and situation of every student so as to provide appropriate and special help for them.” However, all students were judged on their ability to meet industry standards and were expected to be proactive about their success. Hank explained, “It can be hard for some students to succeed since industry standards drive outcomes. Students must be a good match for the program and must ask questions when they have problems.”

The approach to teaching fast learners was a little less restricted. Frank illustrated how he provided classes where students met all competencies early with additional materials to deepen and extend their knowledge and skills: “If they finish everything the first couple of weeks, I give more complex projects to anybody else in the class the rest of the semester and have them work on it.” However, such projects were “given” by the instructor rather than initiated by students. It therefore came as a surprise that in this climate of outcome focus and instructor centeredness, Frank actually engaged in a truly humanistic method. The beneficiaries were individual advanced students who had finished their tasks early and needed additional work to occupy themselves. He allowed such students to research on their own a topic that they were interested in: “If I find some students who have interesting things, I can help them and take time out to help more. Try to research something and help them with whatever they are interested in.” Unfortunately, instead of being allowed to set their own goals, students again would be expected to reach the goals set for them by him: “I set high goals for the highly motivated students and help push them toward those goals.” Teacher centeredness prevailed once more, and independent student research remained ancillary, was not a core feature of student learning, and was not understood as being humanistic.

Help for students was afforded only in terms of allowing them to meet industry standards successfully, not to grow as individuals and experience true independent learning.
Advanced students who were ahead of their classmates were granted a little more freedom although their learning was still controlled by what the instructor deemed appropriate and useful. Once again, Elias and Merriam’s (2005) principles rated no mention.

6.3 Looking for a Good Job

Course curricula and instructional methods were linked to future workplace success for students, not to any principles stated in the framework for this study. Because the majority of GPTC students plan to enter the workforce upon graduation rather than transfer to another university, course content and teaching methods were approached in a utilitarian fashion with a focus on teaching required job skills. Industry input into the curriculum was sought and accepted, and personal growth was not at all considered in instructional design and development. Hank explained the relationship between coursework and the workplace as follows: “If they know enough information, they can get better at their job.” He saw his ultimate role in preparing students for the workplace: “The students come here just to learn and be trained for the workforce.” The reason given for this stance according to Liz was student desires: “Technical education students are looking for a good job when they get out of college.”

To accomplish the goal of preparing students for the workforce, technical programs at GPTC rely heavily on industry advisory committees comprised of supervisors and executives from area businesses and industry. Frank declared, “Technical content is determined by the advisors in industry.” The curriculum revision process begins with program requests for new content, Liz remarked: “And [they] ask the industry to tell them what technical skills are needed and keep updating and changing.” The advisory committees meet twice a year, Raymond revealed, and inform instructors on what needs to be taught: “They come here twice a year and tell the teachers what they need in industry according to which the teachers modify and incorporate new stuff into the courses.” One IT syllabus included the following statement to that effect: “Coursework is based on industry standards and the level of the class is specifically designed for industry-level competencies.” Instructors subsequently incorporate curriculum content updates into their courses. Although they are free in matters of instructional design, recommended content was accepted by Max as a matter of fact: “Whatever is going on in industry at the time is what I am trying to give to my classes. Because that’s the job.”

7 Discussion and Recommendations

The answers to the two research questions, that is, none of the principles of humanism according to Elias and Merriam (2005) were mentioned or observed and participants seemed unaware of humanism and other educational philosophies, leave the issues of interpreting observations and responses that could be considered part of the humanistic spectrum, examining reasons for the absence of humanistic methods, and identifying opportunities for and benefits of re-introducing humanism into vocational education.
Loftis (1980) described vocational instructors as “characteristically pragmatic in philosophy and practice” (p. 25), and Miller and Gregson (1999) identified pragmatism as a philosophy that can guide vocational education through the economic and social challenges of the twenty-first century. To that end, they recommended a type of pragmatism they called “reconstructionist”:

> The overarching purposes of vocational education should be to help facilitate the growth of learners who are competent as: problem solvers, collaborators, makers of meaning, lifelong learners, worker-citizens adaptable to change and active as change agents, and practitioners of democratic processes. (p. 32)

Pragmatist methods according to Elias and Merriam (2005) include the instructor as facilitator who organizes the learning environment and designs experiments through which students can experience self-directed learning. Problem-based inquiry, contextualized learning, project work, experimental learning, and collaborative assignments are all part of pragmatist methods. These two descriptions of pragmatism led the researchers to infer the following:

1. The overlap of pragmatist and humanistic methods when comparing Elias and Merriam’s (2005) characteristics of both pragmatism and humanism as well as Loftis’ (1980) statement about the pragmatic orientation of vocational instructors suggests that since participants appeared to have no familiarity with educational philosophies and never used the terms *humanism* or *humanistic*, it is reasonable to assume that they were operating from a traditional pragmatist framework and that possible humanistic methods and behaviors mentioned or observed belonged to the areas of overlap with humanism but were actually pragmatist.

2. Miller and Gregson’s (1999) description of a reconstructionist pragmatism that encourages students to have a voice in the decisions about their learning, look at work in terms of personal growth rather than simply technical skills, participate actively in educational activities, strive to become active citizens, and use their knowledge, skills, and values for the betterment of society parallels humanistic values and indicates that there may indeed be a role for humanism in vocational education if not in name, then possibly in practice.

### 7.1 The Absence of Humanistic Elements

As mentioned in the *Findings* section, humanistic values and principles like individual dignity, autonomy and freedom, whole person development, self-evaluation, self-determination, and reflection were neither mentioned nor observed. The reasons for this absence can most likely be found in the ultimate goals of humanistic education: help students reach self-actualization and give them control over their own learning. GPTC is a technical college with significant ties to industry and heavy reliance on industry advisory groups. As affirmed by participants, industry needs drove curriculum content via the advisory groups, and instructors saw themselves as guarantors that graduating
students possessed the technical skills industry had identified. Industry demands were front and center of everything that happened in the classroom, and the focus was on mastery of a certain skills set in a pre-defined period of time.

For example, participants implemented teamwork, the first theme, because of its utilitarian and pragmatic function of helping prepare students for the workplace and finding a job, the third theme. Personal growth and development as a result of teamwork were not assessed at the division level, were not mentioned in any documents, and were not cited by participants; instead, teamwork skills were closely cued to industry needs. The second theme, helping students succeed in terms of mastering course content also seemed to be less about student growth than about outcomes, work readiness, and the ability to find suitable employment. In that context, the researchers did observe an occasional use of behaviorist methods when instructors expected their students to perform certain tasks to industry standards and specifications (Elias & Merriam, 2005).

Although students in general education coursework had some choice in, for example, the exact details of an assignment or the topic of a paper, this is a far cry from expressing ideas about a topic and then exploring knowledge to test those ideas. Neither relating matters to students’ own experiences nor focusing on students’ self-concept was considered. If GPTC instructors allowed their students to take charge of their own learning, it was generally by giving them enough time to learn the material at their own speed.

The approach of the instructor as facilitator who designed activities and then walked around the classroom, observed students, and intervened when there was trouble clearly predominated in instructor behavior. Mike’s syllabus, for example, underscored instructor control of classroom learning: “It will be my role to guide you through the process of studying IT, to provide you with an occasion to think and explore computers.” A classroom observation of a group assignment revealed that students had been given the purpose and the expected outcome of the task beforehand. The instructor was thus sole initiator and planner of the activity and its objectives, making it pragmatist rather than humanistic. If any instructor behavior that could belong in the humanistic camp was brought up, it appeared to be without the participants’ appearing aware of its humanistic orientation. For example, when asked about the most important quality of technical education instructors and the recommendations they would have for others, participants mostly answered that they should be patient, encouraging, friendly, kind, enthusiastic, and fair, not realizing that these were in fact humanistic principles.

What is the verdict on projects and teamwork, peer teaching, instructor guidance, experimental learning, helping students, and setting individual expectations when a student struggled and was allowed some leeway in keeping up with the class, all of which were mentioned by participants or observed and could be classified as humanistic? Given that Elias and Merriam (2005) placed these methods and behaviors in the pragmatist camp and that participants never spoke about humanism, it is reasonable to assume that they were used as expressions of the overall pragmatist orientation to prepare students to find good jobs rather than as opportunities to inject humanistic ideas into the instructional environment.
8 Opportunities for Humanistic Elements in Vocational Education

Although Scott (1980) conceded research findings that outcomes or achievements are not improved through humanistic instruction, he also proffered the contention that in a more humanistic setting, students generally show more positive attitudes toward learning, spend more time on task, and actually finish learning tasks quicker than otherwise. The findings thus raise the question of where in this era of credentialing and industry collaboration, humanistic values, principles, and methods might still have a place in vocational education. When the entire focus of a class is on helping students reach standards and master skills requested by industry advisors, where is the freedom instructors have to help their students grow and mature rather than simply turn them into skilled workers? Believing that student growth and maturity are not mutually exclusive with teaching specific technical and workplace skills, the researchers have some suggestions for administrators, instructors, and researchers who focus their work on technical education. Some of these recommendations were proposed several decades ago but either not implemented or implemented but not studied, so we know little about their effectiveness. If they can help make contemporary vocational education practice more effective as Miller and Gregson (1999) surmised in their advocacy for a reconstructionist pragmatism, they definitely deserve a second look.

Technical college administrators need not fear that personal growth and development are a distraction for students as they prepare to enter the workforce. In fact, Scott (1980) argued that flexibility in teaching methods has the potential to save money, which should be attractive to those seeking to contain the costs of program administration. Bransford, Brown, and Cocking (2000) emphasized that recent studies have favored a constructivist approach to learning where new knowledge is built on what students already know. They further asserted that to be effective, learning environments had to be learner-, knowledge-, assessment-, and community-centered, that is, focus on the knowledge and skills students already possess, understanding and knowledge transfer, feedback and revision, and the use of the classroom, the school, and the surrounding community respectively. Although Gray and Herr (1998) cautioned that some technical skills, especially those that involved a risk of injury, would likely continue to be taught in a behaviorist fashion, they nonetheless agreed that constructivism had come to play an important role in vocational education as well. Crawford (2001) added that constructivism allowed students to learn by thinking about solving problems, asking questions, exploring possible answers, explaining their decisions, and integrating technical, scientific, and other knowledge. Especially in post-secondary workforce education, attention ought to be paid to students’ prior experiences, teamwork, clear expectations, self-direction, learning styles, and cultural differences, all of which fall on the humanistic spectrum. Bransford, Brown, and Cocking (2000) and Fürstenau (2003) supported this argument by contending that traditional pedagogy could develop understanding or skills but not both simultaneously as is needed for modern vocational education. When Spitzic (1980) argued for relevant content, adequate timing (e.g., content sequencing, time spent
on certain topics, etc.) and appropriate materials and methods such as building learning from simple to complex as crucial for successful vocational teaching; instructional variety; experiences of success; independent learning; clear usefulness of learning situations; and student agency in choosing teaching methods, she not only stressed the applicability of humanistic methods to vocational education but also anticipated some of the characteristics of Bransford, Brown, and Cocking’s learning environments. Therefore, vocational instructors wanting to heed Spitze’s call can consider four methodological approaches: anchored instruction, situated cognition, cognitive apprenticeships, and authentic assessment. All four approaches support Bransford, Brown, and Cocking’s concept, complement one another as well as modern vocational education and its pragmatist orientation, and embrace the humanistic ideas and methods mentioned by Elias and Merriam (2005).

A cognitive apprenticeship is the structured acquisition of skills where an expert guides a learner to mastery. Six main steps are usually recognized: (1) modeling (expert performs the skill), (2) coaching (expert observes learner and offers feedback), (3) scaffolding (activities progress from lower to higher skill levels based on learner needs), (4) articulation (learners explain their knowledge and processes), (5) reflection (learners criticize their own performance), and (6) exploration (learners solve problems on their own) (Collins, Brown, & Newman, 1989; Dennen, 2001; Woolley & Jarvis, 2007). Fürstenau (2003) implied that cognitive apprenticeships encourage learner-centeredness because the scaffolding process lets individuals control their progress, build on previous learning, and determine the pace at which they are ready to move on to the next level. The knowledge transfer from understanding to application and from simple to complex also supports knowledge-centeredness. Frequent formative assessment takes place at every step of the scaffold as students articulate and reflect on their new skills. Potential humanistic elements are the participatory aspect, the learning from experience, the self-evaluation of one’s progress, and the guiding function of the teacher. Finally, cognitive apprenticeships are a good match for vocational education because many instructors have extensive industry experience and possess the expertise to model skills and guide their students incrementally from simple to complex tasks, which is often the approach to vocational skill development.

Anchored instruction grounds learning in real-world applications. It is usually built around an initial problem or situation (the “anchor”) whose purpose is to create interest in a topic and guide students toward defining and understanding the problem. The reason for using an anchor is to train students how to identify the most significant issues that need solving (Bransford, Sherwood, Hasselbring, Kinzer, & Williams, 1990). Using the anchor to build on students’ prior experiences and generate understanding makes this method both learner- and knowledge-centered, and the guidance toward solving the initial problem allows for formative evaluation along the way. Among other humanistic principles, anchored instruction fosters individual creativity, active participation, and meaningful learning. An anchor is useful in vocational education in that it helps students deal with situations commonly encountered in the workplace, that is, mechanical or technological problems that must be understood, diagnosed, and solved.

To make sure that the anchor is indeed meaningful, anchored instruction often em-
ploys situated learning, meaning that the anchor is situated in students’ professional or private (social, cultural, linguistic, etc.) environments and helps students learn by showing them how their activities are relevant to their real lives and their unique circumstances (Dennen, 2001; Woolley & Jarvis, 2007). Situating anchors reinforces learner- and knowledge-centeredness because it considers experience and knowledge transfer and also adds the element of community-centeredness. Even in vocational education, students’ social, cultural, and community environments have an important role in learning. According to Fürstenau (2003), if students see how their technical skills can benefit their families and communities, they will find meaning in what they are learning, set their own goals, participate actively, and are more willing to use self-expression, improving motivation and retention in the process.

Although Gray and Herr (1998) claimed that in vocational education, most if not all assessment is authentic because performance of actual work skills is being tested, there is more to authentic assessment than that, namely the integrated assessment of knowledge, skills, and attitudes as well as collecting evidence of mastery at multiple steps along the way (Darling-Hammond & Snyder, 1998), called formative assessment. Doing this affords teachers the opportunity to provide frequent constructive feedback and help student develop self-confidence and mastery rather than offer a summative critique at the end with no chance to revise performance. According to Bransford, Brown, and Cocking (2000), frequent feedback helps with understanding, allows students to reflect on their thought processes, and also improves the quality of feedback by helping instructors be clearer and more supportive. To measure vocational competencies in particular, Winther and Achtenhagen (2009) argued that knowledge situated in real-world environments be assessed, integrating general academic and specific occupational skills with problem-solving as the ultimate achievement. Winther and Klotz (2013) further recommended that such assessments focus on the process and move from simple to complex and from general to specific tasks, an approach that aligns with Fürstenau’s (2003) attitude toward situated learning. Both Winther and Achtenhagen’s and Winther and Klotz’s arguments for assessment and measurement thus support the notion that cognitive apprenticeships, situated learning, and anchored instruction are appropriate for vocational education pedagogy because all encourage problem-solving in a step-by-step learning process that includes self-assessment, formative evaluation with frequent feedback, and revision of one’s performance.

Contextual teaching and learning (CT&L) has been touted as modern vocational pedagogy’s answer to especially the challenges of teaching academic and occupational skills and overcoming the disconnect between school and work and is generally understood to include problem-based learning (PBL), self-regulation, use of multiple contexts, inclusion of students’ life environments, team learning, and authentic assessment (Johnson, 2002; Sears & Hersh, 1998). Despite CT&L’s general pragmatist orientation, its focus on inquiry; experiential learning; a teacher who facilitates; and personal development through the integration of cognitive, affective, and psychomotor skills needed for problem-solving does accommodate the methods discussed here quite well. PBL usually begins with an anchor that is situated in students’ experiences, cognitive apprenticeships allow self-regulation, situated cognition makes use of multiple contexts and the inclusion
of students’ life environments, authentic assessment is part of CT&L in the first place, and all four methods promote formative assessment. In short, using these four methods in the context of CT&L allows instructors to stay true to their pragmatist roots while extending their teaching to include humanistic principles and goals.

How can humanistic principles, methods, and behaviors for vocational education be learned? Professional development can be offered to faculty members on how to cultivate student growth in their coursework in a way that enhances technical skill development rather than impede it. Although the overwhelmingly pragmatist orientation among technical instructors is acknowledged, there is nothing to stop them from being patient, encouraging, friendly, kind, enthusiastic, and fair to their students, attitudes that do not conflict with technical education and that participants themselves acknowledged as helpful. Humanism also asks faculty members to give students empathetic understanding, high expectations, trust, and reflective listening, none of which are antithetical to technical education (Newcomb, 1980).

It has been said that the problem with many teacher professional development programs has been their generic nature when teachers, especially in vocational and technical fields, would benefit from learning about how to develop methodological skills appropriate for their disciplines. As a result, specific teacher development programs that can train instructors in methods like the ones recommended in this section must be offered (Bransford, Brown, & Cocking, 2000). One such program could be the in-service teacher professional development program begun at Winthrop College (now Winthrop University) in Rock Hill, South Carolina, in 1972 and originally designed to help vocational instructors move from a predominantly pragmatist approach focusing on skills development to one stressing human development. In this program, vocational instructors and administrators unaware of humanistic principles and methods were introduced to the importance of the affective domain and topics such as relationships and trust, group processes, decision making, and values clarification (Loftis, 1980).

This model could incorporate teacher self-study in the context of teachers’ learning communities. Gestalt psychology with its emphasis on cultivation of the whole person, reflection to develop deep insights, relationships with students and colleagues, and meaningful learning, all of which correspond with humanistic principles, has been identified a good basis for such self-study. A gestalt approach includes a learning community of teachers where participants interpret classroom experiences and discuss problems, listen to other viewpoints, share experiences and grow knowledge, and use autobiographical journaling and oral reflections to gain deeper insight into their teaching choices (Bransford, Brown, & Cocking, 2000; Allender & Allender, 2008; Frydaki, 2011). Such professional development can create open communication, help instructors develop collaborative relationships to trust and learn from each other, and foster a willingness to try new approaches to teaching and learning. Experienced instructors have to realize the important role of the learning community and give younger instructors professional direction, and younger instructors must ask for suggestions from their experienced colleagues. The model may also be useful to administrators trying to introduce their employees to a more caring approach toward student support (Bransford, Brown, & Cocking, 2000; Frydaki, 2011; Loftis, 1980).
Other recommendations can also be implemented. For example, Law (1980) suggested that administrators bring back the position of technical supervisor to offer instructional support. The technical supervisor would not be an administrator but rather a resource person who advocates for instructor needs with the administration, offers workshops and professional development, establishes individual teaching development plans with instructors, helps onboard new instructors with industry backgrounds but little teaching experience, and participates in the choice of instructional materials. Such a person could be ideally suited for identifying and promoting opportunities for humanistic environments, instruction, and instructor behaviors or for facilitating learning communities as part of the Winthrop model.

8.1 Implications for Researchers

Researchers can revisit existing humanistic approaches and investigate their applicability to practical problems in contemporary vocational education. First, humanistic management ideas and measures should be studied. Instructors often consider themselves to be passive recipients of administrative actions, which is un-humanistic. What researchers could do instead is to explore more participatory management systems to see if there is room for more humanistic support for students.

Second, cooperative relationships among instructors must be promoted. Therefore, researchers are encouraged to inquire into how cooperative relationships and trust among faculty members may be facilitated in the context of learning communities and how these may be modified to meet the specific needs of vocational instructors. A study that implements and assesses the effectiveness of the components of the Winthrop model may be a good first step here.

Third, a serious look must be taken at the benefits and the costs of humanistic education. Do the monetary savings that are touted by some proponents like Scott (1980) and Spitze (1980) really materialize? If students possibly do not learn better, will they learn faster? Might an investment in additional student support staff members lead to an ROI in terms of higher graduation rates, tuition revenue, and job placement rates? Investigating these questions may be crucial because financial matters are likely to be a major consideration in whether humanistic approaches to education constitute a true improvement to current practices and will be (or should be) adopted on technical college campuses.

9 Conclusion

Occasional glimpses of humanistic principles appear at GPTC in teaching methods, the learning environment, and the way in which instructors allow students some freedom and employ teamwork or project learning. Overall, however, the instructor’s approach to teaching and learning appears solidly pragmatist and employs humanistic methods only accidentally. If humanistic methods are chosen, instructors tend to be unaware of the fact. In the current climate of credentialing, preparing students for certification tests, and working closely with industry advisory committees, a shift to a truly humanistic
model is not likely to occur.
None of this means that technical education cannot benefit from the inclusion of humanistic ideas and methods, and using such methods likewise does not mean that necessary pragmatist aims must be abandoned. Miller and Gregson’s (1999) recommendation of a reconstructive pragmatism for vocational education points to one way of harnessing the power of humanistic teaching. The argument has even been made that humanistic teaching methods not only improve student motivation but also save time and money. Such claims certainly deserve further investigation on the part of researchers. Where student success is concerned, educators need to use the entire tool chest of approaches at their disposal, not just those conforming to the current educational credo.
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Three Types of Tightrope Dance in the Comeback Process
Preliminary Findings from a Longitudinal Study of Young People at the Margins of Upper Secondary School in Norway
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Abstract: Fewer than half of the young people attending vocational institutions in Norway complete their education within the allotted five years. Indeed, many of these students have non-linear paths to completion. However, it is not changes in the dropout rate that make this different from earlier generations but the expansion of formal education and the rise of the knowledge society and individualisation. The term ‘tightrope biographies’ is used here to encapsulate why individualisation cannot be thought of in terms of choice, because today’s youth are often held accountable for their educational progression rather than this progression being viewed as dependent on institutional mechanisms. The present study characterises young people as tightrope dancers in their interactions with vocational schools. Selected data collected from ethnographic interviews during the ongoing longitudinal project Youth, Completion and Dropout in Telemark are used here to capture the voices of young people. These data focus on the non-linear educational careers of these youth when they re-enter schools and explore the stories they tell about dropping out and re-entering. These stories suggest that, to succeed, students need customised support throughout the process from school to the workplace and that many depend on this support. The study identifies three different ways of understanding these students as tightrope dancers trying to get back on track, characterising them as The Steady, The Shaky and The Shivering.

Keywords: VET, Vocational Education and Training, School Leavers, Tightrope Biographies, Knowledge Society, Continuing Vocational Education and Training, Re-entry Students, Pushout, Youth Research

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1 Introduction

In this article, we look at young people’s non-linear re-entry to vocational education. After dropping out of school, they received help over time from the welfare system prior to re-entry. Their stories about dropping out and re-entry to vocational education seem to describe the experience in three different ways, which are characterised here as ‘tightrope biographies’ as they find their individual trajectories into adult life.

The term ‘tightrope biographies’ originates in Beck’s individualisation theory of social change (Beck & Beck-Gernsheim, 1996, p. 25) and was subsequently referred to by Woodman and Wyn in their reappraisal of Beck’s thesis (2015, pp. 46—47). Its use in the present context enables us to see beyond particular stories to how shared structural challenges shape the individual choices made by young people finding their way back to vocational education. Interpreted as biographies, these back to school stories reveal how the individual’s choice is structurally mediated, limiting their possible trajectories of completion and reflecting unequal opportunities beyond individual decision making.

Our starting point is an ongoing longitudinal qualitative research project following about 70 young over a period of ten years. This article focus on those youths that dropped out and then re-entered vocational education. All of the participants are of school age (16—21 years), and the data used here were collected in the first three years of the study. Looking at their non-linear schooling, the study asks what are their stories of dropping out and re-entry?

Following analytical scrutiny, the preliminary findings were organised into individual stories representing one of the three tightrope biographies: those who seem, at this point, to be doing well (“The Steady”); those whose stories suggest that they may not be doing so well (“The Shaky”); and those whose stories seem likely to end in another dropout (“The Shivering”). The findings to date suggest that of the many young people who return to school intending to complete, some will need extensive support if they are to achieve this. To improve their situation, that support must compensate for inherent inequalities.

2 Young people, education and biographies

Young people grow up in a very different world from the one their parents knew as young people (Guest, 2016). Across the globe, workers with an upper secondary education are known to earn higher salaries than those with a lower level of education, and in every country, unemployment decreases as educational attainment increases (OECD, cited in Woodman & Wyn, 2015, p. 20). Globally, from being a privilege for the few, education has progressed to become an accessible option for all (UIS (The UNESCO Institute for Statistics), cited in Woodman & Wyn, 2015). The expansion of formal education is characterised by the higher rate of entry to higher education, transforming

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1 *Youth, Completion and Dropout in Telemark* is financed by Telemark University College (2013–2015) and the University College of Southeast Norway (2016–2023), and is receiving funding over three years (2015–18) from the Norwegian Labour and Welfare Administration (https://www.nav.no/fou).
our world into ‘a schooled society’ and dramatically altering human life (Baker, 2014). The rise of the knowledge society creates a demand for highly educated employees, and Baker maintains that education characterises, creates and defines society rather than the other way around (Baker, 2014). Baker characterises this education revolution as a cultural phenomenon: ‘a new model of society holds that secondary education has become necessary to be a modern person’ (Baker, 2014, p. 228). This context also creates the concept of dropout as a global phenomenon that threatens to have a decisive impact on the lives of young people.

The current study is situated in Norway, where students who are successful at school are likely to have grown up with highly educated, high-income parents (Falch & Nyhus, 2011; Markussen, 2014; Markussen, Frøseth, Lødding, & Sandberg, 2008). Although the Norwegian government applied the standard of a common school for all as early as 1920, socioeconomic background determines upper secondary school students’ success at school in terms of engagement and grades, which in turn influence performance (Markussen, Frøseth, & Sandberg, 2011). The Norwegian educational system is mostly governmentally financed for compulsory schooling from first to tenth grade, as well as for upper secondary education. While all are entitled to upper secondary education, this is not obligatory (Markussen, Frøseth, Sandberg, Lødding, & Borgen, 2011).

The Norwegian upper secondary school system has seen many reforms, the most recent of which (in 1994) applied to vocational education. For young people who had finished lower secondary school and were entering upper secondary education, this reform gave them the legal right to at least one of their three educational choices. This reform also introduced the ‘2 + 2’ model, comprising two years in school and two years of apprenticeship (Hiim, 2017; Markussen, Frøseth, & Sandberg, 2011). This involves cooperation between the educational system (providing schooling) and the employment sector (providing apprenticeships). Before entering their placements, students must pass all of their exams and complete their courses. Students attending a vocational study programme can also switch from the apprenticeship system to complete a general academic course that extends their schooling to a third year; upon completion, students can access higher education. Vocational students can also switch from one vocational programme to another; students who fail to get an apprenticeship, drop out or decide that their educational choice was a mistake still have the legal right to join another strand, within a period of five years following completion of lower secondary school (Markussen, Frøseth, & Sandberg, 2011).

According to national statistics (Statistisk Sentralbyrå, 2016), fewer students complete the vocational (58%) than the general strand (73%). A quarter of students attending vocational strands drop out within the five year period; many decide to take the third year leading to higher education, and about 41% complete their vocational training (Gjennomføringsbarometeret, 2015). Overall, about half of the total student group commences vocational training. However, completion statistics indicate that only 16% of the cohort have completed this training after five years (Reegård & Rogstad, 2016).

Most of the students who drop out of the vocational strand do so after their two years at school. According to Host (2008) (cited in Markussen, Frøseth, & Sandberg, 2011), the percentage of students nationally applying for apprenticeships fluctuates from 65%
to 80%, depending on the prevailing economic situation. The probability of securing an apprenticeship increases when the candidate can demonstrate a low rate of absence and good grades from lower secondary school, is male, belongs to the ethnic majority, has a father with a vocational education and remains of age for upper secondary education (Markussen et al., 2011; Markussen et al., 2008; Markussen & Sandberg, 2005). This ‘2 + 2’ model, which forces the student to change from one arena (school) to another (work placement) in the middle of their education, can in itself be said to pose an arbitrary structural challenge for the vocational student, over which the candidate has little control. For this reason, the student may achieve the best grades and meet all the school’s requirements but still fail because employers can choose who they want to recruit to the apprenticeships they offer. This arbitrariness means that some are pushed out despite their best efforts, causing them to lose their lawful right to an upper secondary education if this coincides with the expiry of their allotted time of five years (Reegård & Rogstad, 2016).

The general perception of what happens when young people drop out has changed (Dorn 1993); dropping out (and re-entering) is seen as an individual’s decision, shaping their own fate (cf. MacDonald’s (2011) critique of contemporary public labour policy). In its raw form, this individualisation thesis suggests that young people are now expected to think of themselves as creative, flexible and in charge of their own decisions in addressing life’s challenges (Woodman & Wyn, 2015, p. 46). They choose their education, their school and their career direction, and they fight their own battles to join the workforce. In this individualised world, young people are seen as entrepreneurs of their own lives. In Risk Society, Beck (1992) proposes that the young form their own lives through the decisions they make in relation to their education and subsequent career. In their reappraisal of Beck, Woodman and Wyn (2015) suggest that these formative decisions should be studied to clarify how institutional change translates into individual biographies. We call these decisions ‘tightrope biographies’, echoing the idea of ‘choice biography’ ascribed to Beck by critics of the individualisation thesis (cf. Woodman & Wyn, 2015, p. 46). The choice biography supposedly captures the trajectory of young people in today’s global knowledge society, where everybody is seen to form their own social biography through individual entrepreneurial spirit. Yet according to Woodman and Wyn, while the knowledge society has increased worldwide participation in education, ‘in the global competition for jobs the apparent value of investing in knowledge building has largely failed to materialise. Instead, young people are faced with a high-skill, low wage labour market” (2015, p. 31). Rather than emphasising ‘choice’, Beck invoked the idea of ‘tightrope biography’ to describe how the young must navigate according to guidelines that compel them to think in terms of ‘self organization’ and ‘self thematization’ (Beck & Beck-Gernsheim, 2002, p. 23).

The present study adopts a similar position in exploring young people’s stories about their non-linear schooling careers. In a global world geared towards education, they have dropped out and re-entered a vocational system whose inherent arbitrariness they cannot overcome or fully control. In these circumstances, they are compelled to develop stories or biographies that frame their decisions as self-made choices. In so doing, they are like tightrope dancers, who must adapt to the rope they are given, finding their own way of
dealing with ‘institutional change that is translated into [their] individual biographies’ (Woodman & Wyn, 2015, p. 47). In trying to make sense of how study participants recounted their own stories, we have identified three such ‘tightrope biographies’ — or ‘tightrope dances’ as we now prefer to characterise them.

3 Methods

The research project underpinning this paper is a longitudinal qualitative study, in which selected young people are trailed through regular interviews. The collected data build on students’ own stories and descriptions to elucidate their tightrope biographies. The core idea is to explore the dropout issue as a socially mediated phenomenon, accessing young people’s accounts of how they arrived at the decision to return to school.

The interviews are conducted informally; discussion of the informants’ current interests is developed through follow-ups, mirroring their stories. The method involves what Tanggaard (2013) called ‘voice research’, accumulating qualitative ‘snapshots’ (cf. Jonker, 2006) based in the young person’s own vocabulary and emphasising where, when and how the interviews are conducted. Focusing on how vulnerable youth assign meaning to their life path over time yields a collection of narratives for interpretation. For instance, one observed tendency is that, in their relationship to education and training, these students are often seen as ‘outsiders’. Becker (1963) claimed that young people labelled in this way are not kept ‘outside’ by their own decisions but by a society that marginalises anyone who infringes the rules for membership of that society. Dorn (1993) aligns with this view, arguing that the term ‘dropout’ is a label created by society rather than by those dropping out.

Exploring young people’s own stories requires an indirect interviewing approach (Moshuus & Eide, 2016). This is based on the ethnographic interview (Spradley, 1979), which attempts to engage the informant in a conversation in which both questions and answers should ideally extract the essence from the informant’s context. Building the conversation on the informant’s responses concerning hobbies and currents interests is an example of ‘happenstance’ (Moshuus & Eide, 2016, p. 4ff), in which something unforeseen moves the research situation from an interchange between interviewer and informant to a more personal exchange. This approach ensures that students’ stories about dropping out of school are less dictated by the researchers’ own terminology, and each interview followed similar strategies. Ensuring that the research agenda is present only indirectly introduces a level of interpretative complexity that enriches guesswork around of our informants’ intended meanings and perceptions of schooling and, perhaps more importantly, their ways of framing (Fine, 1991) their lack of schooling.

This ongoing longitudinal study is in its fourth year (of ten), and the present article draws on a selection of preliminary findings, based on completed interviews and accompanying field notes. The collected data include field notes, observations and transcribed interviews, which are assembled, stored and coded using the qualitative data analysis software NVivo. The young people recruited for the study were all at risk of dropping out or abandoning education, or had already had such an experience (Markussen, 2014).
The project follows 71 young people in the county of Telemark, Norway, over a 10-year period from 2013 to 2023. Drawn from this original selection, 40 first year students in vocational upper secondary school are participants. The participants are following vocational strands that have particularly high dropout rate. The second part of the selection is recruited among young school leavers who are on welfare. All are aged between 16 and 21 years. Cooperation between the researchers in this project and the leaders of the welfare offices and schools resulted in the selection of the informants. Based on six of these students’ stories, this paper describes the three tightrope dances, capturing differences and similarities in the process of returning to upper secondary school.

4 The Tightrope Dancers

In this study, we build on the data material collected from the first three years of the longitudinal study. The findings presented in this article are to be regarded as preliminary. The present patterns we see might be different as the study precede. When analysing the youths’ stories, we found patterns of different stability in their relationships evolved over the years. One was of the youths’ stable stories, where the relationships between the young people and their environment are described as robust and strong. Another was of more unstable stories, showing patterns of some relationships being wounded. The last pattern was of the damaged stories, of young people having several completely broken relationships. We call the three relationship positions for "the steady", "the shaky" and "the shivering”.

The six stories referred to here were told by young people who have dropped out of school, received help over time from the welfare system and have re-entered vocational education. The stories describe their experiences of dropping out and their re-entry to vocational school. All of them had been on welfare for several months when we met for the first time at their local welfare office. They came from a low socio-economic background, with parents who themselves had a low level of education. By the time of the second interview, all had found their way back to school and were keen to succeed.

While their stories appear to share some similarities, a pattern arise where three different ways of understanding these young people as tightrope dancers can be understood as: "the steady”, "the shaky” and "the shivering”.

4.1 The Steady

Several participants’ accounts of their re-entry to vocational education sounded like a positive story of completion. The stories of Kent and Noman are good examples of The Steady.

When we first met at the local welfare office, Kent was busy applying for jobs. He told us that getting a job was a temporary measure, and that in the autumn he would return to school. Originally, he was in the food and restaurant strand, training to become a chef. However, he said, ‘after half a year, I noticed that this wasn’t for me’. Nevertheless, he stayed on until he started his apprenticeship. ‘I couldn’t quit, because I had such good friends in the class. They held me back a little bit. […] However, when I started
as an apprentice and really felt what working would be like, I knew that “this won’t work”. So, although Kent knew quite early on that working as a chef was not for him, he stayed on, mostly because of his friends. When he finally faced reality, it was too late in the autumn to start anew. However, the experience of being an apprentice helped him to realise that he wanted to become a plumber, following an incident at his apprenticeship placement. He managed to unblock a drain, something no one else could do: ‘I noticed that in this situation I could actually manage’. Kent felt he finally got a positive response from his colleagues, as he mastered the situation and was told he did an excellent job. This confirmed his sense of being in the wrong place and helped him to decide to drop out and to re-enter in a new strand.

Like Kent, Noman completed his two years of vocational training at school, majoring as a car mechanic in the technical and industrial production strand (TIP). Although a conscientious student, he did not get as far as becoming an apprentice. What stopped him, he said, was three days of absence when he went into hospital for an operation. Noman did not know the social code forbidding days out of school when applying for an apprenticeship. In fact, hospitalisation and post-operative convalescence should count as a legitimate absence, and should not appear on his certificate, but he may have been unaware that he needed to document this.

Noman and his parents are refugees from Asia, and his informal network of family and friends could not advise him on how to proceed to secure an apprenticeship. Noman was undeterred when he failed and decided to enter a different vocational strand straight away. However, just a week after term had started, he ran into difficulties when he was told it was too late. He felt that he was not treated like other students: ‘There are a lot of others who get it [a place at school] after a month, so why didn’t I get one after a week?’ He found it unfair that others were able to return to school even though they had applied later.

By the time of our second meeting, Kent was starting the first of two years in the building and construction strand, and Noman had finally been readmitted to the second year in a different vocational strand, majoring in transport. Both reported that they were doing well at school and looking forward to their apprenticeship. Sponsored by the school, Noman was taking his licence for heavy vehicles. He had been in touch with a number of firms to seek an apprenticeship and was now waiting for a reply following an interview. Noman also sent his documents to another firm and was waiting to hear about a possible interview. When asked about the completed interview, he described it as follows.

He said that I had a grade 3 [6 being the best, 1 being fail], and that I have a 3 in everything, haven’t I? Then he said: “You have to work a bit harder for the marks, don’t you?” And he noted that I had four days absence. That’s because we have these driving lessons and everything, so it’s four days and seven hours. Then he said “Yes. I think the absence is a bit much”. I said “It’s the driving school and everything. And we are in the process of taking our driving licence as soon as possible”.

Although he was told his grades were a bit low, and he was questioned about his absence,
he felt the interview had gone well. He had made use of the school’s sponsored courses to get a driving licence, and once again, the resulting absences for driving lessons (which should probably not have been recorded on his school sheet) led the potential employer to ask questions.

Kent reported that he loved his school. He could skip some of the subjects he had previously completed, and he said he was doing well in the other subjects. However, he was not going to be a plumber.

K: [...] I have switched again. I am now going to be a concrete worker.
I: Ok.
K: So, the first year we did carpentry, so then I decided to become a carpenter. But then we came to the concrete workshop, and we were going to do formwork and bricklaying and things like that, and then I wanted to be a concrete worker.
I: Yes, exactly.
K: So it changes all the time. It is so strange.

Kent said that the teachers at school were good at motivating him. At the beginning of the year, when he had one teacher, he wanted to be a carpenter. However, his last teacher had motivated him to work with concrete, and Kent admitted that this had stuck in his mind because it happened at the end of the year. He had secured a placement (for work experience) with a big company working with concrete, and he was hoping for a summer job there. Kent knew through his network that the company had many new upcoming contracts, making it easier to get a job there.

Both Noman and Kent had their parents’ support for whatever they decided to do. Through his family, Kent has a large local network that provides help and support, which is how he learned about the job openings in the concrete company. Noman’s network has fewer ties to the local labour market. Both have a lot of close friends; while Kent’s friends are from where he lives and where he grew up, Noman has friends within his country’s network scattered all over Norway. That network also helps young people to find work opportunities, although outside the apprenticeship arrangement.

Students in this position can be said to perform a steady dance on the tightrope. These two young men, whose education has been stopped, both describe their dropout situation as a consequence of their own actions. Kent decided to drop out of his training because he no longer wanted to be a chef, and Noman failed to convince the employer to hire him. Yet according to Noman, the failure to convince the employer was not a failure but the unfortunate outcome of a close race, and next time, he would make it.

Similarly, both described their return to school as the result of decisions they had made. When Kent’s superior at the restaurant applauded his way of unblocking a drain, it made him decide to become a plumber; then he changed his mind again, thanks to an inspiring teacher. However, as he recalls, it was his decision to become a concrete worker. Noman’s negative experience with the interview and his initial problems with re-entry did not prevent him from returning to a new strand of vocational education. Both men believed they were making their own decisions, although both were surrounded by informal networks that were ready to step in, helping them to overcome every hurdle.
Among tightrope dancers, they are The Steady, even if both may still be years from completing.

4.2 The Shaky

Some of the young people in our study appeared to do well on re-entering vocational education, but their stories suggested that they were struggling in other parts of their lives. While it might seem that all is well, a closer look at this group suggests that certain circumstances in their lives disrupt the balance and may affect their chances of reaching their goal of completion. We characterise these dancers on the tightrope as The Shaky.

Nils gave the impression of being quiet and shy when we first met at the local welfare office. He told us that he had failed to secure his first choice, which was electro, as he wanted to work with computers. Instead, he entered TIP and struggled a lot with learning and remembering the terminology. He completed the two years, but when he tried to get an apprenticeship, he found himself at a loss. ‘No one wanted to take me in’, he said. He experienced this rejection as something to do with him as a person rather than as a consequence of a lack of places.

After getting in touch with his local welfare office, Nils got a work experience placement at a local business. However, when he had completed the placement, they did not offer him a job or even a summer job. He wanted to learn something different, starting school again in the media and communication strand.

Lina came across as a vibrant and strong girl at our first meeting. She told us that she had thought a lot about her situation and now wanted to take charge of her life by returning to finish her schooling in the health and social strand. She felt she had wasted a lot of time.

I threw away [my time at] upper secondary school. I have thrown away a lot of my life that I could have used to do some good. I mean, I have such huge potential, haven’t I? When I really tried in tests and so on, I got fives and things like that. So, in a way, I could have done a lot better if only I didn’t have everything else to think about. And now it is just me, so now I want to.

Lina had almost completed her schooling, and could have continued, if she had taken some exams. She told us that she did not take her exam because her dog had died. However, from what she told us, it soon became clear that there was a lot more to her decision than her dog dying.

Lina spoke about her difficult childhood, as both her parents were drug addicts. Although her mother found a more stable husband when Lina was very young, she started using drugs again when they split up. Lina talks about how she moved a lot, changing schools, and how Lina lied to the childcare officers to get them off her case. Because her mother was unstable, it became Lina’s job to take care of her, and of her younger brother.
When we met Lina again, she was back at school, taking the subjects she had missed and getting good grades. She was now living with her grandparents, who kept a close eye on her and told her she was welcome to live there if she stayed in school, which to a certain extent she did. She also told us that she was very happy at school and enjoyed her class. We asked her if this would help her to complete:

L: Yes, a lot. I feel more like being at school, and I have had these problems with absence and that, because I don’t thrive, do I? [It is] difficult for me to stay there because of anxiety and that, but it is a very good class, so.
I: Yes, so you are not away a lot, then?
L: Well, I have some absences.
I: It was you who sort of implied this, wasn’t it? [Saying] “Yes, I like being at school”.
L: Yes, I switch, because I sort of... I notice how the school year is going; at the beginning of the year I am very motivated not to come in too late and so on, and then it dwindles away, doesn’t it? Today was like that; I was in bed at half past seven [school starts at eight] and just sort of... “Shall I be bothered to go or not?” Suddenly, I lose all my energy.

It seemed as if Lina was not completely out of the woods. She still struggled with absence. She said she was fortunate to have a teacher who pushed her to come to school and understood her problems. Lina had a lot going for her; her grandparents supported her and demanded that she put her efforts into her schooling. Her mother moved far away, making it easier for Lina to ignore her needs and focus on herself. Her stepfather is a stable element in her life, she has many friends and several of her friends’ relatives are there to help her. In other words, she has a network that actively supports her.

Nils’ situation is a little different. When we met him for a second time, he was living away from his home town, in a bedsit. His family was scattered, his parents had recently divorced, and his mother had moved away with his brother. His father was still living in Nils’ home town, although at a distance from him. He had no informal network, did not go out, and had few friends. He lived on a student loan and did not have a part-time job but lived on a very meagre budget. However, he had started the new school and was beginning afresh, making progress and managing quite well academically.

Young people in this position (The Shaky) have a lot going for them when returning to school, but there are challenges that sometimes rattle them. Although they have a history of struggling, they are motivated to complete what they have now started. They have found their place. It was clear that both Lina and Nils were satisfied with their choices—Lina in continuing where she left off, and Nils trying something new that he enjoys. Young people in this position manage quite well at school and tend to have a network of friends and/or family that supports them. However, there is something lingering, something still not quite there, that may interfere with their schooling, though it may be unrelated to their educational skills. Lina and Nils both achieved good grades but face certain challenges that disturb the balance, putting them on shaky ground, and these challenges must be dealt with. For Lina, this manifests in her continuing absences from school, making her anxious about being unable to shake off old self-destructive
behaviour. For Nils, it is his sense of being alone in the world; his family is not there for him, either physically or psychologically, and while he feels part of an informal student collective at school, he has never managed to establish any social contact with any of them outside school.

4.3 The Shivering

In this position of The Shivering, the two storytellers were back in school but seemed to be struggling. The characteristics of the shivering position may be understood as more unstable than the shaky. These young people seem to encounter more challenges and have broken relationships with their environment. Their stories led us to question whether they would manage to complete, or if the challenges and instability issues would cause them to give in and so fall off the tightrope. Lars and Karen were both forthcoming when interviewed, but they were less descriptive in their narratives than the other four. Karen’s interviewer commented on her difficulties in understanding words and expressions and the need to use simple vocabulary.

Lars told us he was forced to drop out because he was accused of abusing hashish. However, he insisted that this was only partly true. He admitted that he was using, and that he knew that he would have to take a urine sample at some stage because of the school’s suspicions. In that sense, he was not forced to quit, as he saw it coming and still did nothing to avoid the confrontation. He knew he had not passed in all his subjects, and being forced to take the urine sample would not change anything. He knew he would not have been able to continue; he felt he was doomed to fail, no matter what he did. Lars started using hashish at fourteen, and it has dominated his life ever since. He said he was curious; he wanted to try it, and by the time he was fifteen, he was using all the time. He said he regretted this because there had been lot of bother, always being suspected of being a drug abuser. It seemed as if he did not regret using, but that he regretted all the commotion around his use being labelled as ‘abuse’ or ‘addiction’. We were not surprised, then, when he told us he was using hashish when we met (after he had returned to school).

Lars lets us know that his father was not pleased about his consumption, so he no longer went home high. He said that he only smoked ‘[...] during the night, my father has a super nose for hashish. [...] He has threatened to throw me out if I continue, and then I have to pay back what they have paid for me to get my driving licence’. His father would drag him out of bed and drive him to school to get him there in time. Evidently, he still wanted to use hashish, but his father’s strong will kept him attending school. However, his habit was causing him to struggle with paranoia and anxiety. We asked how that affected him.

No, there was a period of a couple of months when I felt constantly monitored. If I was out, I felt like someone was following me. And, when I was at home, I felt there were cameras all around and microphones and things like that. So, it wasn’t much fun. [...] Yes, so I struggled a little bit with this, and also meeting new people... but it’s getting a little bit better now [...] I
just have to sit in class and find a place to sit where there aren’t a lot of other people. I can’t sit in the canteen because there are so many people and things there. So I just have to sit on a bench or some chairs where there aren’t that many around. […] I can’t be alone either when there are so many people around me, then I just have to go home.

Lars told us how this affected his schooling, but he did not confide in anyone at school and would not explain his increasing absences from class to them. This may be because he was caught using hashish once before, and so if he told anyone at school about his situation, they would test him again. This was his predicament. He could not make up his mind how to balance his hashish use with his efforts at school. The possibility of being caught and the influence on his life, leading to absences, all added up to the possibility of failing to complete.

Karen’s story told of her struggle with bullying from first grade at primary school throughout lower secondary school. In lower secondary school, she went to a psychologist, and she was sometimes ill during these three years and unable to attend school. She also told us that she was on medication for ADHD. Karen’s life seemed to involve regular dramatic incidents, as when a friend ended up in a coma following an accident, or when she ran away from the police after becoming involved in a difficult situation. She told us about anxiety and bullying on entering vocational school.

K: And I was very motivated, I had thought about and, for example, yes, to get to know a lot [of other students]. But because I was now at school to learn, to take an education, I didn’t want to [make bad choices]. If I got to know someone, perhaps they were the wrong kind of people. So, I kept mostly to myself, but then I sort of got a type of anxiety.

I: Ok?

K: Because I didn’t know anyone, and every time I went to the canteen, I got the evil eye [from the other students], and they didn’t know me, and they whispered and looked at me in that way.

The first time around, Karen had managed to last until the beginning of the second year; then she left because she felt unhappy there. She described how the others looked at her, and how it made her feel uncomfortable and insecure.

She decided to try again when a woman from the county council phoned her. Her decision was influenced by seeing how her stepsister struggled. ‘She can hardly pay her rent, […] and I realised that I don’t want to end up like that’. While proud of what she had achieved so far, she also admitted to some absences but believed she would manage to get into the second year. Again, she was struggling a lot, making it difficult to attend school, and her stepfather was sick.

So, it is a lot like, well, it affects school sometimes that one isn’t, well… I have some absences and that’s because of, yes, my stepfather has cancer. And I have had this winter depression and this anxiety and so on, which has taken a lot of energy out of me.
Karen said that the teachers supported her; when she was absent, they told her they had missed her. She also said that her marks were generally good while admitting that her grades in Maths and Science were not so good. Now twenty, this was the first time since eighth grade that she had actually achieved good grades. She believed this had something to do with the fact that she had been working for a while—first at her stepfather’s and then in a local shop. Now, at the end of the year, she was a little insecure about one subject (Mathematics), and if she failed, that would stop her progression.

Students in this position do a shivering dance on the tightrope. The Shivering’s stories typically express anxiety, loneliness and a limited supporting network. Most importantly, both Lars and Karen found that they must cope with the impact of external factors in order to continue their schooling. In these stories, the issues are drug use and bullying. Both students have returned to school, but they continue to struggle, both at school and at home. Their re-entry can hardly be described as their decision alone. Lars’ father invests a lot of energy in getting his son to stay in school, and Karen returned after being followed up by the local authorities. Lars will not change his ways, and Karen is dealing with her stepfather’s illness, as well as spending time with her friends away from school. Given these challenges and instability, will they complete, or will they fall off the tightrope?

5 Defining the Dancer’s Dance: Concluding Remarks

The aim of this paper was to trace how students make their way back to school by asking what are their stories of dropping out and re-entry? In particular, we wanted to identify the key elements in the making the decision to return to school after dropping out. The present findings are based on a preliminary analysis of the students’ individual stories. Our argument is inspired by Woodman and Wyn (2015), which turns the individualisation thesis upside down. Applying their interpretation to the six students’ stories, we have elucidated the different processes by which these three categories of tightrope dancers got back on track to re-enter vocational school.

As we can all imagine, dancing on a tightrope is difficult. It requires training and repeated rehearsal. These young people told us about their differing non-linear paths back to school, narrating their repeated attempts to get their education on the right track in ways that warrant comparison with dancing on a tightrope. As their stories show, they face different challenges. Like tightrope walking or dancing, it seems to be more difficult for some than for others to find their balance. The three tightrope dances inherent in their re-entry stories show how different constraints, far beyond the youth’s own choices and decisions, appear to them as their own particular dance. This highlights the importance of moving on from the initial discovery of the particular dancer to the work of defining the dancer’s dance. Based on these early findings, we can identify three types of dancer: The Steady (who are managing well and getting closer to their target; The Shaky (who are also progressing but face some challenges, mostly outside of school, that make the rope harder to cross); and The Shivering (who fumble and are in danger of falling off in their efforts to complete). For this third group, their challenges are so
Three Types of Tightrope Dance in the Comeback Process

complex or immense that they may find it difficult to move far enough to cross the rope.

In line with the individualisation thesis, Kent and Noman provided clear examples of young people who act as entrepreneurs in their own lives. However, a closer look reveals that their high motivation to stay on track reflects more than their own decisions, as both perceived that others have supported their efforts. Most importantly, their surrounding informal networks supported almost every decision they made, helping them to overcome every hurdle. For Lina and Nils their work at school offered hope of completion, but their efforts may yet be interrupted by issues external to their school career that continue to impact their educational efforts. Lars and Karen’s re-entry can hardly be seen as resulting from their decisions alone, even if they present it in that way. Both must continue to cope with the impact of external factors that have severe negative effects on their schooling, leading us to question whether they will complete, or whether these challenges and instability will cause them to give up again.

All of these young people chose to characterise their schooling as the result of self-made decisions. Even Lars, who was thrown out of school, said that he let it happen; he knew it was coming, if not for this reason then for something else, and it was his own choice to leave. Only Nils said he was helpless because no one wanted him, prompting the question, is Nils aware of his situation in a way that differs from the others? Caught up in the individualisation thesis, do the others navigate and ignore the institutional pressure that forces their hand? Nils seemed to realise that the situation was not to his advantage, but rather than blaming systemic issues beyond his control, he seems to blame himself by insisting that it was him they rejected.

Both internationally and nationally, there is extensive research on young people in the risk zone. We know a great deal about youth at risk and school leavers. However, even though we have a nuanced picture of how risk factors are distributed among young people, our research show that within the same risk groups there are major differences between how youth master different challenges in carrying out their educational and potential apprenticeships prospects. There are young people who perform well while others struggle, some, as we have presented, to a considerable extent.

In this article, we have complemented the view of youth at risk with a perspective of socially mediated relationships. When studying young people in the same risk group, we find what so far resembles a systematic difference in the interaction of relationships with their surroundings. The descriptions of their relationships reflect our research method, which emphasizes the young people’s own stories about their experiences.

What can we learn from these stories? The tightrope analogy foregrounds the importance of the developing relationship between the individual student and the vocational training system. The analogy also allows us to shift the focus from the student’s own choice to their effort to find their balance in a 'state of permanent (partly overt, partly concealed) endangerment' (Beck & Beck-Gernsheim, 1996, p. 25). Although these young people present themselves as makers of their own stories, we see them struggling to find their balance in situations that are not of their making. In a forthcoming paper (Bunting & Moshuus, 2017a), we note the importance of the large research literature (cf. De Witte et al., 2013, Rumberger, 2011) reporting the large number of ‘individual factors’ and ‘institutional factors’ at play when young people abandon their schooling.
At the same time, we need to know more about the often complex interactional processes that influence dropping out of school (cf. Brown & Rodriguez, 2009). The stories presented here suggest that these processes are equally important in determining how young people re-enter education. The three positions described here highlight the differing experiences of those returning to school. The first of these (The Steady) refers to students who are motivated, plan for their future, their relationships are robust; they have friends and networks as well as supportive and interested parents, and have no external problems that disturb their schooling. Those in the second position (The Shaky) are also motivated but have a history of struggling privately; their relationships seem to be damaged which is likely to influence their schooling to some extent and represent a latent risk factor. The third position (The Shivering) includes young people who need help to get back on track. Their motivation for staying at school is the desire for a good life, which they might otherwise miss, but they remain unsure how to get there. They struggle with life issues, their relationships are broken both at school and privately, this is likely to affect their schooling and their prospects of completing.

In another paper (Bunting & Moshuus, 2017b), we elaborate on the perspective of Michelle Fine (1991) to explore the importance of young people’s interactions outside school in understanding why some end up completely disengaged from school. Here again, it becomes clear how re-entering school demands quite distinct balancing acts, depending on the student’s circumstances outside school.
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The Lack of Collaboration Between Companies and Schools in the German Dual Apprenticeship System: Historical Background and Recent Data

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Abstract: On the macro level (federal level) and exo level (state or regional level), the German Dual Apprenticeship System shows a high degree of institutionalised collaboration. However, the companies and vocational schools on the meso level (institutional level and level of the actors), in contrast, are just loosely coupled with a dominant partner (i.e., companies) and a subordinate partner (i.e., vocational schools). How and why these structures have emerged, established and stabilised is part of a complex historical, societal and economical process. The historical developmental will be elaborated in the article.

The term Dual System was invented in Germany in the 1960s, and the intention was to emphasise equal responsibilities, partnership of equals, lively encounters and close collaboration between companies and schools. This vision is not yet a reality, as the presented empirical survey demonstrates. A majority of companies do not or rather seldom collaborate with ‘their’ vocational schools. 74.2% of the companies do not or seldom coordinate their work, and 93% of the companies do not or seldom cooperate with the vocational schools.

The German Dual Apprenticeship System operates on the meso level with regard to the collaboration between companies and schools just on the basis of less than 30% of its potentiality. The term ‘Parallel Systems’ seems therefore to be more appropriate to characterise the actual situation on the meso level than the term Dual System.

Keywords: VET, Vocational Education and Training, Dual System, Germany, Cooperation, Coordination, Co-construction, Survey, Teachers and Trainers

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1 The Emergence of the Dominant–Subordinate Paradigm

In the first part, we will describe how and why the asymmetrical relationship between companies and schools was created. First, we will describe how and why the dominant role of the companies emerged. Second, we will describe how the complementary subordinate role of the vocational schools emerged.

1.1 Emergence of the Dominant Role of the Companies

Apprenticeships have existed in Europe since the early Middle Ages, and until the 20th century, a purely company-based and craft-oriented model was driven for centuries by the guilds (*Gilde/Zunft*). Guilds controlled and guaranteed vocational training and the quality of professional conduct (i.e., ‘competent’) as well as the compliance with proper behaviour (i.e., ‘honourable’). Professional honour shaped professional identity, and professional identity shaped personal identity. A prerequisite for becoming a member of a guild was a training and evaluation period as an apprentice. Additionally, the guilds were powerful; they had their own jurisdiction, controlled the access to a craft, controlled the trade and set the prices on the market. They had control over the economy and the finances (Gessler & Howe, 2013).

The abolition of the guilds’ rights was introduced for the whole German Empire with the Industrial Code of the German Empire (*Gewerbeordnung für das Deutsche Reich*) in 1871, which led to the deprivation of the guilds’ power. With freedom of trade, any person was now permitted to open a trade, guilds no longer had rights to exclude others from practising a trade, the members of the guilds were allowed to withdraw their fellowship (and were protected by the law if they did) and evidence of competence to train an apprentice was no longer required. The guilds were not liquidated, but they lost their power. The freedom of trade was introduced late in Germany, and it was influenced especially by developments in France (Haupt, 2002).

In contrast to other European countries, the tradition of guilds was taken up again in 1881 with the amendment of the Industrial Code of the German Empire, also called the ‘law on guilds’ (*Innungsgesetz*). The freedom of trade, dating from 1871, was partly withdrawn. The *Innung* (i.e., association of craftsmen) acquired the status of a voluntary public–legal corporation. They were, therefore, new formations within an old tradition with special rights. They were authorised to create courts of arbitration for their members, carry out master craftsman and journeyman examinations and regulate apprenticeships. The motivation for this reintroduction was to improve the economic status of craftsmen and provide a social counterforce to the political workers, trade union movement and emerging social democracy—an economically well-off and stable middle class. The de facto limited scope of regulations, however, proved to be problematic.

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1 In 1869 the Law on Freedom of Occupations (*Gewerbefreiheit*) and the Law on Freedom of Coalition (*Koalitionsfreiheit*) was introduced first in the North German Confederation and was adopted later in 1871, after the foundation of the German Empire (*Deutsches Reich*), into the Industrial Code of the German Empire.

2 These are the roots of the German Mittelstand which are mostly family-owned SME’s which have been successful in transforming themselves into companies with strong export activities (Muzyka, 1997).
The guilds were only given the authorisation to regulate and monitor the apprenticeships of their own members; yet, membership was voluntary, and only a small number of craftsmen joined the new guilds because the membership involved more duties and control than rights. As a result, there was no comprehensive control of apprenticeships (Stratmann & Schlösser, 1992).

A further stage of reestablishment and development took place in another amendment of the Industrial Code in 1897 called the Craftsman Protection Act (Handwerkerschutzgesetz). The guilds received the Chamber of Crafts as an umbrella organisation. Members of the Chamber of Crafts are the guilds (Innung) and not the craftsmen; the craftsmen are members of the guilds (Rothe, 2011a). The emperor had learned his lesson from the history of the guilds: Without any control, it was dangerous to give power to the guilds. At the same time, the state was not willing to take direct control itself, and the guilds were supposed to help the empire construct a power structure against the socialist workers movement. The solution was an intermediary organisation of self-administration in the form of the Chamber of Crafts. The chambers were, however, public legal organisations. The Chamber of Crafts was responsible for drafting expert reports about the status quo of craftsmen for the state, promoting the development of the craft sector and regulating and controlling the craft guilds. The Chamber of Crafts received even broader rights; for example, it was responsible for the formation of examination boards to conduct journeyman examinations, not only for members of the guilds but also for nonguild members, which meant that vocational training in the industry also was controlled by the Chamber of Crafts. The compulsory guild membership—allowed as long as the majority of local craftsmen agreed—also was introduced in this amendment, as were the statutory requirements to execute a written apprenticeship contract and the duration of an apprenticeship (i.e., generally three years and a maximum of four years). With formal rules, it was easier to regulate and control the guilds. The chambers also were allowed to establish schools. The costs for all this engagement had to be covered by the municipality, which then could pass on these costs to the handicraft businesses (Greinert, 1998).

With the amendment of 1897, craftsmanship was used to rebuild a quality system of vocational training, which largely had been shattered in the 19th century, and to give it a certain exclusivity. The Chamber of Crafts received a de facto examination monopoly related to apprenticeships; the master craftsman title was protected by law. A further amendment of the Trade Regulation in 1908 finally reintroduced the evidence of competence; the right to vocational training once again was linked to the medieval master title. The protection of the craftsmen reached so far that the examinations in the new industry sector were, for almost 40 years, under the control of the Chamber of Crafts. In 1936, the Chambers of Commerce and Industry finally received the right to organise their own examination boards and examinations (Rothe, 2011a).

The different chambers, which represent the companies and the employers with legal rights received from the state (i.e., an intermediary public legal institution), established a central role in the Vocational Education and Training System (VET System) in Germany. This position is stable, still valid and mostly unchanged, and was even at the moment when the vocational schools arose.
1.2 Emergence of the Subordinate Role of Vocational Schools

By the beginning of the 19th century, most of the German states had introduced compulsory schooling of eight years, up to age 15. From 1873, ‘continuation schools’ (Fortbildungsschulen), offering an additional three years of education, were created to continue schooling to age 18, which would be followed by military service. At first, there was no general obligation to attend these continuation schools. Nevertheless, the Industrial Code of the North German Confederation (1869)—which became, in 1871, the Industrial Code of the German Empire—already mentioned that “apprentices who are still in need of instruction in schools should be given time for it” (Gewerbeordnung für den Norddeutschen Bund, 1869, p. 272). An amendment in 1883 tightened this rule. Companies had to provide apprentices under the age of 18 the necessary time to attend the continuation school (Gewerbeordnung für das Deutsche Reich, 1883, p. 224). The gradual conversion of basic continuation schools into continuation schools focused on work and vocational apprenticeships started at the turn of the 20th century and was closely linked to the work of Munich Municipal School Inspector Georg Kerschensteiner (Gonon, 2002). Even if the continuation school had an extremely modest start (e.g., initially offering lessons only in the evenings or on Sundays), the introduction of schooling served to expand the closed social nature of professional training in companies that previously had been exclusively based on implicit knowledge, practical experience and privacy.

The German Committee for Technical Education (DATSCH) was founded in 1908 by the Association of German Engineers (VDI) and the Association of German Mechanical Engineering Institutes (VDMA). This committee’s work would have a long-term effect because it produced standardised documents (e.g., activities of the profession, training curriculum and examination plan) and teaching materials (e.g., standardised courses and teaching materials), along with other materials. The first course (for apprentice machinists) was published in 1919 (Herkner, 2003; Kipp, 2009). Also in 1919, Article 145 of the constitution of the Weimar Republic introduced compulsory general attendance of continuation school students until the age of 18 after graduation from the eight-year basic school (Volksschule) (Huber, 1992).

A prototype of the dual system—with learning taking place in two locations—was launched by 1881 with the Trade Guilds Act (Innungsgesetz), the reintroduction of workplace training, and the establishment of ‘continuation schools’. This was finalised on a legal front in 1919 with the introduction of compulsory school attendance for trainees in the whole republic. Greinert (1998) describes the period as the precursor to the current dual system. At the time, teaching in the continuation schools primarily repeated and deepened what had been taught during the preceding eight years of education, although the quality of the instruction evolved at different rates in the different states of the German Reich. By 1913, for example, Bavaria already had created ‘vocational continuation schools’ (Berufsfortbildungsschulen) that offered (1) practical vocational instruction, (2) theoretical vocational instruction and (3) civic education. Beginning in 1923, Prussia began to call its continuation schools simply ‘vocational schools’ (Berufsschulen). These also began to be specialised in terms of professions (German Committee on Education System, 1966).
At the dawn of the 20th century, industry—with the support of DATSCH—also had begun to build a parallel industrial system, alongside the craftsmanship system, though oriented towards the craftsmanship system. As a result,

the craftsmanship system itself departed from the decentralised and rather unsystematic apprenticeship, which had been characteristic of the older craftsmanship model, and achieved a far higher degree of centralisation, standardisation, and uniformity—elements, that are considered today as the determining features of the German system. (Thelen, 2006, pp. 402–403; translated by the author)

To that end, company vocational schools also were established. These company vocational schools not only were intended to improve workplace training but also were an attempt to take over the public school-based vocational education. With the global economic crisis that erupted in 1929, this approach was abandoned for cost reasons while the task of the state-run continuation schools was now expanding. The continuation schools had to provide instruction until students were 18 and also provide services to unemployed young people. These tasks proved to be such a significant drain on the schools' resources and personnel that their continued existence was seriously in doubt by the start of the 1930s.

This situation changed when the National Socialists came to power in 1933. The schools would now be used to provide training for professional qualifications and indoctrination in National Socialist ideology. In 1938, a new law on compulsory education (Gesetz über die Schulpflicht im Deutschen Reich) centralised final control of the schools. The terms vocational school (Berufsschule) and compulsory vocational education (Berufsschulpflicht) were now used in general. Apprentices had to attend vocational schools part time until they completed their apprenticeships, even if they were older than 18. Starting in 1937, the vocational school curricula began to undergo revision, and the first national curricula (Reichslehrpläne) for vocational schools were issued in 1940. These curricula were orientated towards the requirements of industry and towards the content and structure of in-company training (largely developed by DATSCH). As a result, vocational schools became dependent on companies in terms of curricula, and their educational task was degraded. A 1940 decree mandated eight hours of lessons at a vocational school each week (Greinert & Wolf, 2013).

As a result, the systems of the companies and schools were now integrated in terms of curricula, with the companies as senior partners and the schools as junior partners.

2 The Emergence of the Dual System Paradigm

This asymmetry did not change after the Second World War, and it remains in place to this day. A 1952 opinion commissioned by the Standing Conference of the Ministers of Education and Cultural Affairs (Kultusministerkonferenz [KMK]) confirmed the domi-

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3The KMK is a voluntary coordinating body for the state ministries without constitutional status (first congress in 1948).
The Lack of Collaboration Between Companies and Schools

nant role of the companies and the chambers but also recommended reforms that remain largely ignored (German Committee on Education System, 1966, p. 419). One of these recommendations was for vocational schools to train the company trainers—an approach that certainly would have improved collaboration between the teachers and trainers.

Despite the continued lack of parity, circumstances did change. First, with the enactment of the constitution of the Federal Republic of Germany in 1949, the responsibility for school-based education was transferred back under the umbrella of the cultural sovereignty of the states, eliminating the central control introduced by the National Socialists. The vocational schools regained their educational focus. Second, with the passage of the 1952 Works Constitution Act (Betriebsverfassungsgesetz), the trade unions acquired rights of co-determination for the implementation of in-company vocational training through the new work councils. The trade unions also demanded, without success, a second day of vocational schooling to improve school-based training and enhance the status of vocational schools. Although the asymmetry between the companies and vocational schools did not change fundamentally, the status of the vocational schools was strengthened by the new role of the trade unions. Third, the status of the chambers as organisers and regulators of the vocational training system and their control of the final examination system remained unchanged (Stratmann & Schlösser, 1992).

2.1 Political Appeal

The term ‘Dual System’ was first used in 1964 in a report published by the German Committee on Education System. The term Dual System should emphasise that it is a “system of simultaneous training in companies and vocational schools” (German Committee on Education System, 1966, p. 418) whereby the success of the dual training system depends on whether the responsible bodies “interact” (ibid., p. 503). Duality and collaboration of the learning locations characterise the original concept.

The word ‘simultaneous’ must not hide the fact that the company (then, as it is today) is the dominant partner in the system. This is evident by the fact that:

- the company (and not the vocational school) decides who receives a training place and training contract (followed by a place in the vocational school) and who does not;
- the apprentices spend two thirds of their time in the company and only one-third of their time in the vocational school and
- the training is only deemed successful if the final examination organised by the chambers (who represent the companies) has been passed by the apprentices.

In 1964, the German Committee on Education System recommended a reform that was formulated as the model for the future:

4The framework agreement of the Standing Conference of the Ministers of Education and Cultural Affairs (KMK) states that at least 12 hours per week of vocational education in schools must be provided (KMK, 1991, 2015). In the states, however, this orientation value is predominantly implemented with exactly 12 hours per week.
In dual training, the company and the vocational school have a joint responsibility. Their contribution is different, but it constitutes equal obligations and rights. In order to reinforce and make the common ground for responsibility visible, both partners organise a joint examination upon the conclusion of the vocational education and training and issue the final certificate together. (ibid., p. 493; translated by the author)

The model also stated, “In the Dual System, the vocational schools are equal partners of the companies. Both serve the same goal, albeit with different orders and under their own responsibility” (ibid., p. 500). The key words in the description of the Dual System are shared responsibility, balanced obligations and rights, and equal partnership.

This concept from the 1960s is still used today to characterise the Dual System by means of the duality of the learning locations and the division of practice in companies and theory in schools (e.g., Ryan, 2011). This does not take into account (1) that the training often takes places at three or more locations of learning (e.g., intercompany training institutions and training in another company in the context of a training alliance or training network), (2) that, with the introduction of the didactic principle of ‘learning areas’ in vocational schools in 1996, the separation between theory and practice was abolished and (3) that the relationship between company and school is asymmetrical, and not equal. Today’s concept of the term Dual System is more complex and, depending on the conceptualisation, comprises five (BMBF, 2013) or six ‘core principles’ (Dehnbostel, & Lindemann, 2016), six ‘criteria’ (Gonon, 2014) or even 11 ‘essential elements’ (Euler, 2013).

The term ‘locations of learning’ or ‘learning venue’ (Lernort), introduced in 1974 by the German Education Council (GEC, 1974), was criticised even at an early stage, since the learning locations designated as company and school consisted of a number of different learning locations (e.g., company includes training workshops, workplaces and courses; ‘school’ includes classrooms, workshops and virtual learning rooms). In this sense, the term ‘plural system’ (Kutscha, 1999) could be used; however, this term already applies to every school. Schools offer a set of learning places, and many companies do as well. Another criticism was that either ‘location of teaching’ or ‘teaching venues’ would be a more appropriate term (Beck, 1984). Despite this criticism, the term ‘location of learning’ was established and formed the basis for the term ‘cooperation of locations of learning’ (Lernortkooperation).

The emphasis on the term locations of learning (used for both companies and schools) also carries the risk that other dualities are hidden. For example, the cooperation of the social partners (employers/employees), the corporatist governance (employer and employee association/government), federal constitution (federal government/governments of the states), cooperative financing (public/private), the teaching/learning arrangement (experience-based/systematic), the disadvantage in the transition into the system (transitional system/apprenticeship), and the discrimination in the system (such as payment for ‘male professions’/‘female professions’). Taken together, these dualities form a further duality, namely, between visible aspects (e.g., financing) and rather hidden system characteristics (e.g., discrimination). The principle of duality of the two learning locations—
company and school—nevertheless, forms the beginning and core of the Dual System despite the necessary complementary differentiation.

A major step forward in the quality of vocational education came with the introduction of the National Vocational Training Act (Berufsbildungsgesetz) of 1969.

2.2 Political Act

The trade unions initiated discussions with a draft of the law in 1959. In 1962, the Social Democratic Party (SPD) and, ultimately, the German parliament (Bundestag) asked the government (composed of a coalition between the CDU, Christian Democratic Union, and the FDP, Liberal Democratic Party) to present draft vocational training legislation. In 1964, when the term Dual System was coined, it was still unclear what the new law would look like. The first draft was submitted by the SPD in 1966, and it was finally adopted in 1969 by a CDU–SPD coalition government (Herkner, 2009).

The purpose of this act was to provide national regulation and public accountability of in-company training, similar to that imposed on education within schools. The matter up for debate was whether a federal law should be created to cover both training in the workplace and school education or whether a law regulating workplace training on a federal level would be sufficient (or would have to be sufficient) while the states retained responsibility for school-based training. The upshot was that the federal law only regulated workplace training while traditional schooling remained the states’ responsibility (Roeßler, 1973).

Initially, this federal law was opposed by the chambers and employers’ associations, which warned of the nationalisation of workplace training. The trade professions, meanwhile, remained opposed to the legislation. They had just completed a comprehensive overhaul of the Crafts Code (Handwerksordnung) in 1965, already had established rules (and accomplished facts) for workplace training and wanted the existing responsibilities to be preserved. The result was that the new federal law was only legally binding for the industrial sector and not for the trade sector (Zabeck, 2009). This division still exists today.

Therefore, it is not surprising, given these fundamental challenges, that the issue of company–school collaboration is not mentioned anywhere in the 1969 Act. It is also not surprising, given the history of vocational education in Germany, that it is the company that is legally given sole responsibility for the success of the training. According to the law, the company must ensure that “the trainees are taught the skills and knowledge required to achieve the goal of the training” (Berufsbildungsgesetz, 1969, p. 1113). Apart from this continuation of the status quo at the local level, the new law introduced the principle of corporatist governance with the involvement of trade unions at several levels:

- The new law led to the establishment of a Federal Institute for Vocational Education and Training Research, which (1) clarify the basic principles of vocational education, (2) identify its content and objectives and (3) work on the adaptation of the VET system to changes in technology, the economy and society (ibid., p. 1122). Founded in 1970, the institute was renamed the Federal Institute for Vocational
Education and Training (BIBB Bundesinstitut für Berufsbildung) in 1976. One body of the institute is its Main Committee (Hauptausschuss), which makes decisions on institute-related matters and works out recommendations to improve the system. The Main Committee initially consisted of representatives of employers, workers and the federal government. The states (responsible for schooling) were not included in the beginning.

- The new law also led to the establishment of vocational training committees at the federal and state levels. These committees included employer and worker representatives. At the federal level, they also had representatives from the federal and state governments, while at the state level, the grouping included, besides the employers and employees, representatives of the highest state authority (ibid., p. 1120). The schools were involved in these committees through the state representatives.

- Vocational training committees also were set up for the local organisations responsible for vocational training: the chambers (i.e., competent authority). These were made up of equal numbers of employer, worker and school representatives, although the latter were only granted an advisory role in 1969 (ibid., p. 1121).

- The makeup of the examination committees for the approval of final examinations also was stipulated. At least one teacher had to be involved, and two thirds of the committee had to be employer and worker representatives. Its decisions were made by a simple majority, akin to decision-making on federal and state levels. One possible composition of the committee, in line with this regulation, could be four employer and worker representatives and one school representative. Unlike the vocational training committees for the responsible body (i.e., competent authority), on the examination committee, the school representative did enjoy full voting rights (ibid.).

The principle of collaboration in the field of vocational training, thus, was introduced on several levels (the federal government, the state, the responsible body and the examination committees). Only one area remained unaffected by these changes: direct school–workplace collaboration. On the ground, the principle remained that the responsibility for the success of vocational training lay solely with the company.

2.3 Political Activities

As a result of the determination of the division of responsibility between the federal government (in-company training) and the states (schooling), the federal government

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5 As of 31 December 2014, the BIBB had 334 positions and employed 618 people. Approximately one third of the positions are classified as academic posts. The current tasks of the BIBB are the reorganisation of the training professions, participation in the preparation of the national vocational training report, implementation of the vocational training statistics, participation in international cooperation relating to vocational education and training, the promotion of pilot projects and supra-workplace vocational educational centres, the management of the index of recognised training occupations, and applied research. The BIBB also coordinates the implementation of the Erasmus+ programme in vocational education and training (Wissenschaftsrat, 2017).
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and the Standing Conference of the Ministers of Education and Cultural Affairs (KMK) agreed in 1972, as part of a joint results log (Gemeinsames Ergebnisprotokoll), to establish a process to ensure that company training regulations (federal government) and frameworks for vocational school curricula (states) were coordinated with each other. They also introduced a provision that the bodies responsible for developing the curricula and training regulations would hold joint meetings, and representatives of one side would always be able to participate in an advisory capacity in the meetings of the other. Finally, they agreed that discussions between the representatives of the federal government and the states would take place if the coordinating committee could not reach an agreement (KMK, 1972).

The joint results log obviously didn’t change much, and during the 1980s, school-based education within the Dual System was the target of heavy criticism. Industry representatives were particularly critical of school-based education, saying that it was too theory intensive, too far removed from real-world practice and did not help apprentices tackle the challenges of working in industry. In other words, the schools were not serving the needs of the customer (Gerds, 2001; Hüster & Gravert, 2001). In 1991, the Standing Conference of the Ministers of Education and Cultural Affairs passed a framework agreement for the vocational schools in which vocational schools should enable students to fulfil their tasks and meet the challenges of the workplace as well as participate in shaping both the work environment and society with a sense of social and environmental responsibility. To reach this goal, the teaching and learning should be oriented towards activities and self-reliance (independent planning, conducting/implementing, monitoring and evaluating), and the two learning locations should collaborate (KMK 1991; see also Rauner, 1988). On this basis, the concept of ‘areas of learning’ (Lernfeldkonzept) was introduced in 1996. This concept replaced subjects (related to academic disciplines) as the structural foundation for the framework curricula, and introduced action- and work-orientation (related to the workplace) as the structural foundation for the framework. The traditional distinction between theoretical, school-based learning and practical, workplace-based learning was eliminated in favour of orientating the content delivered by the schools to meet the practical requirements of the profession and workplace. This reform introduced a work-centred and competence-based reform of the school-based component of the dual vocational education and training system (Gessler, 2017a).

The Federal Committee for Vocational Education and Training merged with the Main Committee of the BIBB in 1976 and has since continued as the Main Committee of the BIBB. The four-way principle of the federal committee (i.e., the involvement of employer and employee representatives, and representatives of both the federal government and the states) has continued. The Main Committee advises the federal government, addresses questions of principle and makes recommendations on them. It also partly determines

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6The framework curricula of the KMK are a kind of federal curricula. They are just a kind of federal curricula, on the one hand, because education is under the cultural sovereignty of the different states, and the KMK has no legal rights, it is just a voluntary institution of the state ministers. A federal curricula is therefore, by law, not possible. On the other hand, they are just a framework; means, content and time unites are defined roughly and methods are not mentioned. In contrast, the federal training regulations for the companies are very comprehensive.
the work of the BIBB (including the research programme). In 1997, the Main Committee issued the ‘Recommendations of the Main Committee of the Federal Institute for Vocational Training on Cooperation between Learning Locations (Lernortkooperation)’. Although the Main Committee only issued one recommendation on school-workplace cooperation in its nearly 50-year history (out of 169 recommendations between 1971 and 2017 in total), this recommendation was very comprehensive (BIBB, 1997, p. 4):

- The continuous exchange of information between trainers and vocational school teachers about organisational matters. Questions of teaching methodology can be improved by setting up joint task forces for trainers and vocational school teachers.

- The implementation of joint training projects is particularly suitable for deepening cooperation regarding teaching methods by developing these projects through collaboration between the learning locations involved.

- Trainer and teacher participation in joint continuing education events is especially advantageous for establishing common guidelines and breaking down possible prejudices against the other side.

- The state committees for vocational training and the responsible bodies’ vocational training and examination committees, as well as the school conferences, should be used more intensively to address questions related to cooperation between learning locations.

- The participation of vocational school teachers in company placements is a sensible way of updating the knowledge of the teachers of company procedures and workflows; this would also expand and improve contact with workplace trainers.

- Practitioners would be asked to come to the schools to address certain topics in order to ensure the practical relevance of vocational school instruction and to intensify contact between learning facilities.

In the late 1990s, several development projects to improve the collaboration between schools and companies began. Some projects were financed by a commission that represented both the federal and state levels (Bund-Länder-Kommission für Bildungsplanung und Forschungsförderung). An example of this activity is a programme with 28 singular projects that ran from 1999 to 2003. In this programme, concepts and tools were developed and tested in practice (Euler, 2003).

These reforms and activities, however, did not alter the status of the vocational school within the dual training system. In 2004, Hermann Schmidt, Secretary General of BIBB (1977–1997), clearly stated that there was an unequal power relationship, where the companies and the federal government had the authority to set the standards, leaving the vocational schools and states only able to react accordingly. His conclusion was that "this is not a cooperation among equals" (Schmidt, 2004, p. 46).
2.4 Reformed Political Act

In 2005, the Reformed National Vocational Training Act (Berufsbildungsreformgesetz) that had been initiated and reformed by the SPD government took effect. The 2004 draft legislation failed to mention school-workplace cooperation (Deutscher Bundestag, 2004). It was only in the version of the Reformed National Vocational Training Act, actually promulgated in 2005, that the relevant provision—still in place to this day—was included; vocational education and training locations (e.g., business enterprises, vocational schools, and other vocational training institutions outside of the school and company settings) ‘collaborate in the execution of vocational education and training (cooperation of the learning locations)’ (Berufsbildungsreformgesetz, 2005, p. 933). The aim and hope of this enactment was to increase the value placed on vocational schools and to improve collaboration (Deutscher Bundestag, 2005).

At the same time, however, it should be noted that the ‘sole responsibility of companies’ for the success of vocational training was left in place (§14). This both weakened the position of school-based education and caused difficulties for companies unable to keep up with increasing specialist requirements. For example, the President of the German Chamber of Commerce and Industry (DIHK Deutscher Industrie- und Handelskammertag), Ludwig Georg Braun, said in 2007:

> Many companies are hardly able to cope with the requirements of such overloaded training regulations. The modernisation of job profiles is clearly out of control if, for example, a company that trains an plant mechanic apprentice has to deal with 72 pages of training regulations. (Braun quoted in Rothe 2011b, p. 123; translated by the author)

Overall, however, the 2005 Act was an attempt to strengthen the position of the vocational school. One innovation was the right of the apprentice to ask the chamber to include his or her performance in vocational school on his or her final chamber diploma (§37,3). It was also added that a ‘third-party expert opinion’ (e.g., performance in the vocational school) could be included in the final chamber examination to substitute for certain parts (§39,2). The new innovations were only optional and have never been put into practice (Severing, 2011).

Finally, it is significant that the guiding concept of ‘professional capacity for action’ has created a shared, connecting objective to establish grounded work-based learning in both locations (Gessler & Howe, 2015). The 1969 version of the law, for example, is formulated as follows: “The final examination is to determine whether the candidate has mastered the necessary skills”. In the 2005 version, the paragraph (§38) reads: “The final examination is to determine whether the candidate has acquired the professional capacity to act”. While the old version set the development of skills as the uppermost training goal (i.e., something that would primarily be acquired in workplace training),

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7The DIHK is the coalition of all German Chambers of Commerce and Industry with the status of a private legal association. The Chambers of Commerce and Industry themselves, by contrast, are corporations formed under public law.
the new version of the law calls for the development of professional capacity made up of skills, knowledge, attitude and abilities developed both at the workplace and in school.

We have described the historical development and the stabilisation of the asymmetrical Dual System after the Second World War. Since the 1970s, a special effort of the system development was to give the private training in the companies a public framing, involve the trade unions and to implement steering committees on all levels. Since the 1990s, a special interest was to strengthen the role of the schools within the duality. The question now is: What does this mean in quantitative figures?

2.5 Results

In 2017, the German Chamber of Commerce and Industry (GCCI) published results of an online survey involving 10,561 companies (GCCI, 2017). According to this study, 86% of the companies are satisfied or very satisfied with the work of the vocational schools. When questioned on potential for improvement, however, 63% would like more intensive communication between the school and the company. According to the study of the GCCI, it is apparent that “cooperation between learning locations of schools and companies can be intensified” (GCCI, 2017, p. 16). Cooperation is interpreted here as communication. How exactly the communication could be improved was not part of the inquiry.

In 2015, the GCCI also surveyed 11,541 companies in an online survey to gather positive and critical aspects of satisfaction with the regional vocational school situation. In this survey, only 38% of the companies indicated that there was a regular and trusting exchange of information between the vocational school and the company, while 48% specified that cooperation needed improvement. Precisely what kind of exchange of information was meant remains unclear. It also remains unclear how exchange of information was to be improved. The cooperation between learning locations was limited to a specific item in this survey (in addition to those mentioned). In this item, the question was whether the companies are satisfied with the vocational school situation in the region, because “there are joint projects between the vocational school and the company (cooperation of locations of learning [Lernortkooperation])” (GCCI, 2015, p. 8). Five percent of the companies surveyed chose this item as the reason for their satisfaction. In this survey, cooperation between learning locations was equated with joint projects.

The comparison of these two studies shows that the concept of cooperation between learning locations is used differently (i.e., communication/joint projects). On the other hand, the two studies have similarities; 62% of the companies say that there is no regular and trustworthy exchange between the vocational school and the company (GCCI, 2015), and 63% would like more intensive communication (GCCI, 2017).

The most recent study by the Federal Institute for Vocational Education and Training (BIBB), from the perspective of the company (N = 1.362), is based on a survey from 2008! On a scale of 1 to 6 (1 = not at all; 6 = very strong agree), cooperation between learning locations is rated 2 on average. In this study, cooperation between learning locations has been operationalized by means of the following: (1) the implementation of joint projects, (2) the coordination of teaching and training plans, (3) the involvement
of industry practitioners in teaching, (4) combined working groups/task forces, (5) the
exchange of information on the behaviour and achievement of apprentices and (6) training
projects with companies in the region (Ebbinghaus, 2009, p. 43).

The first representative studies of collaboration between learning locations arose at the
beginning of the 1990s in cooperation between the BIBB, the University of Dortmund,
and Humboldt University in Berlin. Results from these studies are still used as a reference
(Euler, 2017; Rauner, 2017) since comparable up-to-date studies are scarce or completely
lacking. Major results of these studies were:

- Only 8% of the apprentices interviewed (N = 3,300) were of the opinion that the
  learning locations are closely coordinated with each other in terms of time and
  content (Autsch et al., 1993; Walden & Brandes, 1995).

- Sixty-eight percent of the trainers (N = 2,624) and 75% of the teachers (N = 1,622)
  contacted each other because the apprentices had learning difficulties; another 47%
  of the trainers’ reasons to get in contact and 54% of the teachers’ reasons to get
  in contact were the result of disciplinary problems with the apprentices, while only
  20% of the trainers’ reasons and 9% of the teachers’ reasons to get in contact were
  to provide coordination of content (Pätzold, Drees & Thiele, 1993).

- Twenty-six percent of the companies surveyed (N = 1,500) have no contact at all
  with the vocational school, while 31% have sporadic contact, another 7% cooperate
  if there are problems, and only 35% have continuous cooperation (Berger &
  Walden, 1995). In a later study, this system was also used for the typology of
  teachers: According to the later study, 8% of teachers had no contact, 31% had
  only sporadic contact, 9% cooperate if problems exist, and 51% had continuous
  cooperation (Walden, 1999).

The results of Berger and Walden (1995) fit in with the above studies of the GCCI (2015),
according to which 62% of companies do not have a regular and trustworthy exchange of
information between the vocational school and the company.

Recent studies further demonstrate that the situation has not improved from the point
of view of the apprentices. In the study carried out by Beicht et al. (2009), 11% of the
trainees (N = about 6,000 apprentices) specified, for example, that there was a very
strong or strong cooperation between company and school. Thirty-two percent viewed
the cooperation as rather strong, and 57% as rather small, small, or absent. On a scale of
1 to 6 (1 = very strong; 6 = not at all), the mean value was 3.8. Collaboration between
learning locations received the worst value of all quality variables recorded (range: 2.6 to
3.8). A series of studies carried out between 2012 and 2014 yielded similarly poor results.
Apprentices (N = approx. 4,000) were also interviewed, and criticism was levelled at the
structural and content-related shortcomings of the cooperation between learning locations
(Rauner & Piening, 2015).

There seems to have been little improvement since the 1990s. There are gaps in the
data, however; the most recent differentiated survey of companies dates back to 2008.
This lack of data corresponds to a loss of interest in the last 15 years in the research
field and also in the public discussion. We did an analysis of the largest database for educational publications in Germany (Fachinformationssystem Bildung), and 2016 was the first time since 1990 that no publication appeared related to the collaboration between companies and schools (Figure 1).

Figure 1: Publications Related to Collaboration between Companies and Schools in the Dual Apprenticeship System

The loss of research interest began in the first half of 2000. At the same time, a growth of research interest related to the political mainstream topic ‘output- and outcome-orientation’ (e.g., qualification framework, competence measurement) began. The actual status of collaboration observed by the companies and schools is unclear. Another fundamental problem of research in this field is that an underlying theory of collaboration is missing.

3 Empirical Study

A basic problem was how the concept ‘cooperation’ or ‘collaboration’ could be elaborated and theoretically framed. We use ‘collaboration’ as the broader term, which includes different collaborative activities such as coordination, cooperation and co-construction. Another question was which economic sector (agriculture, crafts, industry, services) should be examined. In principle, all sectors are eligible as the Dual System is implemented in all sectors. Due to the importance of the industrial sector in Germany, we have decided on a survey in this sector.

3.1 Research Design

3.1.1 Level of Investigation and Research Question

The Dual System can be investigated, first, under the perspective of immediate and mediate collaboration, and, second, on different levels.
• On a macro-level, the immediate collaboration related to the process to develop federal training regulations for the companies on the one side and the process to develop framework curricula for the schools on the other side could be questioned. Another focus on this level would be the mediate collaboration between the four stakeholder groups (federal government, state governments, federal employers’ association and federal employees’ association) within the joint committee, the Main Committee of the BIBB.

• On an exo-level, the immediate collaboration related to the process to control the executing institutions (companies and vocational schools) would be a focal point, especially the work of the chambers on the one side and the work of the education authorities on the other side. On this level the mediate collaboration between the three stakeholders groups (state government, local employers’ association and local employees’ association) within the state committee for vocational education and training could be another topic.

• On the meso-level, the immediate collaboration between the executing institutions (companies and vocational schools) and their actors (trainers and teachers) would be central. On this level, there also exist a joint committee to facilitate, promote and foster mediate collaboration, the committee of the competent authority with three stakeholder groups (representatives of local employers’ association, representatives of the local employees’ association, and representatives of the schools, normally the principals of the vocational schools). Another possible unit of investigation could be the examination boards, where, besides the VET experts for the employers’ and employees’ sides, at least one teacher be present.

• On the micro-level, the level of the apprentices/students, the main question would be how these actors integrate the information they get from the two separate institutions into their individual knowledge base, how they connect the different experiences and how they form a professional identity within and across the different locations.

With regard to the design and the success of the learning processes at the micro-level, the levels interact on the one hand, and on the other hand, the intensity of the effect on the learning process decreases with increasing distance from the micro-level. The macro-level has the least influence on the learning process and learning performance, although this creates necessary conditions to promote collaboration on the exo- and meso-levels.

The focus of this study is the immediate collaboration between the actors of the companies (trainers) and schools (teachers) who organize and implement the training and teaching processes. The investigation is thus located on the meso-level.

3.1.2 The Concept ‘Collaboration’ and the Development of the Questionnaire

Collaboration can be considered from three perspectives. On a societal level, the concept is embedded in a historical process with a principle of quasi-natural social specialisation
and differentiation of work, the division of labour, and the mutual need of collaboration as a consequence of the restrictions of individual resources. On an organizational level, collaboration is embedded in a principle of efficiency with the purpose of optimization of joint activities to improve performance and products. Our approach investigates collaboration on the action level with the focus on the actors and social processes. Actions are embedded in evolved formal structures, which must be subjectively redefined and recontextualized in everyday practice. The societal and the organizational level are also relevant contexts for this recontextualisation. Our concept of ‘collaboration’ is based on and inspired by works from scholars in cultural-historical activity theory (Fichtner, 1984; Engeström 1987; Wehner et al., 1998; Wehner et al. 2000).

Actions are embedded in evolved formal structures. Actions are not ‘free in space’. The pre-configuration of collaboration between teachers and trainers, we call ‘initial coordinatedness’ (Wehner et al. 1998) or ‘implicit collaboration’, was formed in a complex historical process (see sections one and two of this article). The history, tradition and framework set by law and regulations at the macro-level and the exo-level are not determining directly the actions, but they create a shared means and overlapping tasks between teachers and trainers. In the initial status of coordinatedness, companies and schools can participate and contribute to the Dual System without direct collaboration. Activities are executed without communication and without orientation to the concrete partner. The activities are nevertheless roughly integrated through the common framework on the macro- and meso-levels, and are nevertheless related through the historical process (see Table 1).

This ‘initial coordinatedness’ forms a rough joint context and orientation for teachers and trainers, and must be redefined and recontextualised in the face of contingent, unexpected events in daily practice. Explicit coordinative activities arise. We distinguish between ‘corrective coordination’, driven by unexpected events, and ‘expansive coordination’, based on the anticipation of unintended events. The corrective coordination is problem-driven and past-oriented, while the expansive coordination is goal-driven and future-oriented. On the surface of the observable actions, these two orientations cannot be distinguished, but they become visible if the underlying motivation, goal-orientation and time line are analysed. Experience is a necessary pre-condition for the expansive coordination. We therefore expect that the expansive coordination started once as a corrective coordination. The problem-driven and past-oriented corrective coordination is therefore more than just the situative solution or a single action. It is a valuable resource for expansive coordination. Examples for coordinative actions are the exchange of information between teacher and trainer on the social behaviour, professional performance, and the engagement and discipline of the apprentice. Other examples are visits of teachers in companies to improve their understanding of the work and situation in the company (exploration of the companies), clarification of organisational issues (e.g., examination date) or the offer of an open consultation day for trainers in the schools. These consultation days are normally done with the idea of improving coordination. Shared expectations and intentions with divided responsibilities on the basis of the given traditional initial coordinatedness are the common characteristics of corrective and expansive coordination. Expansive coordination can lay the groundwork for cooperation.
### Table 1: The Concept Collaboration

<table>
<thead>
<tr>
<th>Collaboration</th>
<th>Implicit</th>
<th>Coordination</th>
<th>Cooperation</th>
<th>Co-construction</th>
</tr>
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<tr>
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<td><strong>Need or opportunity</strong></td>
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<td><strong>to solve a problem</strong></td>
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<td><strong>goals</strong></td>
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Examples for such cooperative activities are cross-institutional learning projects, joint events in the school or in the company, the coordination, tuning and matching of company training plan and school curriculum and joint development of training and teaching materials. Shared objectives with a high degree of interdependence on the basis of the given traditional initial coordinatedness are the common characteristics of cooperation.

The last form of collaboration is ‘co-construction’. We expect that this form can either emergent bottom-up if the partners in the phase of cooperation reflect their role and the initial coordinatedness due to unsatisfactory cooperative practice as a result of the basic division of labour and the incorporated division of responsibility. The orientation towards a common goal could trigger revision of the given roles. As a result, the partners now act towards a common goal within a unified institution. Examples for this form of collaboration are joint and institutionalised working groups/task forces, further joint training, the involvement of trainers in the schools, and internships of teachers and teacher students at the company. The boundaries between school and companies lose their relevance. Another option for the establishment of this type of collaboration could be a top-down approach through legislative regulations. This intervention is, in our opinion, problematic, as this type of collaboration not only needs institutions/structures,
it also needs a common mindset. Top-down approaches should therefore be accompanied by intensive coaching support.

Based on this theoretical approach, we can now clarify our research question: How do experts for in-company training in companies (such as trainers, instructors, HRM) evaluate the immediate explicit collaboration (captured as coordination, cooperation and co-construction) between teachers and trainers, and what measures do they consider important to intensify immediate explicit collaboration between the two learning locations and their actors? As a result, we will get a first impression of the recent state of the art. Underlying factors, such as goal clarity, goal orientation, motivation, engagement, conflicts, commitment, trust and culture, will not be considered.

First, items were collected on the basis of the studies already carried out (Pätzold, Drees, & Thiele, 1993; Walden & Brandes, 1995; Walden, 1999; Ebbinghaus, 2009). A further source was the recommendation of the Main Committee of the Federal Institute for Vocational Education and Training (1997). In the next step, the items were categorised on the basis of the three groups of collaboration: coordination, cooperation and co-construction. The structured items were then discussed with three instructors from companies of differing sizes (<50, 50–250, >250). The structure was confirmed and some items were adjusted. Finally, a test for intelligibility was carried out with six instructors. Misleading statements were revised and discussed again with the instructors until all items were deemed understandable.

### 3.1.3 Data Collection

The investigation was carried out in the city state of Bremen (one of the 16 states in Germany). Even though the results cannot be representative of Germany because of the regional limitations, the data is suitable for establishing tendencies: (1) In a city state the distances are short. This favours collaboration, which should lead to somewhat better values when compared to larger states (e.g., Lower Saxony). (2) According to a study conducted by the GEI German Economic Institute (Institut der Deutschen Wirtschaft), Bremen is ranked number one in the federal rankings in the performance indicator ‘apprenticeship rates’ (GEI, 2016). This placement makes clear that the companies in Bremen have a high level of engagement in vocational training. This is an aspect that favours collaboration, which is why it can be assumed that the results are better compared to other federal states.

The competent authority for vocational training in the industrial sector is the Chamber of Industry and Commerce (in Bremen, the Bremen Chamber of Commerce – CCI for Bremen and Bremerhaven). For this reason, we asked for support for the survey and received it.

The survey took place online and anonymously in the first half of 2017 using the platform, Questback. All companies offering dual apprenticeships in Bremen in the industrial sector (N = 2,131) were invited in writing to participate in the survey by the Bremen Chamber of Commerce – CCI for Bremen and Bremerhaven.
3.1.4 Sample Data

The sample size should have at least 326 responses (population: 2,131, sampling error: 5%, confidence interval: 95%, distribution: 50%). As Table 2 indicates, 389 companies contributed to the survey. The limit was reached (sampling error: 4.49%). Table 2 describes the sample data in detail.

Table 2: Data sample of the Survey

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<th>Sex</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative Percentage</th>
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<td>155</td>
<td>39.8</td>
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<tr>
<td>Total</td>
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<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative Percentage</th>
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</thead>
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<td>20.8</td>
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<td>38.6</td>
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<td>3.3</td>
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<th>Valid Percentage</th>
<th>Cumulative Percentage</th>
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<td>64.0</td>
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<td>33.7</td>
<td>86.9</td>
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<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>389</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Interesting is the number of participants with leadership positions (64%). This can be interpreted as a high interest of the companies in the topic ‘collaboration between companies and vocational schools’. The distribution between the small (1 to 49 employees), medium sized (50 to 249 employees) and large companies represents the structural distribution within the population in Bremen and in Germany.

3.1.5 Reliability

In the table 3, the data of the questionnaire are shown (scale: 1 = unimportant, 2 = rather unimportant, 3 = rather important, 4 = important).

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples and number of items</th>
<th>M</th>
<th>SD</th>
<th>α</th>
</tr>
</thead>
</table>
| COOR: Coordination (N=375) | • Exchange of information on the professional performance of apprentices  
• Defined time slots of the availability of the contact persons of the vocational school  
• Teachers visit the training companies (company survey)  
• The vocational school invites the trainers to an open consultation day | 9    | .33 | .42  |
| COOP: Cooperation (N=369) | • Carry out cross-institutional learning projects  
• Conduct joint events in the vocational school or in the company  
• Tuning of company training plan and school curriculum | 6    | 2.83| .60  |
| COCO: Co-construction (N=369) | • Trainers (instructors) and teachers take part in further joint training courses  
• Institutionalised joint working teams  
• Participation of company practitioners in vocational school teaching  
• Internships of student teachers in the companies | 9    | 2.65| .67  |

The internal consistence (Cronbach’s α) is acceptable (coordination) and good (cooperation and co-construction). A view on the means show that less inventive measures with a higher degree of independence, such as coordination, are more preferred than high inventive measures with a high degree of intertwining, such as co-construction.
3.2 Results

We asked the experts who should initiate the first contact. The asymmetrical relation between the companies and schools within the Dual System was already described. Independent of this framing, 77.9% of the respondents are of the opinion that the teacher should initiate the first contact. Just 22.1% of the respondents see the responsibility on the companies.

3.2.1 The Lack of Collaboration

We asked the companies which collaborative measures already existed (scale: 1 = exists completely, 2 = exists rather frequently, 3 = exists rather seldom, 4 = does not exist). To identify the lack of explicit collaboration, we grouped the measures into the three categories ‘coordination’, ‘cooperation’ and ‘co-construction’ and analysed the answers (‘exists rather seldom’ and ‘does not exist’) group by group (company size). The results are presented in Table 4.

Table 4: Lack of Explicit Collaboration

<table>
<thead>
<tr>
<th>Company Size (employees)</th>
<th>1 - 49</th>
<th>50 - 249</th>
<th>&gt; 250</th>
<th>All **</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coordination</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack (total)</td>
<td>76.5 %</td>
<td>71.1 %</td>
<td>71.4 %</td>
<td>74.2 %</td>
</tr>
<tr>
<td>Does not exist</td>
<td>39.8 %</td>
<td>36.8 %</td>
<td>29.3 %</td>
<td>37.6 %</td>
</tr>
<tr>
<td>Exists rather seldom</td>
<td>36.7 %</td>
<td>34.3 %</td>
<td>42.1 %</td>
<td>36.6 %</td>
</tr>
<tr>
<td><strong>Cooperation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack (total)</td>
<td>93.1 %</td>
<td>91.9 %</td>
<td>94.6 %</td>
<td>93 %</td>
</tr>
<tr>
<td>Does not exist</td>
<td>63.8 %</td>
<td>59.7 %</td>
<td>67.7 %</td>
<td>63.1 %</td>
</tr>
<tr>
<td>Exists rather seldom</td>
<td>29.3 %</td>
<td>32.2 %</td>
<td>26.9 %</td>
<td>29.9 %</td>
</tr>
<tr>
<td><strong>Co-construction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack (total)</td>
<td>94.4 %</td>
<td>95.7 %</td>
<td>94.4 %</td>
<td>94.8 %</td>
</tr>
<tr>
<td>Does not exist</td>
<td>74.5 %</td>
<td>81.0 %</td>
<td>71.5 %</td>
<td>76.3 %</td>
</tr>
<tr>
<td>Exists rather seldom</td>
<td>19.9 %</td>
<td>14.7 %</td>
<td>22.9 %</td>
<td>18.5 %</td>
</tr>
</tbody>
</table>

* = percentage based on valid data per category
** = percentage based on valid data in the sample

The lack of explicit collaboration is high (all: 74.2%, 93%, 94.8%). The two learning locations (companies and vocational schools) are mostly operating within the given political framework without an orientation to face contingent and unexpected events in the daily practice together (coordination), to improve together the quality of the system (cooperation) or to implement together innovative practices based on a reformed division of labour (co-construction).

The lack of collaboration illustrates the actual and recent partnership situation. Which measures should be undertaken in the perspective of the companies to change this situation?
3.2.2 Ranking List of Collaborative Measures

To what extent a measure already exists ('exists completely' until 'does not exist'), indicates the need. The importance of a measure ('unimportant' to 'important') was also asked. The values were recoded (see Table 5) and multiplied by each other to obtain a ranking of the necessary and desired collaborative measures.

Table 5: Decision Table

<table>
<thead>
<tr>
<th>Importance</th>
<th>0=unimportant</th>
<th>0=rather unimportant</th>
<th>1=rather important</th>
<th>2=important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need</td>
<td>4 = does not exist</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3 = exists rather seldom</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2 = exists rather frequently</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1 = exists completely</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Unimportant and rather unimportant rated measures are given by the multiplication 0. The rank value '8' corresponds to an important collaborative measure that does not yet exist. Ranking values from '3' (highlighted in gray in the table) indicate actions that must be initiated or intensified. In the table 6, the necessary measures are ordered in descending order according to their ranking values.

All coordinative measures are listed in the first section of the measures (3.0 and higher). Also four cooperative measures and two co-constructive measures are in this section. These fifteen measures (out of 24) seem to be promising to improve the recent situation and could represent a starting point. Another nine measures are below the cut-off point. We name them 'not welcomed approaches'. Popular approaches are in this list of not welcomed approaches: joint events, institutionalised joint working teams / joint task forces and internships of teachers in the companies. Internships of teacher students are, in contrary, welcomed.

4 Conclusion

The German Dual Apprenticeship System has a set of basic principles for work division and collaboration on different levels of the system. They include:

Macro-Level (federal level)

(1) The Federal Government is setting the framework for the in-company training through national acts. The Federal Institute for Vocational Education and Training [BIBB] is responsible for the coordination of the development process of training regulations. Representatives from the employers and the employees develop together the training regulations. Apprentices have the obligation to attend part-time vocational schools (normally 12 hours per week).
Table 6: Ranking List of Collaborative Measures (need x importance)

<table>
<thead>
<tr>
<th>All items</th>
<th>Type</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Exchange of information on the social behaviour of apprentices</td>
<td>COOR</td>
<td>366</td>
<td>4.65</td>
</tr>
<tr>
<td>2. Exchange of information on the professional performance of apprentices</td>
<td>COOR</td>
<td>365</td>
<td>4.52</td>
</tr>
<tr>
<td>3. List of contact persons of the vocational school</td>
<td>COOR</td>
<td>357</td>
<td>4.39</td>
</tr>
<tr>
<td>4. Defined time slots of the availability of the contact persons of the vocational school</td>
<td>COOR</td>
<td>354</td>
<td>4.31</td>
</tr>
<tr>
<td>5. Exchange of information on the personal engagement of apprentices</td>
<td>COOR</td>
<td>364</td>
<td>4.25</td>
</tr>
<tr>
<td>7. Tuning of company training plan and school curriculum</td>
<td>COOP</td>
<td>357</td>
<td>4.12</td>
</tr>
<tr>
<td>8. Teachers visit the training companies (exploration of the companies)</td>
<td>COOR</td>
<td>355</td>
<td>3.91</td>
</tr>
<tr>
<td>9. Internships of student teachers in the companies</td>
<td>COCO</td>
<td>357</td>
<td>3.68</td>
</tr>
<tr>
<td>10. Carry out cross-institutional learning projects</td>
<td>COOP</td>
<td>365</td>
<td>3.34</td>
</tr>
<tr>
<td>11. Participation of company practitioners in vocational school teaching</td>
<td>COCO</td>
<td>355</td>
<td>3.33</td>
</tr>
<tr>
<td>12. Clarification of organisational issues</td>
<td>COOR</td>
<td>363</td>
<td>3.23</td>
</tr>
<tr>
<td>(e.g., examination dates)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. The vocational school invites the trainers yearly to an open consultation day</td>
<td>COOR</td>
<td>349</td>
<td>3.13</td>
</tr>
<tr>
<td>14. Carry out cross-institutional learn and work assignments (exploration tasks)</td>
<td>COOP</td>
<td>359</td>
<td>3.10</td>
</tr>
<tr>
<td>15. Joint development of training and teaching material</td>
<td>COOP</td>
<td>362</td>
<td>3.00</td>
</tr>
<tr>
<td>16. Trainers (instructors) and teachers take part in further joint training courses</td>
<td>COCO</td>
<td>355</td>
<td>2.90</td>
</tr>
<tr>
<td>17. Internships of teacher in the companies</td>
<td>COCO</td>
<td>357</td>
<td>2.84</td>
</tr>
<tr>
<td>18. Supervising and supporting team of instructors and teachers who initiate and coordinate cooperative activities with a view to a vocational school classes</td>
<td>COCO</td>
<td>347</td>
<td>2.78</td>
</tr>
<tr>
<td>19. Institutionalised joint working teams / joint task forces</td>
<td>COCO</td>
<td>355</td>
<td>2.73</td>
</tr>
<tr>
<td>20. Conduct joint events in the vocational school</td>
<td>COOP</td>
<td>361</td>
<td>2.54</td>
</tr>
<tr>
<td>21. Teachers discuss the apprentices’ self reports (reports about the learning outcomes in the company) with the apprentices</td>
<td>COCO</td>
<td>359</td>
<td>2.52</td>
</tr>
<tr>
<td>22. Conduct joint events in the company</td>
<td>COOP</td>
<td>363</td>
<td>2.45</td>
</tr>
<tr>
<td>23. Coordinators for cooperation at the vocational schools</td>
<td>COCO</td>
<td>339</td>
<td>2.44</td>
</tr>
<tr>
<td>24. Fundamental questions of cooperation are clarified in a cooperation agreement</td>
<td>COCO</td>
<td>341</td>
<td>2.28</td>
</tr>
</tbody>
</table>
(2) The KMK coordinates the development process of school curricula (so called framework curricula). Representatives from the state governments develop together the framework curricula. The framework curricula and the learning situations in the schools, the content, and methods are (or should be) based on the real work processes of the companies.

(3) Training regulations for the companies and curricula for the schools are developed in a coordinated process (agreement between KMK and federal government). The KMK recommends collaboration between schools and companies (1991). The Main Committee of the Federal Institute of Vocational Education and Training recommends collaboration between companies and schools and defines principles of that collaboration (1997). The Reformed National Vocational Training Act (2005) requires that companies and schools to collaborate in the execution of vocational education and training. Principles are not defined in the act.

Exo-Level (state or regional level)

(1) School-based learning is the sole responsibility of the state governments and separated from the federal responsibility for the in-company training. The state governments set the frameworks for the school-based learning though school acts or regulations within their states. A minority of state school laws have institutionalised the collaboration between schools and companies (e.g., Hamburg in 1997).

(2) Employers, employees, and state governments together build (since 1969) a steering committee on the state level—the State Committee for Vocational Education and Training (Landesausschuss für Berufsbildung).

Meso-Level (institutional level/level of the actors)

(1) The companies have the responsibility for the overall success of the vocational education and training. The in-company training is controlled by the Competent Authority (the chambers), which also executes the final trade examinations. Employers, employees and schools together build a steering committee of the Competent Authority (Berufsbildungsausschuss der zuständigen Stelle). In 2005, the representatives of the schools received the right to vote within this committee. Employers, employees and schools together also build examination committees of the chamber for the approval of final examinations. At least one teacher must be involved, and two-thirds of the committee must be employer and worker representatives.

(2) The schools are responsible for offering school-based education for the apprentices. State school authorities control the work of the schools.
The Lack of Collaboration Between Companies and Schools

(3) The level of processes and the collaboration between the actors, trainers, and teachers, are not formalised.

The German Dual Apprenticeship System shows a high degree of institutionalised collaboration on the macro-level and on the exo-level. The in-company training and the school-based learning on the meso-level however, are, in contrast, loosely coupled.

A low degree of regulation and standardisation on the meso-level creates, to put it positively, a space for flexibility, lively encounters based on interest and personal motivation, and correspond to the basic principles of training and education, such as individuality, situatedness, authentic interaction and expertise. Nevertheless, we cannot ignore the fact that the potential of collaboration between the actors (e.g., trainers and teachers) has not been exhausted, and the collaboration has not improved significantly in the last 20 years. The two meso-level systems—companies and schools—are mostly differentiated and separated. Some trainers and teachers are crossing the boundaries between the two worlds, but all students must cross those boundaries weekly—another asymmetry within the system.

Some authors and think tanks articulate the view that the problem of collaboration on the meso-level in Germany is a logical consequence of the division and coordination on the macro- and exo-levels (federal and state governments). The proposed solution—according to this logic of inheritance of qualities—is the centralisation and unification of power on the macro- and exo-levels. The Swiss Dual Apprenticeship System sets a positive example, so these authors, and should serve as a role model for Germany (Bertelsmann Stiftung, 2009; Rauner, 2017). The Swiss Dual Apprenticeship System is on the macro- and exo-levels centrally governed. That may be right, but, current studies show that the problem of collaboration between companies and schools is not solved in the Swiss System either (Sappa & Aprea, 2014; Peter, 2014).

Two perspectives should be clearly distinguished: the perspective of decision-making (structures and government) and the perspective of personal conceptions, interest, motivation, behaviour and immediate collaboration (processes and activities). The two perspectives are two sides of one coin, nevertheless, the logic of determination is in our view an inadequate frame and mindset. Collaboration between companies and schools and joint educational processes can be appreciated, promoted, supported, and valued but not prescribed. Intensive collaboration on the meso-level is even possible without such a framework. Collaboration on the meso-level is then a necessary activity for the implementation, reproduction and continuity of the system. Collaboration on the meso-level can stabilise a fragile system (Gessler, 2017b), but established robust structures on the macro- and exo-level do not produce immediate collaboration on the meso-level.

Intensive collaboration on the meso-level can be created only on the meso-level itself and on a daily basis. This collaboration can and should be nevertheless supported by activities on the macro- and exo-level, not because these activities determine collaboration and solve the problem of collaboration between companies and schools, but because these activities can create the awareness, appreciation and opportunity for collaborative activities on the meso-level. But, there has been, at least in the last ten years, no en-
engagement, no support and also no interest to intensify the collaboration between teachers and trainers, companies and schools. The orientation towards the measurement of output or outcome was more important than the orientation towards the development and improvement of the input and the processes.

The Dual System in Germany is working also without collaboration between companies and vocational schools. The robustness of the system is, for the companies, schools and the apprentices, a blessing and a curse at the same time.

References


Biographical Note

Michael Gessler, Dr. phil., Dr. h.c., is a Full Professor of Vocational Education and Training at the Institute Technology and Education (ITB), University of Bremen, Germany. He was from 2011 to 2016 the Lead Convenor of the European Research Network for Vocational Education and Training (VETNET), European Educational Research Association (EERA). Since 2017 he is the Lead Convenor of the International Research Network for Vocational Education and Training (IRNVET), World Education Research Association. His research interests focus on innovations and transfer of innovations in vocational education and training, teaching and learning, work-based learning, competence and organisation development and school-to-work transition.
1 Introduction

Today’s labor market is one of constant and unpredictable change because of the social, economic, cultural, technological and political transformations it depends on. This creates greater pressure on the productivity and competitiveness of organizations, but also on workers whose careers are subject to more frequent and complex pressures, bifurcations and transitions (Blustein, 2008; Fouad & Bynner, 2008; Fournier, Poirel, & Lachance, 2016). New organizations expectations and needs in terms of workforce qualifications open demands on more advanced knowledge and skills among workers (Adamuti & Sweet, 2008; Agrawal, 2012), as well on adult vocational and training education (VET) institutions (Hamalainen, Cincinnati, Malin, & De Wever, 2014; Nore & Lahn, 2014). In this respect, VET plays a key role in the social development of societies and communities in a context of market globalization and continuous technological innovations (Billett, 2014; Bosch & Charest, 2008; Grubb, 2006). VET helps to promote the socioprofessional integration of young people and adults in many countries, the pursuit of careers more oriented towards own life aspirations, as well as preventing social exclusion and poverty (Billett, 2004; Cournoyer, Fortier, & Deschenaux, 2016; Fournier, Lachance, & Bujold, 2009; Virolainen & Stenstrom, 2014).

VET’s orientations, roles and learning models in different nations vary greatly and are largely based on public and educational policies in place, as well as on the way in which the different social actors involved (governments, training institutions, employers, unions, etc.) collaborate or not. Public policies and measures put in place to ensure...
the development of VET competences implies, as is the case in countries like Germany, Norway, Sweden, Finland and Denmark, an active participation of employers, unions, academic institutions and government representatives to ensure quality and mobility, while in other places, such as England, France, Spain, Portugal, Italy and Greece, the role played by these groups are less integrated (Brockmann, Clarke, & Winch, 2008; Eichhorst, Rodrigues-Planas, Simdl, & Zimmerman, 2012; Virolainen & Stenström, 2014). As well, in some countries, such as Norway, Denmark, Switzerland and Germany, VET is offered, through dual and holistic models that encompass a continuous alternation of learning experiences within academic institutions and work organizations. In other countries (ex., Canada, United States, England, France), these apprenticeships respond to a more sequential and linear model of academic experience complemented by internships within work organizations (Bosch & Charest, 2008; Brockmann et al., 2008; Eichhorst et al., 2012). Also, some VET apprenticeship models rely on the joint acquisition of general knowledge transferable to several professional activities and others that are applied solely and specifically to a trade, while in other places the focus is mainly on the latter (Brockmann et al., 2008). VET success is thus based on the one hand on a continuous alternation of learning between the school and work organization environments and on the partnership between the different social actors concerned by education and employment (governments, employers, schools). On the other hand, it depends on the ability to adjust to technological change and to acquire the skills required by the labor market, the promotion of this type of education (versus higher education) among youth and adult populations, as well as on favorable employment opportunities and conditions (Eichhorst et al., 2012; Grubb, 2006). VET is an interesting training option for individuals looking to find, in a relatively short period, better working conditions and employment outlooks, as well as for employers looking for skilled and productive workers able to adapt to labor market and technological transformations (Hoeckel, 2008). In addition, it seems that these benefits depend greatly on the quality of the school-to-work transition that individuals, institutions, employers and policy makers are able to ensure (Billett, 2014; Goyer, 2017; Grubb, 2006; Hart, 2017; Hofman, Stalder, Tschan, & Häfeli, 2014; Nurmi, Salmela-Aro, & Koivisto, 2002).

However, in many countries, VET suffers from a lower status and negative social value attributions compared to higher education (Billett, 2014; Lovsin, 2014; Virolainen & Stenström, 2014). It is often considered as an interesting and safe option for students with learning, motivation and retention difficulties. These latters are indeed often perceived as having more manual than intellectual vocational interests and competencies and thus have more or less the choice of their formation. (Deschenaux, 2007; Eichhorst et al., 2012). However, it seems that VET is perceived differently and more positively among young people and adults who voluntarily choose to engage in it (Cournoyer et al., 2016; Krahn & Taylor, 2005).

Despite that, several categories of individuals at different moments of their lives are attracted by VET. Initially and mainly organized to welcome and train adolescents and young adults at the end of their compulsory schooling, the transformations and the upheavals of the economies and the labor market bring—or rather bring back—to school more experienced workers (Harris, Sumner, & Rainey, 2005; Lehmann, Taylor, & Wright,
As pointed out by Masdonati, Fournier and Pineault (2015), VET offers very interesting conditions and perspectives for people wishing to quickly acquire qualifying training to enter a new career. As an adult, going back-to-school in VET is often associated with a life course marked by more or less satisfactory job tasks and conditions, parallel relational, conjugal, parental and financial tensions, as well as other personal difficulties or challenges: psychological and physical health problems, single parenthood, social assistance, work accidents, immigration, etc. (Cournoyer et al., 2016; Deschenaux & Roussel, 2006; Lehmann et al., 2014; Polesel, 2010). The academic pathways of these individuals are often accompanied by difficulties in terms of academic perseverance, motivation and confidence (Lehmann et al., 2014; Vonthron, Lagabrielle, & Pouchard, 2007). VET thus makes it possible for these adults to become more skilled, confident and autonomous in a specific field of action, bringing concrete, safe and satisfying sense of self, as well as better work conditions and professional outlook (Billett, 2014; Cournoyer et al., 2016; Dormeier, Freire, & Giang, 2012; Field, Hoeckel, Kish, & Kuczera, 2009; Molgat et al., 2011; Rousseau, Théberge, Bergevin, Tetralult, Samson, Dumont, & Myre-Bisaillon, 2010). VET can allow them to quickly learn and acquire skills, to complete rather short duration schooling and to learn in a more concrete, practical and applied way (Brockmann et al., 2008; Powell, Bernhard, & Graf, 2012).

The continuous evolution and transformation of the labor market, the emergence of new technologies, the renewed needs of employers, and the constant increase of adult populations with more diverse characteristics and life paths call for new knowledge, practices, skills and teaching conditions in VET. Teachers play an important role in the ability to train skilled and effective workers who are able to transfer their knowledge and skills appropriately to different work situations. To do so, it is as important for them to have renewed and better adapted knowledge and skills to better meet new standards and meet the learning needs of more diverse student populations, as well as to benefit from climates and teaching conditions favorable to the intended objectives (Grubb, 2006; Hinrichs, 2014; Wärvik, 2013).

Career transitions are also influenced by uncertainty and constant changes, among other things, according to the evolution of the economy and the labor market, which generates complex situations of more or less voluntary choice (Fouad & Bynner, 2008). This is the case for adults who decide, at some point in their lives, to make a career change that will lead them to go back-to-school in VET. This type of change comes with more or less linear transitive phases of engagement and motivated choice, preparation and exploration, but also of recoil, latency, readjustment, and doubt (Donahue, 2007; Heppner & Scott, 2006; Ibarra, 2006; Negroni, 2007). According to Cournoyer et al. (2016), VET career-oriented adults are frequently motivated by the search for a project that can fully satisfy their personality, but they are also looking for a certain continuity in their interests and experiences, as well as security and personal stability within a job and a work organization that can help them to maintain or obtain the quality of life they expect including with their family and close ones.

While older adults are becoming more numerous in VET programs population, as their characteristics and pathways are more complex and diversified, little research until
now have focused on a better understanding of the realities, issues, processes and effects of decisions, transitions and changes that accompany graduation efforts (Cournoyer et al., 2006; Hostetler, Sweet, & Moen, 2007), both at the individual, institutional or social levels. This special issue aims to offer a better understanding of this phenomenon from different perspectives. In this regard, the authors of this issue contribute to answer to questions such as: Who are the adult students who return to VET and what characterize them? What are their experiences and processes of decision making, change and adaptation in VET? How do public policies, education systems and learning models influence how to qualify for a trade? This issue is composed of five articles.

The first paper, titled “Why Returning to VET? Results of a Qualitative Comparative Study about English and German Car Mechatronics”, by Ericka Gericke, proposes a comparative research on educational choices and especially the influence of class on VET decision-making from a subject-oriented perspective. Gericke has decide to work with the concept of “biographical occupation orientations” in order to explore the experience of eleven English and German car mechatronics. These two populations have been selected because of their significant differences in their VET systems, the first characterised of dual and holistic training, the second characterised of a diffuse, but flexible structure. As mentioned by the author, the concept of biographical occupation orientations acts as a mediator between the structure (VET system, vocational requirements) and action (professional identity, processes of self constitution) levels. Gericke aims to answer two main research questions, one dealing with biographical occupation orientations developed by English and German mechatronics, the other with how their development are affected by the two VET systems. Emerging from a Grounded Theory methodology, findings show and detail patterns about the interplay of biographical occupation orientations with subjective perceptions of each VET system and the decision for returning to VET, and also how the national vocational and education training system influences the biographical occupation orientations process.

The second article, titled “Decision-Making Rationales among Quebec VET Student Aged 25 and Older”, by Louis Cournoyer and Frédéric Deschenaux, focuses on adults aged 25 and over making the decision to return to school in VET. These adults have personal, academic, professional and other (family, marital, social) life paths marked by a series of events, encounters, conjunctures, bifurcations, breaks, leading them to consider VET as a possible salvation option for their future and the improvement of their living conditions. Based on the interviews with 30 adults, which traced their educational and professional life path, Cournoyer and Deschenaux sought to identify the rationales shared by the majority of them. To identify, detail and illustrate these rationales, the contents of interviews were analysed according to a decision-making model developed by the authors and their collaborators. This model articulates two complementary perspectives, one biographical, focusing on the study of life courses and personal projects, the other interactionist, focusing on contextual strengths and strategies ‘adjustment. Five rationales are identified as a result of the analysis, which are also decision-making actions by these adults.

The third paper, titled “The Reasons Behind a Career Change Through Vocational Education and Training”, by Jonas Masdonati, Geneviève Fournier, and Imane Z. Lahrizi,
proposes an exploration and a categorisation of the reasons underlying career changes through VET. The research focuses on 30 VET students from the Province of Quebec, Canada, aged 25 to 45, enrolled in a program with a goal of career change. The notion of career change, from a psychosocial perspective, is at the heart of the researchers’ approach. Results stress major motives of career change through a return to VET, one reactive, the other proactive, as well as for each of them different categories of reasons for change. Masdonati, Fournier and Lahrizi point out the importance of going beyond the characterization of voluntary or involuntary change in these adults, but rather to dwell on the perceptions of mastering their decision with regard to the influences of contexts. Finally, they suggest that informal learning processes are already in place even before the decision to make a formal enrollment in a VET program Finally, the results highlight the heterogeneity and complexity of older student populations in vocational training, as well as the importance of better understanding the reasons for career change in order to conceive effective interventions in this regard.

The fourth article, titled “When Work Comes First: Young Adults in Vocational Education and Training in Norway”, by Anna Hagen Tønder and Tove Mogstad Aspøy, explores the personal trajectories of 25- to 35-year-old adult students (n=34) enrolled in two important VET programs in Norway, one in Carpentry and the other in Child Care and Youth Work. The first is a male-dominated occupation, the second a female-dominated one. Since 1994, VET in Norway has been integrated into upper secondary education where pupils aged 15 or 16 can then choose between this type of program or a general academic program. Like Denmark, Norway offers a dual apprenticeship system where education in an academic environment is combined with the vocational education provided by employers in the workplace. However, like many other countries in the world, VET is often perceived as a terminal pathway—a blind alley. In addition, recent VET surveys in Norway report significant dropout rates and the displacement of many apprenticeship-type students to study options that may facilitate access to higher education. Researchers stress the importance of better understanding the trajectories of VET adult students and the reasons why people choose to pursue VET as a “second chance” rather than the standardised route drawn up by policy makers. This opens discussion on the idea of providing institutional structures that can support workers just as much in the workplace as in school. For both the Carpentry and Child Care and Youth Service students, different trajectories were identified, which bring a better and more nuanced understanding of the motivations guiding the process leading to the decision to return to VET, in relation to their family history, their educational experiences and their transitions from school to work.

The last and fifth paper, titled “VET again: Now as a VET Teacher”, by Henriette Duch, and Karen E. Andreasen, examines the learning trajectories of two Danish vocational teachers who choose to complete a mandatory training course introduce in 2010. Teachers have to adapt themselves to different student’s profiles that comes along with various employment experiences, different ages and with very diverse personal and social characteristics. To be able to face this new VET realities, teachers who already have different qualifications and work experiences background, have to acquire new knowledge and pedagogical and didactical skills. Duch and Andreasen examine the learning
trajectories of VET teachers according to three forms of coherence, namely biography (the link between their current knowledge and their previous experiences), transitions (relationships between knowledge and skills acquired before and after the obligatory course experience), as well as the program (description of learning achieved in relation to its content). The results suggest that the course experience partly transforms teaching content and strategies according to the specific contexts of the trainers.

Social, economic, technological, cultural and political transformations affect the evolution of the labor market, generate more specific employers’ needs and expectations, as well as training institutions that train and qualify future workers. Although worldwide education systems are historically structured to accompany adolescents and young adults to a successful entry into the labor market, educational institutions have nowadays to deal with annual increases of older adults who decide to return to school in order to change career or to increase their professional skills. Unlike young people who are often reluctant to pursue VET and tend to prefer higher education, many adults see this type of program as an opportunity to acquire quickly a short-term, practice-based training opportunity, with school and work apprenticeships experience, in a variety of job-creating business sectors. This special issue focuses specifically on those adults who, at some point in their lives, choose to return to VET in order to positively change their lives, at the level of more challenging work tasks, better working conditions, safer work and life to ensure their well-being and that of their loved ones. The same goes for some teachers who decide or have to go back to school to adjust their teaching strategies to these adult students. Among the elements that must be taken into account in each of the articles is that career paths, trajectories, decision-making processes, transitions or changes are based on factors and variables that are both individual, interpersonal, social and contextual. It is also important to consider experiences, encounters, events and situations that people go through throughout their lives. Individuals, teachers and other school professionals, as well as public decision-makers, are invited to understand adults’ return to VET as a complex and challenging experience.
References


Biographical Notes

Dr Louis Cournoyer is a professor in career counseling at the Université du Quebec à Montréal. His research focuses on the career decision-making processes of young people and adults, social relations influences on career pathways, and educational and professional trajectories.

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Why Returning to VET?
Results of a Qualitative Comparative Study about English and German Car Mechatronics

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Abstract: Educational choices, especially the influence of class on these choices have been a subject of lively international debate. However, thus far, there has been little international and comparative research with respect to vocational and education training (VET) decision making from a subject-oriented perspective. This paper considers occupational-biographical orientations of English and German car mechatronics and focuses on the roles of learning and gaining vocational qualifications. Drawing on the concept of occupational-biographical orientations, the paper describes three types of orientations based on analyses of findings from 11 autobiographical-narrative interviews with English and German car mechatronics. The interviews clearly showed that occupational-biographical orientations explained different views on the necessity of returning to (continuous) vocational education and training. They also demonstrated that subjective perceptions of the national VET system fostered particular occupational-biographical challenges, which supported or hindered existing learning attitudes. Overall, the findings suggested that occupational-biographical orientations exerted the most important influence on learning biographies and decisions to return to (continuous) VET.

Keywords: VET, Vocational Education and Training, Comparative Qualitative Research, Lifelong Learning, Return on Education and Training, England, Germany

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1 Introduction

Within the scope of international and comparative vocational education and training (VET) research there have been many studies which investigate and compare the structures and training patterns of different VET systems and their transfer to other countries (Phillips & Ochs, 2004; Pilz, 2016). Over recent years, investigating learning conditions and processes of the individual learner from the subject-oriented perspective within the VET system has gained in importance but has not yet been undertaken extensively and thoroughly within the field of international and comparative VET research (James et al., 2007). Analysing different relevant VET aspects from a subject-oriented perspective is not only of value for teaching and learning processes on the micro level such as for vocational teachers but also for the macro level such as for VET policies. For instance, in Germany there is a line of argumentation that adjusting the German VET system to a stronger competence-oriented (‘English-like’) VET system will impede the development of a holistic professional identity (Drexel, 2008; Kuda & Strauß, 2006), which is a central goal in the German VET system. But so far little is known about how and to what extent the structures of VET systems affect the individual learner, the learning biography and professional identity.

2 Research Perspective

To tackle this gap in research, at least partially, the research project described here works with the concept of biographical occupation orientations. As the general topic is the effect of VET systems on the individual learner, the learning biography and professional identity, we have the VET system on the structure level and the individual learner acting out his/her professional identity on the action level. The concept of biographical occupation orientations acts as a mediator between the structure and action level. The intermediary role shall be illustrated with the vocational qualification orientation individual learners have. Vocational requirements get subjectively acquired on the structure level by filtering and breaking them through occupational-biographical processes of self-constitution (Wagner, 2000). There is the vocational requirement, i.e. qualification on the structure level and the processes of self-constitution on the action level—both levels are linked by biographical occupation orientations.

![Figure 1: concept biographical occupation orientation as the link between structure and action level](image)
It is not only the mediatory role of biographical occupation orientations which makes it a valuable concept. The concept of orientation has also been used because orientations are on the one hand cross-situational and on the other hand do not stay the same throughout the course of time, as new life situations lead to new experiences (Giegel, Frank, & Billerbeck, 1988, p. 13). In addition, biographical occupation orientations are a crucial order scheme for employed persons. These orientations mirror the specific identity construction, which employed persons form in their individualization process and onto which they hold on to (Giegel et al., 1988, p. 10). With this concept in mind two research questions have been raised:

- Which biographical occupation orientations do German and English car mechatronics develop?
- How does a holistic (Germany) and a fragmented (England) VET system affect the development of such biographical occupation orientations?

Against this backdrop, this paper investigates the role of learning and gaining vocational qualifications as one facet of biographical occupation orientations. Furthermore, it reconstructs how the structural condition, i.e. the national VET system affects this specific facet of biographical occupation orientations.

The countries Germany and England were selected because they represent two very different VET systems. The German VET system is characterised by its dual training, linking theory and practice and pursuing a holistic, i.e. concerning the whole person, training (Bertram, 2003; Waterkamp, 2006). The English VET system is fragmented, i.e. there are only a few binding specifications and many diffuse but flexible structures (van Stipriaan & Lauterbach, 2011; Shaw, Shaw, & Blake, 2016).

The car mechatronic occupation was chosen because the car technology development has been changing rapidly within the last twenty years. Thus there are changes and challenges at the car mechatronics’ workplace and it is assumed that therefore the issue of biographical occupation orientation and especially the fact of learning arise.

3 Empirical Approach

The Grounded Theory methodology (Strauss & Corbin, 1990) was used to inform the research design and tackle the research questions. Data collection was done by applying autobiographic-narrative interviews (Schütze, 1983), which comply with the Grounded Theory methodology. Furthermore, this type of interview allows to collect data from a subject-oriented perspective and to address topics like biographical occupation orientations. The data was analysed twofold: first, applying Grounded Theory coding (Strauss & Corbin, 1990) for reconstructing biographical occupation orientations in themselves and second, using narration analysis (Schütze, 1981) which enables the reconstruction of the development process of the biographical occupation orientations. Both analysis methods reveal structural influences on the development process of biographical occupation orientations. The data material had been analysed by the researcher
herself, who presented and discussed her findings on a regular basis in a research workshop in order to secure the fulfilment of quality criteria for qualitative social research (Przyborski & Wohlrab-Sahr, 2010).

The study was conducted between 2009 and 2014 in two structurally comparable cities in Germany and England. According to the Grounded Theory methodology the sampling process was done in two steps. The first step consisted in choosing selection criteria which were based on logical assumptions about car mechatronics, i.e. when might car mechatronics be confronted with the topic of biographical occupation orientations and the fact of learning? The selection criteria were:

- They have been working in their occupation for at least three years.
- The car mechatronics have acquired a vocational qualification in their field at some point of their life.

In respect to the car mechatronics’ working place, the following aspects had been taken into consideration:

- The automobile brand the car mechatronics deal with.
- The type of car workshop the car mechatronics work for (contract workshop, independent workshop).
- The employment relationship the car mechatronics have (self-employed, employed, operative level, management level).

The second step consisted in theoretical sampling, i.e. the sampling is done by applying theoretical selection criteria, which have unfolded themselves in the course of analysing the first set of data. The selection criteria were then:

- strategic use of VET institutions and programmes, collecting vocational qualifications
- defining limits of one’s own scope of duties and expertise, knowledge based on experience
- passionate handling of the car, expert knowledge due to turning hobby into a profession

According to the qualitative nature of this study and the applied Grounded Theory methodology inductive reasoning was applied. The starting point are specific observations, in my case statements by the interviewed German and English car mechatronics. Due to Grounded Theory coding specific patterns which are valid for the entire sample were reconstructed, in my case three types of biographical occupation orientations. These patterns led to tentative conclusions, as in my case for a) the interplay of biographical occupation orientations, the subjective perception of the national VET system and the decision for returning to (continuous) vocational education and training and
b) the influence of the national VET system on the development process of biographical occupation orientations.

Eleven interviews had been conducted in total, six in Germany and five in England. Interviews lasted from 50 to 180 minutes and, by agreement with the interviewees, were recorded digitally and subsequently fully transcribed. The researcher is trained in conducting autobiographic-narrative interviews and speaks both languages at a native level.

4 Description of the Findings

Following the research questions I will first describe the biographical occupation orientations the interviewed German and English car mechatronics have developed. I will then outline how the national VET systems are perceived by the interviewed German and English car mechatronics and how this has influenced their learning biography and attitude toward lifelong learning. Some of these results had been published before (Gericke, 2013).

4.1 Three Types of Biographical Occupation Orientations

Below, I present the three types of biographical occupation orientations as reconstructed from my sample of German and English car mechatronics (Gericke, 2014). The focus rests on four facets of the biographical occupation orientations, which are relevant for the topic of the paper, namely: occupational-biographic resources, working tool, professional identity and applied action strategy when challenges arise.

4.1.1 Type one of Biographical Occupation Orientations: Strategic use of Qualification Offers

German and English car mechatronics whose biographical occupation orientation can be summed up with strategic use of qualification offers draw upon the same occupational-biographic resources which is ascent and education orientation, but the motivation for this orientation differs. The German car mechatronics of this type have a strongly developed lifelong learning orientation due to parents and peer-group, who embody this orientation. Furthermore, they had experienced a standstill feeling at an early point of their working life which has strengthened their desire to gain additional vocational qualifications:

Varied work is important for me. And with this varied work also the technological advancement and my own personal advancement comes with it. So that there is no standstill feeling which I have had and then I thought about going to the school for master craftsmen (OL 1.240–244; translation by Gericke).

Due to founding a family they have developed a strong desire for job security and have looked for appropriate strategies. They applied an economic view on themselves and
looked for ways to make themselves more valuable for the employer and thus securing the job through the acquisition of expert knowledge: “This further training is also my future capital and securing my job. Because the more I know the less dispensable I am” (OL 1.354-357; translation by Gericke).

The English car mechatronics of this type had experienced a difficult school career, in some cases an educational trajectory and left school with a stigma. In spite of these experiences they have developed a strong educational orientation, thirst of knowledge and career aspirations. This was due to an education and career oriented family background and an occupational long-term perspective.

The working tool the German and English car mechatronics, who belong to this type of biographical occupation orientation, use is their up-to-date knowledge: “The typical challenge is learning [...] one of the main things is learning the technology [...] Eh you can’t fix a car properly unless you understand it” (AH 1.347–350). They acquire their knowledge by using strategically and continuously available vocational qualification offers. They are willing to invest time and money in keeping up-to-date.

The professional identity of this type of German and English car mechatronics consists of customer orientation, providing good service and being able to repair every component of a car: “to give our customers a really good and professional service [...] a mechanic was expected to know how to do all these jobs” (AW 1.1253f. and 1327f).

The automotive industry experiences a constant and rapid technological advancement, especially in respect to electrotechnology. The car mechatronics perceive the fast-changing technology as challenging and at times they feel that they lose control over the car and this threatens their ability to act:

You get to learn and know about one thing and then before you know where you are that learning is of no use to you, because they have moved on and they changed that” (AW 1.1184–1186).

The technology is doing things which are actually impossible to do [...] Nowadays the cars tell you what they want to have done with them, it’s not me anymore telling the car but the car tells me (OL 1.2141 and 1.2485f.; translation by Gericke).

By gaining up-to-date knowledge they try to maintain their ability to act in their occupation and to fulfil their professional identity, i.e. being able to repair the car and providing good quality work.

4.1.2 Type two of Biographical Occupation Orientations: Defining Limits of one’s own Scope of Duties and Expertise

German and English car mechatronics who belong to the second type of biographical occupation orientation defining limits of one’s own scope of duties and expertise have two occupational-biographic resources at their disposal. Firstly, they are excellent networkers. They come easily in contact with other people and stay connected with them. It is by using their network that they find their jobs:
I was out of work [...] So I went to see my old what was my old area manager [...] and he gave me a job (AM l.200–203).

[...] I had a couple of friends that work there. Obviously they’re not there now [...] ‘Oh, Rattling’s is looking for a mechanic [...]’ I said ‘Oh, find out how much the wages are’ (,) [...] (TO l.589–592).

Secondly, they are able to define their scope and limits of tasks and duties in their different areas of life and communicate these to their environment.

That is car electrician, they do the electronics, right. We have to do this too to some extent. A normal mechanic needs to be able to do it too. But the real electronics, no. A normal mechanic is not able to do it. That is not possible (RP l.1261-1267; translation by Gericke).

The working tool these German and English car mechatronics apply in their daily work is their experience: „I mean 90% of my job or my skill base is experience” (AM l.642). Their experience does not stem from gaining a vocational qualification but from their practical work with cars. They have started to work on cars without theoretical knowledge and learnt by trial-and-error. It is this learning-by-doing and learning by trial-and-error which constitutes the experience they draw upon in their daily work.

I’m not a qualified mechanic, never have been, everything I’ve learnt, I’ve learnt in my years in the industry (AM l.250f.). There are trained mechanics but they do everything by computer. But a lot of the problems you get with the cars with experience you can tell what’s wrong with them. But it’s just trial and error a lot of the time (TO l.1005–1008).

The professional identity of this second type of German and English car mechatronics consists mainly of customer orientation: “In the job I mean at the moment the challenging part I mean is the customers, because you have to keep them happy” (TO l.256f.). Handling the customer is very important to them. They take pride in being able to deal with very emotional customers. Nonetheless, if the customers become too emotional for them, when their self-defined limit has been exceeded, they hand over the customer to their superior: “Anytime that I feel that I can’t handle a situation, I contact them [the superior]“ (AM l.1335f.).

Next to customer orientation it is quality work which is part of their professional identity. Providing a good service for the customer and their automobile are their working objectives. Nevertheless, they do not have the aspiration to be able to repair every component of the car. Instead they see their professionalism in being able to communicate clearly their scope and limits of their work field and duties. „[...] we do some repairs. It depends on what sort of repairs it is [...]” (AM l.1335f.)

When challenges arise at the workplace and their tool ‘experience’ cannot be applied then the German and English car mechatronics of this second type of biographical occupation orientation know where and whom to ask in order to get the needed information
and support. They actively use their network and know their network-members’ expertise: “You learn from the talks with colleagues” (RP 1.1674f.; translation by Gericke). In addition, they define the challenge as one which exceeds their self-defined scope and limits of duties and expertise and hand over the problem to a colleague or superior: “I always try and do the best I can. If I can’t, if I get something I’m not sure about I’ll ask for a second opinion” (TO 1.946f.).

4.1.3 Type Three of Biographical Occupation Orientations: Passionate Professional Practice

German and English car mechatronics who belong to this third type of biographical occupation orientations could fondly be termed as ‘nerds’. Their occupational-biographical resources are love and passion for repairing cars, which have been developed and fostered in their childhood and throughout their teenage years.

I used to build models [...] I used to go around collecting bits of bicycles [...] until I had enough parts to make a bike [...] then I started buying old cars, taking them apart and selling them (KP 1.53-62).

What have been my interests? Actually it has always been cars [...] I have always been excited about cars (TS 1. 138-148; translation by Gericke).

When these German and English car mechatronics deal with their favourite object — the automobile — they use their passion and in-depth knowledge as their working tools. For them their passion and in-depth knowledge is a biologically determined personality trait:

They [young apprentices] haven’t got this natural thing that I grew up. It’s/ it’s inbreeding. It’s inbreeding in/ if you saw me in half I’ve got a mechanic frame right through me (KP 1.457f.).

When you pick a tool up you can tell by looking at someone pick a tool up whether they’ve got the natural aptitude to use that tool or/ or not (KP 1.459f.)

It’s in me (TS 1.998; translation by Gericke).

As they have been working on cars and other types of vehicles all their life, they have gained in-depth knowledge. It is their specialist knowledge which enables them to repair cars, where colleagues fail. “I have an in-depth-knowledge of how all the components work […] My in-depth-knowledge gives me the edge at the ones that come along that the machine can’t fix” (KP 1.804f. and 1.809f.). For them it is the combination of passion and in-depth knowledge which constitutes their working tool:

I’ve got it in here (((tips with his finger onto his head))) and here (((tips with his finger on his heart))) (KP 1.784f.)

I not only see the car as my occupation but it is also my hobby. I deal with it differently (TS 1.916f.; translation by Gericke).

The professional identity of these German and English car mechatronics consists of applying a holistic view to the car, providing quality work, being able to repair every
component of the car and treating the customer fairly. However, the core of their professional identity is passion and knowledge.

I have the habit of looking at the whole car [. . . ] Where other colleagues fail with the car, I look a bit further, I have an overall view of the car (TS 1.906–915).

I have quality standards. I want that when I do things or I do things for myself, then it is my goal to do a good job. So I can tell myself, I ask myself ‘Would you do it this way with your own car too?’ If I say ‘Yes, I would do it exactly like that’ then it’s okay (ME; translation by Gericke).

Values are yeah honesty and get the job right (KP l.605f).

They [young apprentices] haven’t got the heart or spirit to eh to be a good technician (KP l.426).

It shall not be left unmentioned that German and English car mechatronics with a passionate biographical occupation orientation choose or suffer from isolation at their workplace. Their very high quality standards make it difficult to have good working relationships with their colleagues:

I am, because I am very zealous and the others just do their job in order to get money. And these two attitudes clash against each other, that doesn’t always work out well. [. . . ] Later on, I didn’t care anymore. At one point you develop the attitude, ‘let them gossip’ (TS 927–931 and 971; translation by Gericke).

And the type of people that work in factories, they’re not professional people. When you are used to being around professional people all the time and all of a sudden you have to work in an environment full of idiots it was ehm didn’t like it at all really (KP l.302–305).

German and English car mechatronics of this third type of biographical occupation orientations are aware of the fast changing automotive technology. There are more and more electronic components. In contrast to the first type, they do not feel challenged by this technological advancement. They have the in-depth knowledge to deal with the modern technology.

The cars have become more and more technically advanced, electronically [. . . ] But because I have an in-depth knowledge of how all the components work, cars still work the same, they’ve just gone in a different way. And eh because of my background knowledge I know roughly where the problem is before I start (KP 1.803–807).

It is their specialist knowledge which makes them superior to the diagnostic machine:

Every now and then you get a job, which the diagnostic machine can’t work out and ehm unless you know how that works, how do you know how to diagnose it? That’s the problem, because the diagnostic machine is only a guide (KP 1.763–766).
In principle your tool/ your tool number one is your brain. Well, without your brain/ well, you have got the diagnostic machine, okay. But your brain is your main working tool (ME l.4278–480; translation by Gericke).

German and English car mechatronics of this third type of biographical occupation orientations speak of the need for learning. However, this need is not caused by the rapid development of automotive technology, but it is sparked by their inner need to keep up-to-date. They learn purely for themselves and do not have their current or future employer in mind.

It’s just the inner drive, really, to eh to constantly learn, to constantly update myself. And eh I always push as hard as I can to eh learn what I can [...] (KP l.814–816).

And why did you decide to do the master craftsman training? Well, actually because it is the only thing left where I can progress (TS l.1012–1015; translation by Gericke).

4.2 The Subjective Perception of the German and English VET System

I will now present the reconstructed subjective perception of the German and English VET system. In contrast to the biographical occupation orientations there is a national dividing line between the interviewed German and English car mechatronics. The subjective perception of the two different VET systems is homogeneous within the two groups. The focus will be on how the German and English car mechatronics had experienced their VET system and which consequences it had for their learning biography and lifelong learning attitude.

4.2.1 Subjective Perception of the German VET System

The interviewed German car mechatronics have passed through the dual vocational training. That means, they took part in theoretical lessons at the vocational school and had practical training in a company for 3.5 years. All German car mechatronics were satisfied with their dual vocational training, linking theory and practice: “[... ] the vocational training, the practical and the theoretical training were super” (TS l.149f.; translation by the author). They perceived their vocational teachers and trainers as well-informed and up-to-date: “The manual skills you had been taught by older colleagues who had been experts in their field” (DW l.149f.; translation by the author). They report of a pleasant learning atmosphere in school and company: “That was a nice thing. We all got on well with each other” (ThS l.174f.; translation by Gericke). Their general impression of the German VET system is one of having a clear structure with clearly defined ways of acquiring vocational qualifications and offering continuous vocational educational training. However, the interviewed German car mechatronics see that the strong VET structures are at the expense of flexibility.

The interviewed German car mechatronics are well-informed about available pathways of acquiring vocational qualifications and even continuous vocational education
and training. German car mechatronics who belong to the first type of biographical occupation orientations—strategic use of qualification offers—have a profound knowledge and make extensive usage of the available institutions of vocational education and training as well as continuous vocational education and training. They return to institutions of continuous vocational education and training in order to keep updated and capable of action when technological challenges arise. For them lifelong learning is their strategy for dealing with technological challenges. German car mechatronics who follow the second type of biographical occupation orientations—defining limits of one’s own scope of duties and expertise—acquire a basic vocational qualification and have no further aspiration for continuous vocational education and training. They feel that their basic vocational qualification is sufficient. Lifelong learning in a formal context is rejected. They learn in informal settings like talking to colleagues. German car mechatronics of the third type of biographical occupation orientations—passionate professional practice—return to institutions of continuous vocational education and training in order to quench their thirst for knowledge and strengthening their expert status.

4.2.2 Subjective Perception of the English VET System

The interviewed English car mechatronics have passed through a variety of vocational education and training programmes; starting with a 4.5 year-long City Guilds apprenticeship to a three-week in-house-course on single car components.

[...] two training courses with my very first job [...] one was on suspension work and one eh was on eh car braking systems [...] I did two training courses with them in the year I was with them [...] but they did in-house training [...] the guy who gave me the job taught me to fit tyres. So, it was like ‘This is how you do it (') (–) This is how it’s done’ [...] (JM l.330–337 and l.751–754).

The companies which provided training have been changed by all of the interviewed English car mechatronics. All of them reported that they were treated as employees first and were hardly taught anything. Trainers at the company lacked any pedagogical suitability and the working environment was perceived as very challenging. They perceived their vocational teachers as educators with outdated knowledge. Furthermore, the practise models at the vocational school were outdated too.

[...] everybody used to wash their (–) hands in a bucket of water [...] their conditions were even worse [...] the heating (') which was virtually eh non-existing in the/ in the winter [...] (AW l.374f. and l.492–494).
Now (–) it wasn’t a particularly good way of being taught, because you don’t have as much time [...] the teacher starts to go through everything. Ehm it was a very short day ehm by the time you actually got to the theory side of things. And you’re also mixed with other people who didn’t do it as a job and done it as a other sort of qualification [...] and they weren’t really showing a lot of interest (AH l.856–73).
Their general impression of the English VET system is one of diffuse structures, low quality standards at the vocational schools and in general a weak position of apprentices in companies. However, the interviewed English car mechatronics see one strong point in their VET system, which is its flexible structure. Changing companies that provide training or even discontinuing an apprenticeship and starting a new one in a completely new industry is uncomplicated.

The interviewed English car mechatronics have experienced their VET system as a challenge in respect to deciding a suitable pathway and dealing with difficult training conditions but value its flexibility. English car mechatronics who belong to the first type of biographical occupation orientations—strategic use of qualification offers—have undergone an intense and long searching process in finding their right path and available structures for vocational education and training as well as continuous vocational education and training. They return to institutions of continuous VET in order to keep up-to-date and capable of dealing with technological challenges but also as a strategy to overcome their rather hard school career and fulfill their personal desire of educational and career aspirations. English car mechatronics who follow the second type of biographical occupation orientations—defining limits of one’s own scope of duties and expertise—have either no or low vocational qualifications. They value their practical knowledge more than any formal knowledge they have ever acquired. English car mechatronics of the third type of biographical occupation orientations—passionate professional practice—return to institutions of continuous vocational education and training in order to quench their thirst for knowledge and increasing their expert knowledge. Although these car mechatronics had a very clear idea of their professional career they also suffered from a disorientation of available VET programmes and opportunities.

5 Analysis

The entirety of the findings gives three insights about the interplay of biographical occupation orientations, the subjective perception of the national VET system and the decision for returning to (continuous) vocational education and training:

- The different working tools—as one facet of biographical occupation orientations—the interviewed car mechatronics use, explain the different views on the necessity of returning to (continuous) vocational education and training.
- The subjective perception of the national VET system fosters certain occupational-biographic challenges and thus supports or hinders existing learning attitudes.
- It is the biographical occupation orientations which have the main influence on the learning biography and the decision of returning to (continuous) vocational education and training.
I will now describe these three insights in detail. I will start with presenting the interplay between working tool and dealing with technological challenges.

The first type—strategic use of qualification offers—draws upon his biographical resource 'ascent and education orientation'. He has developed this resource throughout his life and in interaction with family members and peer-group. As a consequence his working tools in his occupation are lifelong learning and getting vocational qualifications. With these working tools in mind he defines his professionalism through good quality work, a holistic approach to the car, i.e. being able to repair every component of the car, and good customer work. The continuously changing automotive technology is a challenge which he tries to master by using formal settings of learning and gaining more knowledge which represent his working tools again. This cycle is illustrated by the figure below:

![Biographical Occupation Orientation Cycle for Type 1](image-url)

**Figure 2:** Biographical occupation orientation cycle for type 1—strategic use of qualitative offers

The second type—defining limits of one’s own scope of duties and expertise—has developed the biographical resource 'networking and defining personal work area'. This resource came into being especially in interaction with VET gatekeeper (access to VET) and colleagues (access to jobs and knowledge). The working tool car mechatronics of this type use is their experience, which has been acquired in formal and (mainly) informal contexts. They see their professionalism in handling customers well, good quality work for the selected components of the car and being able to define precisely their scope of
expertise and work. The rapidly and continuously changing automotive technology does not affect them as these changes are outside their scope and work area. Thus they acquire needed knowledge informally by talking to colleagues and by trial-and-error, which is the basis for their working tool experience. This cycle is illustrated by the figure below:

Figure 3: biographical occupation orientation cycle for type 2—defining limits for one’s own scope of duties and expertise

The third type—passionate professional practice—has as his biographical resource his passion and love for working on cars at his disposal. His passion and specialist knowledge are his working tools. Excellent quality work, a holistic view of the car, i.e. being able to repair every component, and good customer interaction constitute his professionalism. The rapidly changing automotive technology is not a challenge but a welcome change and opportunity to demonstrate his expert knowledge and fuelling his passion. He uses available formal settings of learning in order to strengthen his expert knowledge and act out his passion. This cycle is illustrated by figure 4.

I will now outline how the car mechatronics’ subjective perceptions of the German and English VET system foster their occupational-biographic challenges and thus support or hinder their existing learning attitudes.

The German car mechatronics report of a clearly structured German VET system with clearly defined pathways and know of available programmes for continuous vocational education and training. As vocational qualification is kind of a currency on the German labour market (Sackmann and Weymann, 1994) and the only access possibility for qual-
ified work, all interviewed German car mechatronics have successfully passed through their dual training. Those with a (formal) lifelong learning attitude (i.e. type one and three) use the available institutions of continuous VET. The clearly structured VET and CVET system helps them to find appropriate VET programmes. Thus the German VET system is perceived as supportive in respect to pursuing formal learning opportunities. However, the interviewed German car mechatronics miss flexibility within the VET structure. The rigid structure sanctions a change of educational pathways and/or discontinuing apprenticeships and starting a new one (Bindl, Schroeder and Thielen, 2011). In many cases German employees need to fund their new VET pathway by themselves. Consequently, many employees who would like to enter new VET pathways will stay in their occupation due to financial circumstances. This structural hindrance might impede their learning attitude.

The English car mechatronics report of a confusing English VET system. Its structure is fragmented to a degree that the interviewed English car mechatronics feel overwhelmed when they try to orientate themselves and choose an appropriate pathway. They undergo a long searching process in order to find a suitable VET programme. Their occupational-biographic challenge is to find their way through their VET system. Employees with a strong lifelong learning attitude have to invest considerable time to get an overview of available CVET options. Here the English system can be perceived as hindering...
the realisation of an active lifelong learning attitude. However, the English VET system is also seen as a flexible one. It allows individuals to experiment with different VET programmes—without financial sanctions. The English labour market is accessible through learning-on-the-job and thus open for individuals with no or low formal vocational qualifications. This explains why some English car mechatronics of the second type, i.e. defining limits of one’s own duties and scope, value practical knowledge more than knowledge gained in formal learning settings. The following table gives an overview on the occupational-biographic challenges provoked by the national VET system and the influence the system has on learning attitudes out of the subjective perspective of the interviewed German and English car mechatronics:

Table 1: Overview on the national VET systems’ influence

<table>
<thead>
<tr>
<th>German VET System</th>
<th>Occupational-biographic challenge</th>
<th>Influence on learning attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>dealing with inflexibility</td>
<td>– supportive, if the learner stays in the once chosen educational pathway</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– obstructive, if a career change is aspired</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>English VET System</th>
<th>Occupational-biographic challenge</th>
<th>Influence on learning attitude</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>resolving disorientation</td>
<td>– obstructive, if the learner does not find his way through VET jungle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– supportive, if the learner wants to experiment with diverse programmes</td>
</tr>
</tbody>
</table>

The previous sections showed that the national VET system hinders or supports a lifelong learning attitude. Clear structures make it easy to get an overview of available options and to choose a suitable programme. A VET system with diffuse structures requires a stronger involvement and motivation of the individual in order to find a suitable course. However, the previous sections also show that it is the biographical occupation orientations which have the main influence on the learning biography and the decision of returning to (continuous) vocational education and training. The cycle of: biographical resource — working tool — professionalism — perception of new automotive technology — strategy is not disturbed by structural conditions. It is the biographical occupation orientations which are the driving force in deciding for or against the return to (C)VET.
6 Outlook

The concept of biographical occupation orientations has proven to be valuable when looking at educational decision-making from a subject-oriented perspective. However, it is important to acknowledge here, that the findings have a purely explorative character and that a far bigger sample is needed. Due to the small sample size I cannot make a statement on the national VET system’s influence on the relative number of people belonging to the three types of biographical occupation orientations. However, my hypothesis is the German VET system supports the development of the first type, namely strategic use of qualification offers, as there are many CVET opportunities at the German car mechatronics’ disposal, whereas the English VET system fosters the development of the second type, namely defining limits of one’s own scope of duties and expertise, due to the fragmented VET structure. At any rate, the findings refute the in the introduction mentioned German argument that adjusting the German VET system to a stronger competence-oriented (‘English-like’) VET system will impede the development of a holistic professional identity (Drexel, 2008; Kuda and Strauß, 2006), which is a central goal in the German VET system. The findings show that the structures of the English and German VET systems do have an either obstructive or supportive role when developing certain biographical occupation orientations, but the VET system does not per se hinder the development of a holistic personal identity. Simultaneously, the national VET system does indeed hinder the development of a holistic personal identity to a greater or lesser extent depending on the power the subject gives to his/her structural circumstances and the available biographical resources. Thus this paper demonstrates that analyses from a subject-oriented perspective is a worthwhile endeavour and enlightens even macrosocial levels such as VET policies.
References


Biographical Note

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Decision-Making Rationales among Quebec VET Student Aged 25 and Older

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Abstract: Each year, a large number of students aged 25 years and over take part in vocational and education training (VET) programs in the Province of Quebec, Canada. The life experiences of many of these adults are marked by complex psychosocial and professional events, which may have influenced their career decision-making processes. This paper aimed to identify key rationales guiding the decisions of adults aged 25 years and older to return to education based on a thematic analysis of 30 semi-structured interviews with students enrolled in a VET program. The analysis focused on two theoretical axes: one biographical and the other interactionist. The first involved personal life courses and professional projects undertaken by the student in the past. The second examined tensions and conflicts between context forces and adjustment strategies adopted by the student. The results revealed five decision-making rationales that characterized the vast majority of the students’ experiences: 1) get out of a socioprofessional and economic slump; 2) know yourself better, personally and socially; 3) value the concrete and the practical; 4) take advantage of supporting conditions; and 5) reconcile proximity and the known. The relevance and implications of these findings for professionals and decision makers in vocational training are discussed.

Keywords: VET, Vocational Education and Training, Vocational Training, Adults, Decision-Making, Qualitative, Life-Course

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1 Introduction

Vocational Education and Training (VET) is an educational system that favours professional qualification and access to employment for the greatest number of people (Fournier, Lachance, & Bujold, 2009; Organisation for Economic Co-operation and Development, 2010). From one country to another, vocational education and training models may vary considerably. International distinctions observed (Bosch & Charrest, 2008; Brockmann, Clarke, & Winch, 2008) suggest a preference for continuous alternation between formal education and that of the workplace for countries such as Germany, Austria, Switzerland, Denmark or Norway, while for other countries including Canada, the United States, England or France, a sequential approach between school and employment is prioritized. In Canada, VET is offered to secondary and college levels in the form of vocational and technical training programs lasting from one to four years. Quebec, one of Canada’s provinces whose population is mainly French-speaking, offers over 200 programs leading to a diploma of vocational studies (DVS). These programs are of a duration of 600 to 1800 hours, accessible from the ninth, tenth or eleventh year of education (Ministère de l’éducation, du loisir et du sport du Québec, 2010; Mougat, Deschenaux, & LeBlanc, 2011). Quebec’s VET programs attract 142,000 students (Ministère de l’éducation, de l’enseignement et de la recherche du Québec, 2015), three-quarters of whom are age 20 and over (MEERQ, 2015), half over 25 and a third over 30 (MELS, 2007; 2010). In comparison, 85% of students enrolled in advanced studies in a college technical program are younger than 25 (MELS, 2010). Women (46%) are almost as numerous as men (54%) (MELS, 2010). Five objectives guide VET educative services in Quebec: 1) increasing an individual’s autonomy, 2) facilitating social and professional integration, 3) promoting access to and retention in the labour market, 4) contributing to the economic, social and cultural development of one’s environment and (5) acquiring an accredited diploma (Government of Quebec, 2017).

VET is not often the first choice of education at the end of secondary school, but in the long run, one third of a generation obtains a VET diploma. It has long had an aura of unfavourable prejudice (Lehmann, Taylor, & Wright, 2014; MELS/Réseau des commissions scolaires, 2007). The social discourse advanced by various parties concerning youth (close and extended family, media and general public, even some teachers and educational professionals), conveys the idea that VET does not seem as interesting as higher education in their eyes (Conseil supérieur de l’Éducation, 2012; Cournoyer & Lachance, 2014; Krahm & Taylor, 2005; MELS, 2007). Over the past 20 years, most Quebec public education policies (MEQ, 1997, 2002; MELS, 2009; MEERQ, 2017) have proposed or endorsed intense efforts to promote vocational education and training among young people under age 20, though the student body is increasingly composed of older adults (Hart, 2017). Although college and university studies remain appealing to a large proportion of adults in training of all ages, it seems surprising that such a large number of young people over age 25 are enrolled in vocational education and training. By examining typical educational paths, you might expect that the vast majority of students have completed their studies by age 25. Indeed, graduation from secondary school occurs around age 17. Pre-university college studies take two years and undergraduate programs are expected
to take three or four full-time years to complete, leading to a bachelor's degree around age 22. Therefore, at age 25, a student following a linear path without interruption may reasonably expect to have a master's degree. According to Goyer (2017), the repeated failures of Quebec educational policies result from a failure to take into account that the current average age of students in vocational education and training is 27 years old. These students’ life paths and professional experiences are varied and atypical, compared to those of general education students. Apart from the presence of a pedagogical regime in place since 1988 within the Education Act (Government of Quebec, 1988), there is no real national policy to promote vocational education and training for all groups of populations in Quebec.

Vocational education and training students have highly heterogeneous profiles, ranging from general to secondary education graduates to social benefit or employment insurance recipients, whose training was funded by governmental services. These adults—workers or people in career transition, mothers of single-parent families, or newcomers who want to improve their living conditions—find themselves more or less obligated to reorient themselves (Deschenaux & Roussel, 2010). More than any other educational level, a significant number of students have experienced and sometimes still experience academic, social, professional, familial, psychological or other difficulties (Lehman, Taylor, & Wright, 2014; Vonthron, Lagabrielle, & Pouchard, 2007). As people advance into adulthood, it can become harder to go back to school for a variety of reasons, including doubts about one’s academic abilities, fears of reviving painful memories, difficulties reconciling work-family-study conflicts, problems with finance planning, registration procedures and documents, insufficient institutional psychological support, and negative perceptions of school (d’Ortun, 2009; Goyer, Landry, & Leclerc, 2008).

Lifelong vocational guidance and training are linked to an ongoing process of identity building, socialization and socioprofessional integration (Aubret & Demouge, 2007). Adults over age 25 are more likely to deal with more complex psychosocial realities in career decision-making because of the plurality of events and contexts that make up their life paths (Boutinet, 2004; Patton & McMahon, 2006; Peavy, 1997; Savickas et al., 2009). Since Quebec VET programs have attracted more adult students in recent decades, it is important to understand the logic guiding their career decision to return to school in VET.

2 Conceptual Framework

Making a career decision is a complex process that varies among individuals, involving cognitive, emotional, behavioural, relational and contextual issues (Hodkinson & Sparkes, 1997; Lent, Brown, & Hackett, 1994; Patton & McMahon, 2006; Peterson, Sampson, Reardon, & Lenz, 2002; Saka & Gati, 2007). In addition, these decisions imply a share of historicity and self-projection, as well as a quest for freedom from constraints and contextual barriers (Berthoz, 2013). Over the past few decades, some researchers (Lent, Brown, & Hackett, 1994; Patton & McMahon, 2006; Peterson, Sampson, Lenz, & Reardon, 2002; Saka & Gati, 2007) have taken an interest in better understanding the
optimization of the fit between a person’s individual characteristics and that of their living environment in the context of career decision-making. In this regard, career decisions are based on representations of self (interests, values, aptitudes, personality traits) and the world (study programs, professions, job market), goals, obstacles and timeframes, ways of gathering and processing information (Beaucher & Mazalon, 2003), relationships to others, institutions and other social structures (Blesson, 2001; Boutinet, 2005; Doray, Bélanger, & Mason, 2005), as well as professional projects superimposed on each other (Lhotellier, 2003; Valach, Young, & Michel, 2003). For more experienced workers, needs for security and stability, especially attached to job insecurity or socioeconomic exclusion (Bujold & Fournier, 2008), can sometimes impose themselves and weigh more heavily on individual actions than the actualization of interests and personal resources (Cournoyer, Fortier, & Deschenaux, 2017).

Research led by Gati, Krausz and Osipow (1996) and by Gati, Landman, Davidovitch, Asulin-Peretz and Gadassi (2010) on career decision-making processes suggests paying attention to levels of preparedness (motivation, indecision, dysfunctional beliefs), information (on self, occupations, the process, information gathering), representations (internal or external conflicts, unreliable information) and sociorelational influences. Some researchers advance the notion of non-linear paths within which career decisions are constructed and operate (Patton & McMahon, 2006; Peterson, Krumboltz, & Garmon, 2005; Savickas et al., 2009; Bessin, Bidart, & Grossetti, 2010) and of the influence of sociorelational contexts (Peavy, 1997; Vondracek & Reitzle, 1998).

In this study, analysis of the rationales guiding Quebec adults age 25 and over committed to continuing education in VET is based on the decision-making model inspired by the works of Cournoyer, Lachance and Samson (2016) and by Cournoyer, Fortier and Deschenaux (2017). This modeling proposes an analysis of career decision-making from two interdependent perspectives, one of a biographical nature—between life path and professional project (Bertaux, 2005; Boutinet, 2005; Niewiadomski & Delory-Momberger, 2013; Shanahan, 2000), and the other of a human agency nature—between contextual forces and adjustment strategies (Elder, 1998; Lahire, 2001).

The biographical perspective rests on the continuous tension between life path and professional project. As Elder points out (1998), life paths are shaped by the historical times and places encountered, emerging conjunctures, interrelated individual lives and by the unique agency of each person, i.e. actions taken in relation to a singular universe of possibilities. All the events, transitions and encounters experienced, as well as the times and places where they occur, contribute to the configuration of a universe of possibilities and limitations specific to each person (Charbonneau, 2005; De Coninck & Godard, 1991; Shanahan, 2000). In addition to dealing with the resources and barriers—real or perceived—on their path, what characterizes every human being is their ability to project themselves into the future based on knowledge acquired from the past to the present, to give meaning and a future representation to their existence (Bart & Fournet, 2010; Boutinet, 2005).

The interactionist perspective is based on the continuous tension between contextual forces and adjustment strategies with regard to the evolution of life paths and professional projects that shape them and are shaped by them. Many contextual forces bearing
positively or negatively on a person are inaccessible to the conscience (Bourdieu, 1994; Hodkinson & Sparkes, 1997; Lahire, 2001). They are the product of standards, values, guidelines, ideologies, instructions, injunctions, structures, etc. that condition individual action (Cacouault & Oeurvrad, 2001; Dumora, Aisenon, Aisenson, Cohen-Scali, & Pouyaud, 2008). A person’s social networks are also part of these contextual forces (Bourdon, Charbonneau, Cournoyer, & Lapostolle, 2011; Bidart, Lavenu, & Pélissier, 2005; Degenne & Lebeaux, 2004), of relational, institutional and social systems (Bronfenbrenner, 1977, 1986; Deschenaux & Laffamme, 2009; Bourdieu, 1980) and they operate especially through groups to which one belongs (Coslin, 2002; Grote & Hall, 2013). Within social structures and networks, various forms of support (information, counseling, encouragement, feedback, etc.) also put pressure—positively and negatively—on decision-making conduct, particularly career decision-making (Burt, 2000; Cournoyer, 2012; Giordano, 2003; Granovetter, 1973).

As for adjustment strategies, they consist of actions employed in order to integrate contextual forces with individual approaches, projects or designs throughout the course of one’s life. In a career decision-making context, adjustment strategies may consist of information gathering and processing about oneself in interaction with the world, search for support, counsel and opinions, attitudes and behaviours implemented to adapt to somewhat stressful or anxiety-producing situations, etc. (Dupuy, 1998; Lent, Brown, & Hackett, 2000; Savickas, 1999). Over the course of one’s life and with regard to the quest for personal projects, various forms of beliefs, behaviours, attitudes, values, interests, skills, standards, learning, etc. are internalized and categorized as a result of adjustment strategies specifically tailored to equally specific contexts (Krumboltz, 2011; Lahire, 2001; Lent, Brown, & Hackett, 2000; Savickas, 1999).

Various research was conducted in recent years with students enrolled in vocational education and training study programs in Quebec (MELS, 2007; Molgat, Deschenaux, & LeBlanc, 2011; Rousseau, Théberge, Bergevin, Tétrault, Samson, Dumont, & Myre-Bisaillon, 2010; Savoie-Zacjc, Dolbec, Desjardins, & Zniber, 2007). Most of the research focused on identifying the motivational factors for such an undertaking. However, few of the studies truly sought to identify the reason, rationale and reflection—in short, the underlying logic that elucidates a set of factors, criteria and motivations guiding the decision to pursue a vocational education and training program in Quebec, specifically from age 25 on. In this paper, we propose identifying the decisional logic underlying decision-making, resulting from biographical and interactionist tensions, of a majority of these individuals.

3 Method

The data analyzed stemmed from a research project aimed at enumerating and presenting the types of paths of young people enrolled in VET in secondary school in Quebec and in Ontario (Canada), as well as how the paths are constructed, in addition to identifying and describing the various forms of support, the perception of the youth enrolled in VET and how they integrate the support into their life paths. This data was collected
during the winter of 2012 from students enrolled in a VET program for at least three months. Questions from a 90-minute semi-structured biographical interview focused on the academic, professional, relational/matrimonial and residential dimensions of the path, as well as the perceptions and integration of support received on their life path, representations of the geographic and socioeconomic context, and their perspectives for the future.

Participants were selected on the basis of three criteria (site, gender and age), providing a non-probabilistic sample with a reasoned choice of an objective (Pirès, 1997). The sample includes 80 students enrolled in a vocational studies program in one of four training centers that participated in the study. More specifically for this article, we selected 30 participants age 25 and over. There were 18 women and 12 men enrolled in a wide variety of programs.

The research interviews were subsequently transcribed and then codified by research assistants to divide the data set into sections from the interview guide. Regarding this paper’s objective, sections relative to the decision-making process of the young adults met with were selected for analysis (choice of VET program, relation to the school, academic aspirations and projects, professional aspirations and projects, relation to work). A thematic analysis (Paille & Mucchielli, 2012) was applied to the data set in a moderate inductive logic (Savoie-Zajc, 2004), conducted using QSR Nvivo 10 software. The data was organized according to theme by the two researchers and authors of this paper, first individually, then collaboratively. Next, an open analysis grid developed from the identified themes and allowing the emergence of new themes, as well as testing the predefined framework, made it possible to address the data. Various decision-making rationales, non-exclusive, were also identified, which had to be present in almost all of the participants in order to be selected.

The excerpts presented to support the themes described were reported in French, then translated into English for purposes of this paper. The participants linked to the selected excerpts are identified by their age, sex, and professional field.

4 Findings

The analysis of data identified five decision-making rationales: 1) Get out of a socioprofessional and economic slump; 2) Know yourself better, personally and socially; 3) Value the concrete and the practical; 4) Take advantage of supporting conditions; and 5) Reconcile proximity and the known. Table 1 indicate the number of participants who reported reflections and thoughts about on each decision-making rationales on two or more occasions.

4.1 Get out of a Socioprofessional and Economic Slump (n=26)

A first decision-making rationale shared by the vast majority of participants relates to a life path (personal, academic, professional, familial, relational) marked by difficulties and trials from which they more or less desperately seek to escape by pursuing studies. This rationale manifests itself in the outlines of a project not yet necessarily fully formed
Table 1: Number of participants reporting reflections and thoughts about each decision-making rationales

<table>
<thead>
<tr>
<th>Decision-making rationales</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get out of a socioprofessional and economic slump</td>
<td>26</td>
</tr>
<tr>
<td>Know yourself better, personally and socially</td>
<td>28</td>
</tr>
<tr>
<td>Value the concrete and the practical</td>
<td>20</td>
</tr>
<tr>
<td>Take advantage of supporting conditions</td>
<td>28</td>
</tr>
<tr>
<td>Reconcile proximity and the known</td>
<td>28</td>
</tr>
</tbody>
</table>

or in adjustment strategies to difficult living contexts. Many participants recount their parents’ low level of education, as well as their parents’ often negative attitude toward school: “It wasn’t really valued there […]”, I never had a discussion like: “What do you plan to do after school?”” (Women, 32, Computer graphics). “[…] Of course you can’t do homework with your child when you yourself can’t read or write. Because my mom, she doesn’t know how to read or write.” (Men, 33, Building mechanics). In other cases, the parents’ educational level is not fully known, which implies a limited history of discussion about education: “He (father) wanted to work as soon as possible […], that’s why he didn’t finish school […] My mom, I don’t know if she finished secondary school […] We’re not, how can I put it, we’re not big on higher education.” (Women, 26, Electricity). It should be noted that more than half of the participants have experiences marked by academic and psychosocial difficulties: dropping out, changing schools, behavioural and learning problems, drugs and poverty.

At the end of school there is a professional transition full of difficulties, frustrations and dissatisfactions: social benefits, depressive episodes, layoffs, poverty and social exclusion, difficulties meeting financial responsibilities, inability to pay for goods and services, atypical work conditions and schedules, etc. The decision and the commitment to pursue the path of VET studies are often preceded by a moment of general observation on the emptiness of their existence: “I wasn’t on the right track, I had kind of a crooked track,” (Women, 31, Computer graphics). “I’m tired of those places. I wanted something quieter, and I have an artistic side that I wanted to develop,” (Women, 25, Aesthetics). Some of the participants may be an exception to these negative experiences: “I was encouraged to go to school but never had anyone to tell me that ‘you don’t have a choice, you’re going to go,’ and I think it’s fine like that. I’m proud of my path anyway,” (Women, 27, Secretarial studies).

Note that some of the programs mentioned in the results are only offered in French and therefore we propose a literal translation of the name.
4.2 Know Yourself Better, Personally and Socially (n=28)

This second rationale, which largely results from the storyline of one’s life path up to now, is based on a motivated statement of personal commitment to see yourself as stronger and more solid, but also—sometimes above all—in relation to the needs and expectations of employers and the job market. In a way, it is an opportunity to envision yourself differently, using adjustment strategies to increase your power with regard to oppressive contexts, a willingness to modify the trajectory of your path. Analysis of the interviews suggests a shared need to increase self esteem by obtaining a diploma to access the job market: “To have my diploma in hand, be proud of myself […] then to find myself in a place where I’ll feel good. I’m going to do what I like, then people will respect me,” (Women, 31, Computer graphics); “I’ve come to realize that basically, you do your job your whole life […] when you do something you like it makes all the difference, and it’s reflected in everything.” (Women, 34, Pastry making); “Developing different visions, trying to find jobs […] and job security, for your family and for yourself.” (Men, 33, Building mechanics).

In participants’ comments there are often personal injunctions, i.e. an obligation to act, to get moving, to be worthy in one’s own eyes. This is signaled by the words “have to” or “should,” as motivation based on a sense of duty to oneself: “Maybe I should do something […] It’s time that I really do something now!” (Men, 27, Computing support); “I told myself that if I want to go farther than that in life … I don’t have a choice, I have to go back to school […] It has to be something that I’m passionate about,” (Women, 34, Pastry making); “I have to take care of my professional life, because I can’t depend on anyone,” (Women, 39, Carpentry). For others, this sense of duty toward self is directed toward their children, the importance of being proud of oneself in another’s eyes: “I wanted to get it, so I could tell my daughter that even during severe trials when things go wrong, if I had given up … I’m talking about it and it still affects me […]. In my case, I did it for my daughter,” (Women, 39, Carpentry).

Nearly all of the participants look at continuing education in VET as a place to develop interests and skills related to their values, but also as a step in a project, a fairly well-defined plan for professional life: “I’d really like to open my own business, I have an image in my head […] it’s certain that with the classes […] a sort of little coffee and pastry shop,” (Women, 34, Pastry making); “Later, I intend to take the assistant nurse course […], to give myself some drive,” (Women, 25, Aesthetics). Finally, harmonizing the present in school with a satisfying work transition is often inscribed on a path of interests, habits or hobbies from childhood to adolescence: “I play games a lot, I like building houses, why wouldn’t I come to take the classes?” (Men, 25, Residential and commercial drafting); “I already know it, I already learned by myself […] I came here more to improve myself,” (Women, 32, Computer graphics).

4.3 Value the Concrete and the Practical (n=20)

This third rationale concerns the desire to identify a training project that can best be adapted to their learner characteristics, and to learning conditions and contexts to help
them achieve a school-to-work transition and integration more quickly. Many of these students seem to have common characteristics in terms of valuing concrete and practical learning activities. They clearly affirm favouring an active and varied learning context: “I don’t like monotonous, routine jobs [...] you know, you can do a little bit of anything, you never do the same work all the time [...] an active girl [...] who needs to move [...] to keep me awake [...]” (Women, 26, Electricity). Add to that the search for different types of tasks, but with a specific purpose: “I need something more concrete, more stable, that’ll help me reach my goals,” (Women, 26, Electricity).

The participants are also interested in—even anxious about—their VET classes leading to a rapid job integration, with advantageous conditions and prospects: “I chose electricity simply because they said that it pays a lot of money and that there weren’t going to be enough electricians, that there’d be a lot of work in the field,” (Women, 27, Electricity). There are some participants who have doubts or reservations about expected conditions and prospects: “Often they’ll hire somebody who has a DVS because they can pay them less—like it or not—because it’s not as much schooling,” (Women, 30, Computer graphics).

One of the most important subthemes from the analysis of interviews concerns the choice of VET, through a process of comparison to the opportunity of higher education at college or university. It is the form of VET studies that is often favoured over that of higher education. To begin with, one seeks a shorter period of studies: “I’m going for a DVS that’s going to be less long, but still with good opportunities,” (Women, 27, Electricity); “I respect people who go to college (CEGEP) then university [...] for me, it’s easier to get a DVS,” (Women, 31, Computer graphics). It is also a question of classes more directly related to the trade activities in vocational education and training, without the addition of mandatory classes in a higher education program: “I did a session at college in multimedia, but philosophy and literature weren’t for me at all,” (Women, 31, Computer graphics); “I didn’t want to go to college because there were too many classes that didn’t interest me like philosophy and that other stuff. I really wanted to concentrate on a trade when I got out of school, to have my trade and then get in the job market,” (Men, 26, Retail butchery); “You don’t need, like at college, to take 55 more classes to get what you want!” (Men, 27, Computing support). Nevertheless, for some participants, the choice of a program specifically offered in VET is strictly based on a preference for content and not form: “A college diploma in computer science didn’t interest me [...] Computer graphics is a little bit of graphics and a little bit of computing—it was like the best of both worlds,” (Women, 30, Computer graphics).

Finally, there are some students for whom VET was the only educational destination realistically considered: “Since I was little, my mom knew it, my whole family knew it, then during all of secondary I told myself: ‘No, college isn’t for me, it’s going to be vocational, it’s going to be bing bang boom and done with,’” (Women, 28, Carpentry); “I would have liked [to go to college], because when I was little, I wanted to be a social worker, I would like to be a foster family. But then it was like going back to school to do my secondary before going to college. No [...] No, it was out of the question,” (Women, 39, Carpentry). Few of the participant’s view VET negatively or, in the same vein, devalue their own ability to learn: “In any case, I’m not enough of a nerd to enroll
in university. So I was okay with vocational education and training,” (Women, 25, Secretarial studies).

4.4 Take Advantage of Supporting Conditions (n=28)

This fourth rationale concerns the role of relationships and of social and institutional structures that act as contextual forces that facilitate or impede the pursuit of a professional project. Participants are not only “influenced” by social structures and relationships, they may also be the source of change through their own initiatives in relation to them: “I found out about the best places, basically the best schools that gave the program and it was really in Abitibi-Témiscamingue that it was rated best. [...] Given the fact that I’m from the region, it’s sure that that attracted me even more,” (Women, 26, Electricity); “When I heard about the course here, I said to myself, hey, I’ll try to go here. So I enrolled here,” (Men, 27, Computing support). In addition, there are personal, familial, financial and other issues related to their project: “When I was accepted, I jumped at the opportunity [...] I wanted to pay for my things as fast as possible. I didn’t want to wait another year,” (Men, 25, Residential and commercial drafting); “I had another car, that I sold to have a smaller model to be able, you know, to have some money [...] to buy all my material,” (Women, 34, Aesthetics); “We were fed up [...] I left my job then I really wanted to concentrate on my studies [...] Getting up at 5 in the morning and starting to study an hour before the kid wakes up around 6 o’clock [...] Not always easy,” (Men, 28, Electricity).

The success of a return-to-school project in VET for Quebec adults age 25 and over is based on the ability to mobilize and to take advantage of the support of significant people around them. This may be instrumental support provided by people more or less close to the students offering direct assistance, information and advice. The support could be information from people who have already completed the study program or gone to the training institution concerned: “A friend who did it, beauty care,” (Women, 25, Aesthetics); “Someone who talked to me about Skills Outaouais because she took a program there. I checked it out [...] I read the requirements, the details and everything, and I was interested,” (Men, 33, Building mechanics). The contribution of such information can transform lives when provided at the right time: “In secondary school, if I had known that there was a DVS in pastry-making [...] That would have changed my life, I would probably have come to do the program,” (Women, 34, Pastry making).

The vast majority consulted a career counselor in a community or government organization specialized in job development before formally committing to pursuing studies in VET. For some, it was a matter of getting help before making an informed decision: “I went to see a counselor, then with his help [...] we found that computer graphics would fit well with my personality [...] explaining to me what was really taught [...] I was able to make a more informed decision,” (Women, 30, Computer graphics); “We did aptitude tests [...] we looked at trying out being a student for a day, we looked at Emploi-Quebec, we did the whole file [...] it was really amazing,” (Women, 34, Pastry making). This counseling experience at this time of their life often contradicts that experienced with another such professional during secondary school a few years before:
“I was told by a counselor that I would never do anything in life because I didn’t have
good grades and that I would never succeed in life, that I was a loser,” (Women, 34,
Pastry making).

In addition to instrumental support, the vast majority of participants attest to emo-
tional support received from loved ones, encouragement and support in their activities:
“No matter what I did in life, you know, they always supported me in what I did, and
they never opposed me either, in my decisions, in my choices,” (Women, 34, Aesthetics);
“We went to see the doctor together and then basically after that we took some steps.
From that point on I pulled myself together more and was able to go back to school,”
(Women, 30, Computer graphics). Material support affects the emotional sphere more,
particularly the importance of qualifying professionally to be able to meet the social ex-
pectations of adult life: “For my mom, it was important that I have at least a secondary
school diploma. She really encouraged me in that,” (Women, 31, Computer graphics);
“My mom who told me, ‘As long as you haven’t finished your secondary 5, don’t think
about anything else,’” (Men, 28, Electricity); “I have a deal with my mom [...] if I
finish my program and find a job, after six months of working, she’ll co-sign on a house
for me,” (Men, 25, Residential and commercial drafting). As for the father’s role, it is
often the same as the mother’s, or perhaps more subdued. “My dad was glad too that
I went back to school,” (Men, 27, Computing support).

The support of spouses is essential. In some cases, the professional project of one is
part of that of the other and in a broad sense falls within the couple’s project: “My
partner, he encourages me a lot, practically every day. When I’m kind of down, less
positive, he’s there to push me,” (Women, 31, Computer graphics); “She encouraged
me all the same [...] She went back to school, to Skills Outaouais in pharmaceutical
studies, and now it’s been seven years that’s she’s worked here in the region,” (Men,
33, Building mechanics); “My ex criticized me: ‘If you’re not happy, why don’t you
change?’ [...] That also pushed me to go back to school and change fields,” (Men, 26,
Retail butchery).

One the other end of the spectrum, there are behaviours that undermine the desire to
pursue studies in VET: “For sure my parents were disappointed [...] I’m doing computer
graphics even if it’s maybe a lower level than college but ...,” (Women, 30, Computer
graphics); “My mom would really have liked me to continue school. [...] I know that
my mom was really disappointed,” (Women, 39, Carpentry); “I have an aunt who said
that this here is not a real school. [...] According to her, if it’s not university, it’s not a
real school. [...] My father is disappointed in me I think, because I’m not doing what
he’s doing,” (Men, 25, Residential and commercial drafting).

Combining both instrumental and emotional aspects, modeling is another form of
support present in some participants in the process leading to the decision to pursue
studies in vocational education and training. Modeling can occur in terms of behaviours
or of attitudes: “My uncle is a superintendent [...] he talked to me about the job,
so that’s what interested me. [...] He taught, he can really help me when there’s a
problem,” (Women, 26, Electricity); “My grandmother [...] she went back to do
her post-graduate degree, she was 60 years old and she went,” (Women, 32, Computer
graphics); “During the summer I worked with Serge and it was like, oh, that’s what I
want to do!” (Women, 39, Carpentry).

A last form of important support is financial support. Most of the participants are in a couple, with kids and regular expenses (housing, car, food, etc.). The question of financing studies, as well as other expenses of civic life, involves reasoned planning. Some students can always count on their parents, freeing them from some of these common obligations: “I still live with my parents, so I don’t pay for housing or food, and I know that that helps me a lot,” (Men, 28, Carpentry); “I only receive $1000 a month. With my girlfriend’s salary, that helps, but I still sometimes have to call mom or dad.” (Men, 28, Electricity) Some of the participants receive income support from the state. In Quebec, it is possible to continue this support as part of a return-to-school project. However, the government has the right to approve or reject the educational project of applicants. Applicants must therefore demonstrate need to government officials. Sometimes the experience is easy, even helpful, and sometimes laborious: “I really fought […] to get this aid, which was really hard to get,” (Women, 34, Aesthetics); “I met an Emploi-Quebec agent who directed me to the VET center, I chose a program […] and I have the good fortune to be funded by Emploi-Quebec […] the agent who was there told me: ‘I’m going to send you to training, to get you a real diploma,’” (Women, 27, Secretarial studies); “They encourage us to go to school, they give us programs to help us and all, but they limit us down the line, then we’re stuck […] if you have a house that costs you $1500 a month, and all the food, the car, the gas. How are you going to live on $800?” (Men, 33, Building mechanics).

For adults who return to school without support from parents or income support measures, the state offers a loan and bursary program. This can be a lifesaver for participants: “If I don’t have the right to loans and bursaries, I can’t go back to school, I have nothing,” (Women, 39, Carpentry); “It’s really serious, a damn good thing that it’s there. The bursaries help me a lot […] if I didn’t have that, I wouldn’t be able to go,” (Women, 28, Carpentry). In addition to financial aid for school, some participants have to meet their needs with food aid: “I went to see the school social worker because I was having a hard time finding the money to eat. So she helped me a little […]. After that, things got better,” (Women, 25, Aesthetics); “I also go to Centre Bernard-Hamel for food every month […] for those who don’t have big salaries […], that’s helped a lot,” (Men, 28, Electricity).

4.5 Reconcile Proximity and the Known (n=28)

The decision to return to school in vocational education and training may rely on this final rationale, that of seeking to reconcile proximity and the known. It is a sort of adjustment strategy to contextual forces, to bring important elements from other areas of one’s life into the project. The vast majority of participants place considerable emphasis on pursuing education in their region, enabling them to save money on studies, transportation and other things, as well as travel time and distance. In some cases, this criterion may disqualify an inspirational study project offered in another region, prioritizing that considered less interesting, which favours proximity and the known: “I like my region. I won’t say that I didn’t think about going somewhere else, but I feel
good here [...]. I’m close to my family, too. So I don’t want to go away,” (Women, 25, Aesthetics); “I arranged to find something that interested me enough that was offered in Rouyn. [...] I didn’t want to move,” (Women, 28, Carpentry); “I would have a hard time studying away from home [...] I’d probably miss my family [...]. I’m doing this program because I can stay in the area. I don’t want to go to the big centers,” (Men, 28, Electricity). For those who enroll in programs farther away, the experience is often seen more negatively: “It’s an hour away and I have the kids so I have to organize everything in the morning [...] from daycare to school [...]. It’s a lot of driving [...], a lot of organization, [...] sacrifices for coming to school,” (Women, 34, Pastry making).

It is difficult to isolate the experience of continuing education in VET for participants age 25 and over from all other needs and roles in life. Moreover, an effort to reconcile these factors is undertaken both to prepare the return-to-school project and to complete it, in collaboration with loved ones and others concerned: “My son arrives home for lunch, and I’m there. [I can] also make my own schedule, be self-employed,” (Women, 34, Aesthetics); “I wanted to go into multimedia at university [...] my girlfriend got pregnant [...]. With a baby and everything at university, I would have cracked [...]. My second choice was to take another program at the Polymétier in electricity, what I’m doing now,” (Men, 28, Electricity); “Going back to school at my age, I find it hard. [...] I’m a single parent. If I had help at home, maybe it would be easier. But you have to be at home, then in the morning before you leave you have to think of everything, see to everything,” (Women, 39, Carpentry).

5 Discussion

The results of this thematic analysis from interviews with 30 Quebec adults age 25 and over enrolled in a VET study program resulted in five decision-making rationales that guided their career decision: 1) Get out of a socioprofessional and economic slump; 2) Know yourself better, personally and socially; 3) Value the concrete and the practical; 4) Take advantage of supporting conditions; and 5) Reconcile proximity and the known.

Both initial educational experiences (childhood, adolescence) and employment experiences are marked by problems and pitfalls, dissatisfactions and often humiliations. These findings are consistent with those of Lehman et al. (2014) and Vonthron et al. (2007) concerning the experience of difficulties—academic, social, professional, familial, psychological and others—that are more common among this population. In this respect, it seems that some of the students encountered present personal and social identities weakened by dysfunctional and unconstructive relationships with educational and employment institutions that bear standards, values, guidelines, ideologies, injunctions and directives as proposed in studies by Cohen-Scali and Pouvaud (2008), by Dumora et al. (2008) or by Lahire (2001). These sociorelational experiences, in addition to impacting the non-linearity of paths (Bessin et al., 2010; Peavy, 1997), are related to the career decision-making difficulties raised in Gati’s work (Gati et al., 1996; Gati et al., 2010): the level of preparation (motivation, indecision, dysfunctional beliefs), information (on oneself and professions, and how information is gathered and processed) and
representations (internal and external conflicts, incorrect information). The academic and professional contexts encountered on one’s path, whether related to institutions or the influence of social relationships, have in some way shaped the representations, emotions or behaviours involved in the decision to return to school in vocational education and training, as seen in the works of Lent et al. (1994), Patton and McMahon (2006) and Peterson et al. (2002).

The pursuit of studies in VET for these adults is not so much a prolongation of the path as a redirection of the path. The notion of “adjustment” strategies is fundamental and especially meaningful for these people as they seek not only to adjust to contextual forces helping or hindering the present pursuit of a VET program, but do so in a transition, bifurcation or reconfiguration of their path, while trying out a new identity that is both personal and social (Elder, 1998). The relationship between contextual forces and adjustment strategies finds a major point of interaction in the role of supporters. Like students of all ages, participants may benefit from emotional, instrumental and financial support from loved ones such as parents, friends and teaching and professional staff from institutions and the outside (Burt, 2000; Cournoyer, 2012; Giordano, 2003; Granovetter, 1973). However, in comparison with previous studies on the role of social relationships on the academic paths of young adult populations (Cournoyer, 2008; Cournoyer, 2012; Cournoyer, Fortier, & Deschenaux, 2017), three things play an important role: spouses, the state and guidance counselors. Spouses are more than mere emotional partners, they are also parental and financial partners. They come to replace the predominant role of parents, particularly mothers, as factors of exchange and influence. As for the state, it is an indispensable actor for participants receiving social benefits who want to maintain them while pursuing studies, rather than be faced with the obligation to look for a job without additional education. Therefore, the state, through its advisors/agents, is a donor to persuade and to satisfy in order to obtain the financial aid to pursue a project otherwise unachievable. Guidance counselors are often seen as mechanisms placed between the state and benefit recipients for obtaining financial assistance. However, the experience reported by the majority of participants suggests that at this point in their lives—perhaps more than at a younger age—the aid, advice and insight in terms of information about self and the job market, about making an informed career decision, is highly sought after and appreciated.

Finally, the project to continue education in VET is more often a “means” to organize and articulate, in a fairly short period (compared to higher education), without spending too much time or money (transportation, financing studies), without upsetting all the roles in life toward one “end,” an outlook on life that is satisfying on personal, professional and family levels. In this regard and as in Fournier et al. (2008) and the OECD (2010), VET in Quebec is a favourable mechanism for qualification and access to employment for the greatest number of people. Our analysis of comments from adult participants age 25 and over with highly heterogeneous life paths (Deschenaux & Roussel, 2010) suggests that the unfavourable prejudices attached to VET and reported by many authors (Lehmann, Taylor, & Wright, 2014; MELS/Réseau des commissions scolaires, 2007) are of little concern to them. It can be argued that the needs for security and socioeconomic stability are, as Bujold and Fournier (2008) point out, sufficiently
satisfied in these more experienced adults.

The decision-making logic of participants fits very well into the model of dual tension between life path and professional project, and between contextual forces and adjustment strategies. Consequently, decision-making processes, especially as related to careers, are interrelated to one another and part of a complex process involving resources and constraints (Charbonneau, 2005; De Coninck & Godard, 1991; Shanahan, 2000) at once cognitive, emotional, behavioural, relational and contextual (Hodkinson & Sparkes, 1997; Lent, Brown, & Hackett, 1994; Patton & McMahon, 2006; Peterson, Sampson, Reardon, & Lenz; Saka & Gati, 2007), but also historical (Edler, 1998), for the purpose of freedom and self-realization.

This research has some limitations. First, the proposed findings do not make it possible to distinguish differences in terms of gender or age brackets. It is also not possible to distinguish the decision-making rationales of these students age 25 and over from their colleagues under age 25 who take the same type of training, nor does it help to situate the realities experienced in Quebec compared to those of other Canadians. However, it is important to recall that the purpose of this article is to focus specifically on students age 25 and over. Considering the comprehensive paradigm adopted in this research, we did not seek to test the hypotheses in order to confirm relationships between the identified variables or components of decision-making. Finally, this research aimed to undertake a first exploration of decision-making logic with regard to a modeling of decision-making action resulting from the works of Cournoyer, Lachance and Samson (2016) and Cournoyer, Fortier and Descheniaux (2017). These limitations could nonetheless be taken into account for future research.

The findings and elements of discussion proposed in this paper may guide educational and psychosocial professionals working in vocational education and training centers, as well as social and institutional decision-makers, to establish support and supervisory measures for these older students in regard to their particular issues and realities. As in the works by Aubret and Demouge (2000) on lifelong learning, the decision-making logic uncovered should encourage educational institutions to consider individuals' professional orientation as a complex process of identity building, socialization and socioprofessional integration. Returning to school as an adult means reliving and re-experiencing one's relationship to studies, to school, and to oneself in terms of abilities. Beyond the strict mission of learning, it is important to help individuals integrate their educational experiences into a perspective of personal, professional and social development.

Regarding social policies related to vocational education and training, the students' personal, professional and social development objectives should align with the objectives to prevent job precarity and socioeconomic exclusion proposed by the Quebec government (Government of Quebec, 2017). An adult who attends vocational education and training is more than just a student. He is also a parent, a spouse, and a person with financial and familial responsibilities; in short, he is a person who wants to be accompanied in his studies and wants to find a job that will give him stability and security for himself and his family. In this regard, it seems appropriate to provide additional information and academic and professional counseling services. Adopting alternating training, such as that proposed by European models of continuous alternation between
education and employment, could help to foster this faster, more concrete and practical link mentioned by participants in this research. Finally, promotion and enhancement of vocational education and training must continue to inform and potentially interest a greater number of students under age 20 (Hart, 2017), but it must clearly and realistically turn toward older students such as those concerned by this inquiry, through means that directly target their needs and aspirations as professionals, family members, citizens, etc. (Goyer, 2017). Among other things, it must reassure these adults in order to appease their doubts while raising their hopes. Returning to vocational education and training at age 25 or over in Quebec seems to be an experience that heals wounds of the past, reconciles roles in life up to the present, and is a quest for a more satisfying life in the near future.
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The Reasons Behind a Career Change Through Vocational Education and Training

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Abstract: We report the results of qualitative research on adults who enrolled in a vocational and education training (VET) program with the intention of changing their careers. The participants were 30 adults aged between 25 and 45 years. A modified version of the consensual qualitative research method was applied to transcriptions of semi-structured interviews with the participants. There appeared to be two main reasons underlying the decision to enrol in a VET program with the aim of initiating a career change. Based on the reasons given, two groups (career changers and proactive changers) and five distinct categories were recognized. The career changers included individuals who wished to change careers due to dissatisfaction with their current situation. In this group, the decisions were motivated by either health problems or personal dissatisfaction. The proactive changers included individuals who wished to reorient their career because of a desire to undertake new projects. In this group, there were three categories of reasons: a wish to attain better working conditions, a search for personal growth and a desire to have an occupation that fitted the person’s vocation. Thus, the participants reoriented their careers according to various motivations, pointing to the existence of a heterogeneous population and the complexity of the phenomenon. The results highlight the importance of understanding the subjective reasons behind career changes and the need to adjust career interventions accordingly.

Keywords: VET, Vocational Education and Training, Career Change, Work Transition, Qualitative Research, Adult Learning, Career Choice

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1 Introduction

The contemporary world of work is characterized by constant and unpredictable changes. Consequently, careers are less stable and foreseeable, and work transitions increase in frequency and complexity (Fouad & Bynner, 2008; Hall & Mirvis, 2014; Rudisill, Edwards, Hershberger, Jadwin, & McKee, 2010). Work transitions cover (re)entries in the labor market, role changes within an organization, advancements, as well as “leave-or-seek transitions” (Heppner & Scott, 2006, p. 157). The latter lead to actual career changes, i.e. shifts from an occupation to a new, different one (Ibarra, 2006). In these cases, work transitions might be complex, because workers have to integrate a relatively unknown occupational context and learn new skills. In order to be able to do that, they might decide—or are asked—to enroll in a formal qualification process (Carless & Arnup, 2011). In such cases, vocational education and training (VET) is often preferred, as it allows to obtain quite quickly a qualification and to integrate a new career domain (Masdonati, Fournier, & Pinault, 2015). Yet, little is known about the reasons explaining why people change their career through a VET program.

1.1 Career Change

According to Ibarra (2006), career changes refer “to a subset of work role transitions that include a change of employers, along with some degree of change in the actual job or work role and the subjective perception that such changes constitute a ‘career change’” (p. 77). They consist then of a specific type of work transition, implying the shift to an occupation that is different from the past occupation. From an objective viewpoint, the difference between the past and the new occupation can be more or less radical. Whatever the case may be, the change is not part of a typical career path (Carless & Arnup, 2012) and must be subjectively considered as such by the person who experiences it. Career changes can be voluntary—e.g. the person autonomously decides to change—or involuntary—e.g. the person is laid off and forced to change—although it is often difficult to determine the actual person’s agency on his or her transition (Fouad & Bynner, 2008).

Research on the topic focuses on three different aspects of a career change that we call inputs, processes, and outputs. Inputs refer to the reasons, motives, or antecedents of a career change, i.e. to the factors that initiate and lead to a change, and will be developed in the following paragraph. Processes refer to the experience of change itself, i.e. the stages and phases workers pass through during a career change. Négroni (2007), for example, identified five phases for voluntary career changes: countered vocation, disengagement, latency, bifurcation, and renewed engagement. Similarly, Barclay, Stoltz, and Chung (2011) also speak about five stages: precontemplation/disengagement, contemplation/growth, preparation/exploration, action/establishment, and maintenance. Outputs refer to the effects, outcomes, and impacts of a career change on the life of the individual, and are associated with the radicality and likelihood of change, the satisfaction with the new situation, and the speed and ease of the transition (Ibarra, 2006). A successful career change may then lead to workers’ empowerment and confidence (Bahr, 2010),
as well as to higher job satisfaction (Carless & Arnup, 2012) and perceived mastery (Hostetler, Sweet, & Moen, 2007).

Concerning the input dimension, which we focus on in the present contribution, the reasons explaining a career change are generally divided into “push” or “pull” movements (e.g. Wise & Millward, 2005). Actually, the antecedents of career change are factors that “might pull individual toward a new career or push them away from the old” (Ibarra, 2006, p. 77). Beyond this bimodal classification, the reasons of career change highlighted in past research may be divided into five distinct categories: avoiding job insecurity or poor work conditions; coping with a particular life event or personal circumstance; reducing dissatisfaction and work frustration; performing a meaningful, interesting work; looking for a work-life balance (Bahr, 2010; Barclay et al., 2011; Carless & Arnup, 2011; Dieu & Delhaye, 2009; Donohue, 2007; Fournier, Gauthier, Perron, Masdonati, Zimmermann, & Lachance, 2017; Howes & Goodman-Delahunty, 2014; Khapova, Arthur, Wilderom, & Svensson, 2007; Négroni, 2007; Peake & McDowall, 2012).

1.2 Career Change through Vocational Education and Training

Besides input, process and output factors, some moderator factors may influence the experience of a career change. Past research stressed, e.g., that career changes vary according to personal (e.g. age, gender, education) or psychosocial characteristics (e.g. personality, attitudes, perceived mastery, professional identity), to the environment (e.g. family situation, network, social support), and to situational factors (e.g. concomitant life circumstances, timing, chance events, socioeconomic context) (Bahr, 2010; Carless & Arnup, 2011; Higgins, 2001; Hostetler et al., 2007; Ibarra, 2006; Khapova et al., 2007; Peake & McDowall, 2012). Among moderator factors, the necessity to go back to school in order to qualify for a new occupation may influence the decision and the experience of a career change, and is sometimes considered as an obstacle to it (Ibarra 2006; Juntunen & Bailey, 2014). Actually, when a career change implies returning to school, individuals have to take into account a supplementary, sometimes dissuading step in order to implement their plans (Donohue, 2007). We consider that the case of career changes implying a return to school is a particular one since it concerns adults who were able to engage in a time- and resource-demanding additional stage in order to realize their project (Carless & Arnup, 2011). We expect then that this population presents particular and specific motivations for a career change.

Surprisingly, few studies have specifically focused on career changes involving a return to school (Hostetler et al., 2007), the latter being at best considered as one among different configurations of career changes (Bahr, 2010; Dieu & Delhaye, 2009; Négroni, 2007). VET constitutes an educational option that can be chosen by adults who want to change career. It enables to learn an occupation in a quick and direct way, which confines the costs—in terms of time and money—of a career change project (Juntunen & Bailey, 2014). In western societies, VET consists in the combination of theoretical and practical courses, often associated with direct learning in real companies through internships or a dual education system (Organisation for Economic Co-operation and Development [OECD], 2014).
The present research was carried out in the province of Quebec, Canada, where VET students enroll in one- to two-year programs, and most of them are offered theoretical education and practical training in vocational schools and benefit at the same time from internships in real companies (Cournoyer, Fortier, & Descheniaux, 2016; Lehmann, Taylor, & Wright, 2014). These secondary-level programs are available to students who did not obtain their general high school diploma. Although adolescents can enroll in a VET program already during compulsory education, most VET students in Quebec are adults, the mean age being higher than 25 years old (Doray, 2010; Ministry of education of Quebec, [MELS], 2010). The Quebecker education system is indeed very flexible, so that returning to school—at different education levels, from high school to university—is facilitated than an effective adult education system (Charbonneau, 2006). The latter is the result of education reforms that intended to encourage workers who had integrated the labor market without a qualification to return to school (Lavoie, Levesque, & Aubin-Horth, 2008). The main goal of these reforms was to reduce labor market precariousness in the knowledge society, i.e. in a context where formal qualifications are a key protective factor against job insecurity (Doray & BéLANGER, 2005). The high proportion of adults enrolled in a VET program suggests that people wanting to change career might consider VET as an attractive option in order to get a new—or a first—qualification (Doray, 2010).

1.3 Career Change as a Psychosocial Transition

From a theoretical viewpoint, we conceive and analyze career change through VET as a psychosocial transition (Masdonati & Zittoun, 2012; Parkes, 1971; Zittoun, 2009). This perspective implies considering intra-psychological, interpersonal, and social influences on career change processes. It also involves focusing on subjectivity and meaning making, i.e. on the reasons for a career change as they are experienced and perceived by the individuals—consciously omitting the possibly divergent objective reasons (Fournier et al., 2017; Rudisill et al., 2010, Murtagh, Lopes, Lyons, 2011). Moreover, the psychosocial perspective implies integrating a time dimension in the understanding of transitions and career changes (Hostetler et al., 2007; Howes & Goodman-Delahunty, 2014). That means that we are interested in the specificities of a career change as an adult’s transition, i.e. a transition that is biographically paced and anchored in (and articulated according to) concrete past experiences (Boutinet, 2007; Juntunen & Bailey, 2014; Merriam, 2005). The temporal dimension also stresses that a transition has to be considered as a process covering three main phases (Anderson, Goodman, & Schlossberg, 2012): a sort of “incubation” period, where the person anticipates the changes and the new situation he or she is preparing for; the moment of the concrete movement, where people focus on coping with the changes that are prompted by the new situation; an integration phase, where the person pursues a kind of stability within the new situation. In that sense, analyzing the reasons for career change means concentrating on the first phase of the process, i.e. on the factors that initiated the transition movement. Finally, like every psychosocial transition, a career change encompasses formal or informal learning processes and the acquisition of new social, cognitive, or technical skills (Carless & Arnup, 2011; Masdonati & Zittoun, 2012; Merriam, 2005; Zittoun, 2008). Preparing and
integrating a new occupation actually means, for example, learning how to be competent in doing that job and how to manage work role transitions (Ibarra & Barbulescu, 2010), as well as how to interact with new colleagues in order to be accepted in their community of practice (Wenger, 1998). In our research, learning processes are formalized through the enrollment in VET programs, but we also suppose that informal learning processes already occur before the transition and might initiate career changes.

The aim of the present research was to explore and categorize the reasons underlying career changes through VET as they are subjectively experienced and explained by career changers at different moments of their life course. In line with our theoretical psychosocial perspective, we opted for an idiographic approach and focused on the inductive understanding of different reasons of career change, which respects the richness of subjective data as well as the complexity and specificities of this transitional process. We then tried to fill in the gap of knowledge on the reasons motivating a career change that includes a return to school, particularly to VET, and proposed a research that was neither focused on specific occupations nor limited to a particular life stage of adults’ development.

2 Method

2.1 Participants

Participants were 30 VET students, 14 females and 16 males, aged between 25 and 45 years old ($M = 30.10$, $SD = 4.81$). Inclusion criteria were being between 25 and 45 years old and having worked for at least two years before enrolling in VET. VET programs were selected in two steps. First, we identified the VET domains where students were the oldest according to the statistics about the Province of Quebec\(^1\). Second, we contacted VET schools in the Quebec City area and asked the school directors who were interested in participating in the project to have access to the programs where the students’ mean ages were the highest, according to their own school statistics.

Twenty-five out of 30 participants were in a VET program that had nothing to do with their previous occupational field, whereas five of them enrolled in a program leading to a new occupation within the same field or in a near field. According to the 2016 Canadian National Occupational Classification\(^2\), the selected VET programs covered three occupational domains: health (licensed practical nurses, $N = 13$); construction and equipment (refrigeration mechanics and welders, $N = 10$); natural resources and agriculture (arboriculturists, horticulturists, and landscape designers, $N = 7$). Participants’ occupation before enrolling in VET enclosed very diverse domains: sales and service ($N = 9$, e.g. salesperson); education, community and government services ($N = 5$, e.g. drug addiction worker); health ($N = 4$, e.g. patient care aide); arts and culture ($N = 4$, e.g. graphic designer); trades, transport and equipment ($N = 9$, e.g. truck driver); business and administration ($N = 3$, e.g. secretary). Ten participants were

\(^1\)http://www.inforouteftp.org

\(^2\)http://noc.esdc.gc.ca
single, 20 had a partner, including five who were married, and eight had one to three children. Concerning their education level, six of them already had a VET degree in another occupational field, 14 had diplomas higher than VET (e.g. technical education, bachelor degree), and ten had lower levels of education than VET (e.g. high school degree or less).

2.2 Material

Semi-structured, 60 to 120 min interviews were carried out individually with participants. The interview guide was tested with three adults having experienced a career change that implied a return to school, and adjusted according to their feedback. Interviews were structured into six themes: (1) sociodemographic information; (2) life path; (3) reasons for career change and of return to school; (4) systemic influences on career change and on return to school; (5) relationship to work and occupational identity; (6) articulation of student and adult roles. For the present contribution, we mainly focused on the third theme and on its main question: “What brought you to change your career and to go back to a VET program?” When the answer to this question was not satisfactorily detailed, interviewers asked follow-up questions, such as: “What were the triggers that made you take this decision?” and “Which particular events influenced this decision?”

2.3 Procedure

After having received the accordance of school directors, two members of the research team presented the project in the classes of the VET programs that were selected for the study. At the end of each presentation, they asked interested students to inscribe for an interview. Participation in the study was then voluntary. During the days following the class presentations, the research team members contacted the students who were interested in participating in the research in order to schedule a meeting. We then met each participant individually in an isolated room in their school or at Laval university, depending on their preference. Interviews were recorded and fully transcribed with the authorization of participants. Data were collected and treated in conformity with the American Psychological Association ethics and with the approval of the ethics committee of our university.

2.4 Data Analysis

Data analysis was carried out using the software QDA-Miner 3.2.3 and consisted in an adaptation of the consensual qualitative research procedure (CQR, Hill, 2012), already tested in previous research (Masdonati, Fournier, Pinault, & Lahrizi, 2016). We selected CQR because of the exploratory and inductive aim of our research. Its adaptation was adopted in order to deal with a bigger dataset than traditional CQR, the latter being conceived for smaller samples and shorter interviews. The analysis team was composed of five members: a professor in career counseling and development (researcher 1), two PhD students (researchers 2 and 3), and two Master students (researchers 4 and 5). The
four students already had previous experiences as research assistants in qualitative research in the field of career counseling and development and were trained and supervised by researcher 1. Data analysis entailed three steps: domains identification; categories definition; coding. Our first step corresponds to the CQR stages of developing a domain list and identifying core ideas and was carried out by researchers 2 to 5, researcher 1 being the auditor. Our second and third steps correspond to the CQR cross-analysis stage and were mainly carried out by researchers 2 and 4, researchers 1, 3, and 5 playing the role of auditors.

2.4.1 Domains Identification
This first step was divided into three substeps. First, the team members shared and went through the 30 interview transcriptions. During a team meeting, they then consensually identified and defined seven domains: life and vocational path; reasons for the career change; process of career change; meaning of career change; future plans; work-to-school transition; representations of VET. Second, researchers 2 to 5 separately coded the domains of four common transcriptions, compared their coding and reached consensus in a team meeting with researcher 1. The remaining 26 transcriptions were then shared for the coding of domains of the whole sample. Third, researchers 2 to 5 fulfilled a summary sheet for each participant, summing up what characterized them in each of the seven domains. This substep replaced then the core ideas stage of the CQR.

2.4.2 Categories Definition
According to our topic, the second step was only applied both on the summary sheets and on the interviews sections covering the second domain, i.e. “reasons for the career change”. Three substeps characterized the definition of categories. First, researchers 2 and 4 separately read all the summary sheets, went through the interviews sections, and identified a common preliminary categorization of reasons. Second, they submitted their categorization to researchers 1, 3, and 5, and the research team met in order to discuss and consensually adjust it. Third, researchers 2 and 4 wrote down a definition and a detailed description—including exemplary quotes—of each category. These definitions were sent to the three other researchers, who commented and completed them, leading to a final version of the categories definition, description, and illustration.

2.4.3 Coding
The third step was carried out by researchers 2 and 4, researcher 1 playing the auditor role, and was divided into three substeps. First, the two researchers identified meaning units within the selected interview sections and coded each unit independently, according to the categories defined in the previous step. They then compared their coding and found consensus in the case of disagreement. This substep resulted in the identification of the different reasons each participant had evoked in order to explain her or his career change. Second, researchers 2 and 4 independently selected, among the possible different reasons a participant could evoke, the main reason explaining career change. Again, they
compared their coding and found consensus in the case of disagreement. Cohen’s Kappa inter-rater reliability indexes were almost perfect for the first substep, $k = .92$, and substantial for the second substep, $k = .73$ (Landis & Koch, 1977). Third, we calculated the frequencies of both evoked reasons and of the main reason for the career change, and we identified the most recurrent co-occurrences between evoked reasons—i.e. categories of reasons that were often simultaneously evoked by participants.

3 Results

Our analyses pointed out the existence of five distinct reasons for career change through VET: dealing with health problems; reducing dissatisfaction; attaining attractive working conditions; growing personally; pursuing a vocation. The five categories of reasons were assigned to two higher order categories or themes, i.e. reactive changes and proactive changes, and each category covered two to three lower-order categories or declinations. Table 1 proposes an overview of the types (themes), reasons (categories) and declinations (subcategories) of career changes.

Table 1: Overview of the Types, Reasons, and Declinations of career changes through VET

<table>
<thead>
<tr>
<th>Type of change (themes)</th>
<th>Reason for change (categories)</th>
<th>Declinations (subcategories)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactive changes</td>
<td>1. Dealing with health problems $(N_e = 6; N_m = 2)$</td>
<td>   – Physical health problems</td>
</tr>
<tr>
<td></td>
<td>2. Reducing dissatisfaction $(N_e = 20; N_m = 10)$</td>
<td>  – Psychological health problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>  – Unsatisfying work characteristics</td>
</tr>
<tr>
<td>Proactive changes</td>
<td>3. Attaining attractive working conditions $(N_e = 20; N_m = 8)$</td>
<td>  – Good integration perspectives</td>
</tr>
<tr>
<td></td>
<td>4. Growing personally $(N_e = 12; N_m = 3)$</td>
<td>  – Desirable work context</td>
</tr>
<tr>
<td></td>
<td>5. Pursuing a vocation $(N_e = 23; N_m = 7)$</td>
<td>  – High-quality employment conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>  – Learning of new skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>  – Need for a life change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>  – Fitting interests</td>
</tr>
<tr>
<td></td>
<td></td>
<td>  – Fitting values</td>
</tr>
</tbody>
</table>

Note. $N = 30$. $N_e =$ number of participants evoking the reason. $N_m =$ number of participants considering the reason as the main reason for career change.

The following sections report the definitions, descriptions, and illustrations of each category and subcategory of reasons within the two themes, as well as frequencies and co-occurrences within participants. Illustrations consist of participants’ quotes that we considered being good exemplifications of each category and subcategory of reasons. The rationale for the selection of quotes also took into account the variety of our sample in terms of VET domains.
3.1 Reactive Changes

The first main type of change refers to reactive career changers, i.e., participants who changed their career primarily with the intention of breaking their current occupational situation ($N = 12$). Two categories of reasons were concerned here: the necessity to deal with physical or psychological health problems and the wish to reduce work or employment dissatisfaction.

3.1.1 Dealing with Health Problems

Six participants decided more or less voluntarily to change career because of health problems, which was the main reason for a career change for two of them. The latter could be physical, such as back pain, or psychological, such as stress, depression, or burnout. This decision could arise from a personal statement—e.g., introspection, feeling of a decreasing wellbeing—or from the recommendation of health professionals—e.g., physicians, psychologists, physiotherapists. As for physical issues, for example, participant 6, a 33 years old male, enrolled in a refrigeration mechanic VET program after having injured his arm when he worked as a roofer. He told us:

*I had reached that point. I got hurt. So, now I choose another career that will look for similarities compared to where I was, but I will have to go back in a new career.*

Concerning psychological issues, for example, participant 8 (male, 28 years old) decided to change from nurse to welder in order to go through a depression:

*You know, the events that happened to me, the attempt I made. When I did my depression, it was like... it made me decide to do it. That's why I say it's as if it was... somehow, not a choice, but an imposition that I made myself.*

3.1.2 Reducing Dissatisfaction

Twenty participants were unsatisfied with their former occupation, and among them, ten participants considered dissatisfaction as the main reason for a career change. This dissatisfaction was due to work characteristics or employment conditions. In the first case, participants no longer had an interest in the very nature of the job, which did not allow them to feel happy at work. They felt that they had “done their time”, not being in their place, or that the tasks they had to perform were no longer appropriate, or had been modified. That is what stated participant 11 (female, 32 years old, future practical nurse) about her previous experience as waitress:

*It's really a local restaurant, people get along very well, so it's fun. But I'm sick of catering; I know that, at some point... No, that's also what made me decide: do I want to spend my life talking about wine, while I've moved on to other things in my life?*
In the second case, people were unsatisfied with what characterized employment beyond work contents. They spoke about concrete hard conditions, job insecurity (e.g. changes in the organizational structure, risk of layoff), demanding work schedules and work hours, and a deteriorating work climate. Participant 18, a 28 years old male, future horticulturist who previously worked as personnel supervisor in a gaming center and in several other part-time jobs, said for example:

* I couldn’t stand it anymore to finish at 3am, then to arrive at home at 4am. Then you have the kids jumping into the bed at 6am. I could sleep until 11am, but it was not great nights, mentally. I was not very good, I had to work at day, at night: it wasn’t good.*

### 3.2 Proactive Changes

The second main type of career changes refers to proactive changers, i.e. individuals who reoriented their career above all because they aimed at realizing new professional and personal plans ($N = 18$). Unlike reactive changers, proactive changers were more future-oriented, and their decision to change was less relied to their previous more or less unsatisfying occupation. This type included three categories of reasons: a wish to attain attractive working conditions; the search of personal growth; the desire to have an occupation that fits with one’s vocation.

#### 3.2.1 Attaining Attractive Working Conditions

Twenty people made the choice to integrate a new field since they were looking for a better professional future. Unlike the previous category, participants were here more driven by new attractive opportunities than by dissatisfaction toward their former occupational situation. General working conditions were considered attractive according to three distinct criteria. Firstly, the new occupation guaranteed good labor market integration perspectives, due to high job opportunities in the field. That is what participant 4 (male, 31 years old) experienced when he decided to stop working in the earthwork and snow clearing sectors in order to enroll in a welder VET program:

*I said to myself: ”I’m going to do something that will be quick, that at the moment is in demand”. That’s really the right timing to be a welder. It’s like people who studied IT ten years ago. Today, it’s saturated. . . But today, welding. . . I made an informed choice, with that.*

Secondly, the career change opened up to a desirable work context, i.e. a fulfilling work environment, a good working climate, or a diversity of tasks. For example, participant 16 (male, 31 years old), moved from a job as sporting goods salesperson to a VET program as arboriculturist in order to work in a more stimulating environment:

*I wanted to be outside all the time, tripping. This is the main. . . in the types of jobs I was looking for, I made a selection in my career choice: being outdoors, physical endurance, these are things that I wanted.*
Thirdly, the new occupation led to high-quality employment conditions, such as good wages, job security, and satisfying schedules. The latter situation is illustrated by participant 5, a 27 years old male enrolled in a refrigeration mechanic VET program, who previously worked as an infantry soldier and hardware store assistant:

*My salary allowed me to be OK, but it didn’t allow me to make plans for my future. […] It allowed me to save money, to pay a small trip, my holidays or maybe to change little things, to change my TV, for example. But not to the point of telling me: “I save to be able to invest in my retirement funds, or to be able to put money aside in order to have a down payment for a house”.*

### 3.2.2 Growing Personally

Twelve participants chose to change career in order “to add a string to their bow”, to grow, to develop as an individual, or even to flourish. Three of them considered this reason as the one best explaining their career change. This decision was based on personal or professional reasons and was related to two distinct sorts of needs. First, participants spoke about a need for a change in life, for surpassing themselves, and for succeeding. A career change represented then a personal rather than a mere professional development. Changing their lives could mean having the possibility to think about different future plans, meeting new challenges, or simply feeling alive. That is what motivated participant 19 (25 years old) to quit her job as secretary in order to become practical nurse:

*I think that’s what I needed: to make my life move. Nothing happened in my life. I didn’t really like… You know, I didn’t see myself being secretary all my life […] Then I needed new challenges and, again, to find myself, I think.*

Second, participants spoke about the need for learning new skills. They changed their career mainly to deepen their knowledge, to learn new things, and were curious and eager to learn. That was the case of participant 13, 45 years old, future horticulturist, previously working as waiter and import-export salesperson:

*I said to myself: “But what would I do to go on with my quest for knowledge?” […] I don’t have much knowledge, but I like to learn in this field. Then, at one point, when I read the descriptive sheet of the vocational training program, I said to myself: “OK, I might never be a great botanist, but I can be an excellent gardener, I can study gardening, horticulture”.*

### 3.2.3 Pursuing a Vocation

Twenty-three people realized that there was an occupation that could fill them, seven of them considering that their decision to change career was first and foremost due to that reason. They experienced a sort of awareness, a realization of the existence of a vocation, hitherto hidden or not followed. This realization was related to their values or to their
interests. In the first case, people decided to change career to invest an occupational field that was closer to their work values, but also to their life and ethical principles, such as caring, sharing, lifelong learning or open-mindedness. For example, after having taken care of her grandmother until her death, participant 11 (32 years old) realized that working as a waitress impeded her to meet her core life values. She decided then to enroll in a VET program of practical nurse:

> It’s my grandmother [illness]. The contact with hospitals, all that, and the fact that I deeply love people. Then I find that injustice, mistreatment and those things, it completely revolts me. To be able to change the comfort of a person. You know, that’s what matters to me.

In the second case, some participants decided to integrate a field that would better meet their interests. These interests had been present for a long time or had emerged only recently or gradually. For example, at the age of 31 participant 12, who previously worked as helmsman, discovered an interest for working with plants, which led him to enroll in a landscape designer VET program:

> I’ve always liked working in plants, you know: I’m manual. That led me to choose this program in particular. Then, when the first time, when I signed up, basically it was much more for... let’s say, how do we call it? “Personal interest”.

3.3 Frequencies and Co-occurrences

Table 1 indicates the frequency of evocation of each category, as well as the number of participants considering each category as the main reason for their career change. Concerning these numbers, we state that most participants changed career because of several reasons, mentioning on average 2.7 reasons that explained their decision to change. An overview of the major co-occurrences of reasons for changing career indicates for example that health problems were never evoked as an isolated factor. They were mainly associated with dissatisfaction toward the past occupation (first category of reasons, five out of six participants) and with the desire to pursue a vocation (fifth category, also five out of six participants). The latter was also evoked by 17 out of 20 participants who at the same time aspired to attractive working conditions. Finally, 17 out of 30 participants evoked both reactive and proactive types of change.

4 Discussion

An idiographic approach of the subjective reasons explaining a career change through VET indicates that people reoriented their career according to very diverse motivations, which suggests the existence of a heterogeneous population of adults, having specific life paths and experiences. Moreover, in line with Howes and Goodman-Delahunty’s (2014) results, career change decisions are rarely explained by a distinct, isolated reason. They seem rather triggered by a combination of multiple reasons and by the articulation of
both intra-individual (e.g. need for a life change and for a job that fits personal values and interests, our fourth and fifth categories of reasons) and contextual influences (e.g. need for better employment conditions and integration perspectives, our second and third categories of reasons). In line with a psychosocial approach, this statement indicates that career changes suppose complex and challenging decisions. Particularly when it implies going back to school, adults probably decide to change career only when more than a single factor combine and simultaneously drive to such a decision. For example, some participants found the strength to initiate a change because they identified an occupation that was interesting both from a vocational viewpoint and in terms of working conditions. Others opted for a change because unsatisfying work and employment characteristics were coupled with threats to their physical or mental health. The fact that more than the half of participants evoked both reactive and proactive reasons seems to corroborate the “multicausality” of career change decisions.

Our results confirm the existence of two main categories of push and pull factors stressed in the literature (Ibarra, 2006; Wise & Millward, 2005), qualified here as reactive and proactive changes. The implications and meaning of a career change might then be different for a person who wants to quit an unsatisfying situation (reactive change), comparatively to those who are drawn to an appealing new job (proactive change). Although theoretically pertinent, from an empirical viewpoint this distinction needs yet to be nuanced: the splitting of push and pull factors might sometimes be artificial or difficult to detect in qualitative material, since many participants decided to change their career because of both reactive and proactive motivations. The more precise five categories of reasons for career change that emerged from our analyses also globally tend to confirm the typologies already highlighted in previous research (e.g. Carless & Arnup, 2011; Dieu & Delhaye, 2009; Donohue, 2007; Howes & Goodman-Delahunty, 2014; Khapova et al., 2007). Still, our results encompass some specificities.

4.1 Career Changes and Decent Work

The first specific characteristic is that, with a few notable exceptions (e.g. Howes & Goodman-Delahunty, 2014), health issues—i.e., our first category of reasons for career change—are rarely highlighted in previous studies. The notion of decent work, addressed e.g. in the Psychology of Working Theory (PWT, Duffy, Blustein, Diemer, & Autin, 2016), could help contextualize this result. We actually assume that the ultimate goal of adults’ engagement in a career change is to find an occupation that approaches them to a work that they consider as decent. The definition of decent work relies on several indicators, such as suitable hours, shared organizational values, adequate wages, access to social protections, and safe working conditions. Threats to health might transgress the latter indicator and can be seen as a push factor motivating people to engage in a training that leads to safer working conditions. Although not new, the need to change career in order to avoid health problems could then be interpreted as a sign of the fact that the contemporary labor market is sometimes characterized by work that is not decent and that jeopardizes workers’ health. This confirms that the world of work might be threatening not only because of precariousness and insecurity but also because
some occupations or occupational contexts, even if stable and secure from a contractual viewpoint, may become unhealthy and detrimental (International Labour Organization [ILO], 2016; World Health Organization [WHO], 2011).

The second specificity of our results is that, whereas past research stressed the importance for career changers of finding a meaningful work, some of our participants mainly aspire to attractive work conditions or integration chances (i.e., our third category of reasons for career change). This statement seems to confirm the existence of so-called instrumental relationships to work. Some workers do not expect from work to fulfill self-determination, but rather to guarantee survival (Blustein, 2006). Otherwise said, in some cases a career change may be envisioned to find an extrinsically rewarding job, in opposition to an orientation to work in terms of a career or a calling (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997). This interpretation might confirm the existence of different configurations of work meanings, and the need to understand what subjectively binds people to their work. The definition of decent work should then go beyond the objective indicators listed above and include what people personally expect from it. Consequently, it stresses the pertinence of adopting a psychosocial lens in order to understand career change processes.

4.2 From Willingness to Volition

Our results might also indicate that, contrarily to previous studies that mainly focused on voluntary career changes, our sample covered different degrees of intentionality and control over the decision of changing a career. Although important for determining the constraining role of contextual factors on career transitions (Fouad & Bynner, 2008), the opposition of voluntary and involuntary career changes seems here artificial and difficult to detect “empirically”. Most participants evoke indeed a combination of multiple reasons explaining their career change, ranging from independent—e.g. our fifth category: “pursuing a vocation”—to more or less forced choices—e.g. our first category: “dealing with health problems”. We prefer then to situate career change inputs on a continuum ranging from rather intentional and controlled to rather unintentional and uncontrolled decisions.

In line with our psychosocial perspective, the notion of work volition—i.e. the “individual’s perception of choice in career decision making” (Duffy et al., 2016, p. 135)—could be a complementary avenue in order to subtly capture the interplay between the intentionality of a career change and contextual constraints. Besides trying to objectively qualify a career change as voluntary or involuntary, it might then also be pertinent to identify the degree of perceived mastery on the decision within a configuration of given contextual influences (Fournier et al., 2017).

4.3 Temporality and Learning during Career Changes

Considering career change as psychosocial transitions also means addressing the temporality and learning issues underlying the process of change. Concerning the time dimension, our results confirm that the decision of changing is anchored in people’s bi-
ographies (Fournier et al., 2017; Boutinet, 2007). Particularly, reactive changers took that decision above all because of an unsatisfying appraisal of their past career path, whereas proactive changers were more oriented toward building appealing perspectives in order to enhance their future career path. However, since a single participant often evoked both reactive and proactive reasons for career change, the latter might be more the result of a complex articulation between people’s representations of their work trajectory and their anticipations of possible career options.

As regards learning issues, results stress that informal learning processes already occur before the enrolment in a VET program and might trigger the decision to change career. For example, changing career because of attractive working conditions (our third category of reasons) presumes that people have somehow become aware of the existence of more interesting working sectors, i.e. that they “learned” new information on the work context. Changing career with the goal of pursuing a vocation (our fifth category of reasons) can also be understood as the result of a learning process, leading to an enriched self-knowledge in terms of values and interests. Finally, the need to learn new skills (a declination of our fourth the category: “Growing personally”) is itself one of the reasons for career change. Interestingly, in these cases, a career transition not only initiates learning processes but is also initiated by learning needs.

4.4 Implications for Practice

Our results stress the importance to understand the subjective reasons behind a career change in adulthood and to adjust career and educational interventions accordingly (Juntunen & Bailey, 2014). On the one hand, reactive changers should be invited not only to focus on past unsatisfying situations but also and at the same time on promising, motivating career plans (Boutinet, 2007). This could help them to identify occupations where they are sure not to experience the same difficulties again. Moreover, particularly for people changing career because of health issues, preventive interventions should be planned in order to better detect risk situations that might cause physical and mental problems at the workplace and force a career change.

On the other hand, proactive career changers should be supported—strategically, materially, and emotionally—in order to reduce possible barriers impeding them or threatening their motivation to realize their plans. From an educational perspective, VET schools should, for example, be aware both of adult career changers’ specificities and needs as students and of the variations of incentives and motivations within this particular group. In some occupational fields, this could even lead to the development of specific VET programs for adult career changers that take into account their specific characteristics and offer a place where they can not only learn but also meet and support each other (Hall & Mirvis, 2014).

4.5 Limitations and Future Directions

This research has some limitations that should be taken into account for a satisfactory understanding of the complexity of career change through VET, leading to perspectives
for new research in the field. First, we exclusively focused on the reasons participants evoked to explain career change, omitting other potentially moderating variables. Future research should more systematically consider and situate these reasons according, for example, to the subjective meaning of career change within the life course and the professional path of the individual, as well as to her or his personal and social situation (e.g., family issues, environmental barriers and supports, duties outside the work sphere, gender, ethnicity or socioeconomic status). Second, we focused essentially on career change inputs, but not on the motivation to implement it through VET in particular. Additional research is then needed to investigate how and why some adults opt for enrolling in VET, as well as the perceived pros and cons of this specific option, comparatively to alternative “back to school” processes. Third, we met students in three specific occupational fields and only once during VET. Further research could test possible different configurations of reasons for change with students in other VET programs as well as with adults who already graduated and worked—or not—in their new career field. Indeed, given the importance of the time dimension when studying psychosocial transitions, the way participants recall their decision to change their career depends on the moment they are asked to explain it.
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When Work Comes First: Young Adults in Vocational Education and Training in Norway

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Abstract: Since reforms implemented in 1994, vocational education and training (VET) in Norway has been integrated and standardized as part of upper-secondary education. When young people enter upper-secondary education at the age of 15 or 16, they can choose either a vocational programme or a general academic programme. The standard model in vocational programmes is 2 years of school-based education, followed by 2 years of apprenticeship training. However, in practice, only a minority follow the standard route and acquire a trade certificate within 4 years. The average age upon completion of a vocational programme in Norway is 28 years, which is among the highest in the OECD. The purpose of this study was to explore personal trajectories within the Norwegian context to gain a better understanding of why people choose to obtain a trade certificate as young adults, instead of following the standardized route, drawn up by policy makers. Qualitative interviews were conducted with 34 people who obtained a trade certificate when they were aged between 25 and 35 years. The study showed that the opportunity to acquire formal VET qualifications through workplace learning provides an important second chance for many young adults in Norway. Based on the findings, we argue that policy makers need to see educational achievement in a long-term perspective and to design institutional structures that support learning opportunities at work, as well as in formal educational settings.

Keywords: VET, Vocational Education and Training, Young Adults, School-to-Work Transitions, Dropout, Norway

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1 Introduction

School-to-work transitions have been described by many scholars as less standardised and more individualised due to the restructuring of work and deregulation of the labour market during the last decades (Furlong, 2009; Heinz, 2002; Müller & Gangl, 2003; Walther, 2006). Young people are exposed to a wide range of educational options. At the same time, they have to handle risk and uncertainty related to rapid changes in the labour market. As a consequence, young people often change direction within the education system, or they move back and forth between school and work (Jørgensen, 2013b). Several studies have shown that policy measures aimed at more efficient school-to-work transitions in vocational education and training (VET) often do not consider these more complex and prolonged trajectories (Christodoulou, 2016; Graaf & Zenderen, 2013; Molgat, Deschenaux, & LeBlanc, 2011). There is a significant body of research on individual experiences within adult learning and within VET. However, few researchers have conducted qualitative studies on the personal trajectories of people who acquire formal VET qualifications as young adults. The purpose of this paper, therefore, is to analyse trajectories of people who follow non-standardised pathways and obtain formal VET qualifications as adults within the Norwegian transition system[1]. In addition, we discuss how institutional structures in the education system and the labour market can support completion of a VET programme as adults.

The article is structured as follows. In section 2, we outline the analytical framework by focusing on transition systems and personal trajectories from school to work. Section 3 provides a brief overview of the Norwegian transition system, focusing on vocational education. Then, Section 4 describes the data and method. In Section 5, we present and analyse individual trajectories towards a trade certificate in carpentry and in child care and youth work. In the final section, we discuss the main findings and policy implications from the study[2].

2 Theoretical Framework

Until the 1970s, it was not uncommon to leave school and enter the workplace at the age of 15 or 16. But with the deindustrialisation and rising youth unemployment of the 1970s, young people tended to stay longer in the education system (Furlong, 2009; Lundahl, 2012). Today, compulsory education in most European countries lasts 9–10 years, until the age of 15 or 16 (European Commission, 2014). However, most young people continue their education beyond compulsory school. In effect, upper-secondary education is perceived as more or less mandatory in most countries. General education levels have increased, and an increasing number of people move on to tertiary education. Employment opportunities for young people have changed, with fewer jobs in manu-

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facturing and more jobs in the service sector, which demand different types of skills (Reegård, 2015). A rapidly changing labour market in combination with changes in the education system have contributed to more complex and extended transitions from school to work and from youth to adulthood (Heinz, 2002, 2009; Müller & Gangl, 2003; Walther & Plug, 2006). When studying educational trajectories, we need to understand how different options are being considered and valued by youth and young adults in various life phases and within different institutional structures. Thus, by analysing personal trajectories towards formal VET qualifications, the paper aims to increase our understanding of how young people navigate within different institutional contexts.

In many cases, political measures and reforms seem to be based on assumptions of young people’s rational and goal-oriented choices. These assumptions often diverge from the actual transition patterns described by researchers (Jørgensen, 2013b; Stokes & Wyn, 2007). In addition, most policy measures and reforms focus primarily on changes within the education system. However, actual transition patterns are also shaped by broader institutional and structural factors related to labour market organisation, welfare systems and family structures. This broader concept of institutional factors shaping school-to-work transitions can be referred to as a “transition system” or “transition regime” (Raffe, 2008; Walther, 2006). Most research on transition systems has been based on comparative analyses of survey data. One of the challenges of this research is moving beyond the nation–state as a unit of analysis to explain variations within countries (Raffe, 2008). In our study, we focus on individual trajectories in two selected trades to understand how people navigate within the Norwegian transition system. Our focus is on the interplay between individual and institutional factors in Norwegian VET.

The transition regime in the Nordic countries is often referred to as universalistic. Universalistic transition regimes are characterised by a comprehensive school system with national standards for education and training. In addition, there are welfare systems that provide young people with social assistance regardless of socio-economic background. Universalistic regimes are also characterised by an extended public sector and high female labour market participation (Walther, 2006). However, there are also important differences between the Nordic countries. Researchers within the comparative VET literature have developed typologies related to different ways of connecting education and work. Sweden and Finland have strong traditions for state regulated and school based VET, whereas Denmark and Norway are based on a dual system, where school based education is combined with apprenticeship training provided by employers. Skill regimes based on the dual system are generally associated with low levels of youth unemployment. This is often seen as an indication of an efficient system that provides smooth transitions from school to work (Jørgensen, 2013b; Steedman, 2012). The development of specific occupational skills and a gradual socialisation to working life through apprenticeship are important mechanisms that contribute to smooth transitions. While transitions to work may be one of the strengths of the dual system, transitions from vocational training to tertiary education tend to be one of the major weaknesses (Cedefop, 2012; Jørgensen, 2013a; Powell & Solga, 2011). If access to higher education is blocked or restrained, the choice of a vocational education might be considered a blind alley or associated with high risk by adolescents and their parents. In countries with dual
systems, improved access to higher education, therefore, is important in order to raise the esteem of vocational education and training in apprenticeship-based systems (Graf, 2016; Jørgensen, 2015; Virolainen & Persson Thunqvist, 2016).

3 A Brief Overview of the Norwegian VET System

Rising youth unemployment at the end of the 1980s was an important backdrop for the introduction of a statutory right to upper-secondary education for young people in Norway via the 1994 reform (Nyen, Skålholt, & Tønder, 2015). Today, almost all 16-year-olds (98 percent) start directly in upper-secondary after completing lower-secondary education (Statistics Norway, 2017). In upper-secondary education, students can choose between eight vocational and five general studies programmes (in 2017). Norway has a unitary school system at the upper-secondary level, with vocational and general academic programmes offered within the same schools and with opportunities to switch from a vocational programme to an academic programme through a third supplementary year (Nyen & Tønder, 2015; Skule, Stuart, & Nyen, 2002). About half the students who start in upper-secondary education enter a vocational programme. However, dropout rates among vocational students are high, and a large number of students switch from vocational programmes to the third supplementary year in order to gain access to higher education (Bunting, Halvorsen, & Mosahu, 2017; Markussen, Frøseth, Sandberg, Lødding, & Borgen, 2011). Most higher education institutions in Norway are state financed and free of charge for the students. The share of the population aged 19-24 in higher education has increased significantly in the last decades, rising from around 10 per cent in 1980 to 35 per cent in 2016 (Statistics Norway, 2017).

A stated aim when introducing the Reform of 1994 was that 90 percent of students should complete upper secondary education within five years. Those who do not meet this aim are defined as dropouts and are a matter of great political concern. Since 1994, completion rates in upper secondary education have stabilised at around 70 percent, measured after five years. Completion rates in upper-secondary education are given high political priority in Norway and are monitored closely by education authorities (Hiim, 2017). A number of policy initiatives have been implemented in order to reduce dropouts, with a particular focus on students in vocational programmes. One example is the Ny GIV (“new possibilities”) initiative that was launched in 2010. The aim was to improve completion rates with specific measures targeted at low-performing students and to motivate participation in education for students ages 16–21 who were neither in education or in employment (OECD, 2015). With a strong policy emphasis on dropout and educational attainment among youth at risk in a short time perspective, less attention has so far been paid to the personal trajectories of students who obtain their trade certificates as young adults (Nyen et al., 2015).

Adults in Norway can acquire formal VET qualifications either as adult apprentices or through the experience-based trade certificate programme as so-called practice candidates. The practice candidate scheme provides an opportunity to register for a theoretical and practical trade examination based on occupational skills that have been
developed through work experience. Normally, a minimum of five years of relevant and documented work experience is required. Those who pass the trade examination receive the same formal qualifications and the same documentation as those who follow the standard route. The practice based route was introduced in the 1950s and has played an important role in the labour market due to collective agreements that give skilled workers with a trade certificate a higher wage (Skule et al., 2002).

About 1500–2000 people receive a trade certificate as adult apprentices every year. Analysis of register data shows that the adult apprentices have a background similar to those who complete their vocational training by following the standard model. The practice candidates, however, have a social background similar to people who never complete upper-secondary education, meaning that this institutional arrangement has the potential to reduce social inequalities. As many as about 6000–7000 persons receive their trade certificates as practice candidates every year. Two out of three practice candidates complete upper-secondary education for the first time when they pass the test and receive the trade certificate (Bratsberg, Nyen, & Raaum, 2017).

4 Data and Method

The data used in this article build on findings from qualitative interviews conducted between 2014 and 2015. The aim of the interviews was to investigate the personal trajectories of people who obtain formal VET qualifications as young adults. Two vocational trades were selected for the comparison: 1) carpentry, a male-dominated occupation mainly in the private sector, and 2) child care and youth work, a female-dominated occupation in which most workers are employed by municipalities and work in kindergartens, schools or supervised after-school activities. By concentrating on only two occupations, we could investigate individual trajectories within similar institutional contexts. The trades were chosen because they are big in terms of number of trade certificates completed annually, and because the occupations in themselves are characterised by a demand on the labour market. In order to capture the influence of regional variations, we interviewed people living in two different geographical regions in Norway: 1) the East (big city), characterised by both a relatively large share of immigrants and, on the average, a high educational level, and 2) the West (medium-sized city and surrounding rural areas), where vocational studies (especially technical studies) are in relatively high regard.

Contact information was gathered from county administration registers. We interviewed 34 people who were 25–35 years old when they acquired their formal VET qualifications (a trade or journeyman’s certificate), approximately two years after formalisation. This was to secure that enough time had passed for them to reflect on their choices and the possible consequences. At the same time, their decision-making processes would still be relatively fresh in their memory. The interviews were semi-structured, with 29 face-to-face and five telephone interviews. The length of the face-to-face interviews varied from about one hour to one and a half hours. The telephone interviews were somewhat shorter.
All the interviews were transcribed verbatim. Each individual was treated as a specific case, and each transcription was read thoroughly before being organised according to the interview guide’s main categories: family background, educational experience, transitions from school to work and decision making processes related to attaining the trade certificate. The case material, then, was comprised and systemised within each of these categories. The names used in the article are fictitious. All the participants freely agreed to participate, and no incentives were given. The interviewees gave their consent to be contacted by the researchers to the county administration. All interviews were recorded with consent of the interviewees.

Mapping trajectories and decision-making processes is about finding reasons: Why did they get their trade certificates as adults and not as young students? We were, however, careful with “why” questions, as they have two important disadvantages. First, they may cause respondents to feel defensive, which may inhibit their responses. Second, they infer a cause–effect relationship that may not exist (McNamara, 2009). Thus, such questions may push the interviewee to construct an explanation “on the spot”. The interviewees were asked to talk about their educational experiences, their family’s education and influence on their choices, their work experience and the story behind entering carpentry or child care and youth work and acquiring the trade certificate. The interview guide contained several questions within each category, but the interviewees were encouraged to speak freely. The interviewer structured the order of the topics according to the flow of the conversation, asking frequent follow-up questions and pursuing topics introduced by the interviewee. The interviews, thus, played out as biographical interviews used by several researchers within the field of adult education (Merrill, 2009) in the sense that they generated vivid descriptions and in-depth insights into lived experiences (Barabasch & Merrill, 2014).

Barabasch and Merrill underline that narratives are a co-construction between the researcher and the researched. They state, however, that narratives are always only partial, as an individual selects what he or she wants to tell about their past and present lives. They are also located in a specific moment of time (Barabasch & Merrill, 2014, p. 288). We cannot eliminate any possibility of post-hoc rationalisation of personal choices or the construction of causalities, or the omission of details in their stories that they simply did not want to share with us.

5 Empirical Findings

This chapter gives a brief overview of the participants in the study before presenting the findings from the interviews with carpenters and child care and youth workers.

5.1 Participants

As Table 1 demonstrates, most of the interviewees completed upper-secondary school for the first time before entering the trade and not as they obtained their trade certificate in carpentry or child care and youth work as adults. All but one of the eight immigrants in our material moved to Norway as an adult, and most immigrants had completed upper-
secondary school in their home country. All eight immigrants lived in the East region in Norway. Two of the carpenters had migrated from Eastern Europe, and one from Sweden. Among the child care and youth workers, the immigrants were from Eastern Europe, Africa and Asia.

### Table 1: Descriptive characteristics of participants

<table>
<thead>
<tr>
<th></th>
<th>Carpenters</th>
<th>Child care and youth workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>East region (big city)</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>West region (medium city/rural area)</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>19</td>
<td>5</td>
</tr>
<tr>
<td>Women</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Formal learning category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult apprentices</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Practice candidates</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Completed upper-secondary school before</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Immigrant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>11</td>
</tr>
</tbody>
</table>

Some of the interviewees had one or two parents with a higher education, but the majority came from working-class backgrounds. Many of the interviewees first embarked on, and completed, general studies in upper-secondary school. (The general track prepares the student for higher education, but not for a specific occupation.) Most of them explained that either their parents had encouraged them to make this choice, that they had followed their friends or just that they were not ready to choose an occupation at the age of 15 or 16. At the same time, most of the interviewees stated that their parents generally were supportive of their educational choices when they were young or that they did not express strong opinions about their choice. A couple of the carpenters chose the general track due to initial ambitions to become engineers. Only one of the carpenters explained that his highly educated parents had discouraged him from embarking on vocational studies when he started upper-secondary school.

A common statement among the child care and youth workers who completed upper-secondary school in the general track was that they were tired of school and not motivated for further studies at the time of their graduation. The carpenters, in contrast, generally chose a different wording and explained how they were drawn to work rather than studies, especially after completing military service. Only a minority of them expressed that school was somewhat of a struggle when they were young.

### 5.2 Carpenters

In this section, we will show how reasons for entering carpentry as a trade can be distinct from the reasons behind the decision to obtain a trade certificate. Two main paths
towards the trade were detected in the material. Some of the men had been introduced to carpentry by chance. Others had entered the occupation intentionally. Independently of the path, they describe their interest in the trade in very similar ways: the value of varied work and the joy of learning new things. A common theme in the men’s stories was about gradually gaining an interest in a new trade. Their trajectories towards carpentry were shaped as they went along—by curiosity, testing and an eagerness to learn new things. Two main routes were revealed: through the try-out of different jobs, and by intention. In the following section, we analyse the interviewees’ subjective accounts of their trajectories, before describing the process towards formalisation of skills, i.e., obtaining the trade certificate.

5.2.1 Finding a job, Trying it out

The first category is characterised by testing different jobs. The carpenters’ social networks played an important role in their entry into the occupation. Bjørn explained how, after 12 years working as a welder, he was ready for a change. When a good friend encouraged him to apply for work with his employer, he decided to go for it. His good impression of the company was a crucial factor in this decision. An obvious attraction to carpentry over welding was the social aspect of not having to work “inside a mask”, Bjørn stated. Even more, a carpenter can enjoy fresh air.

The following quote from Jon illustrates the element of coincidence in trying out different occupations. After failing to enter art school, he decided to get a job and called a previous employer in order to list them as a reference. This company had since merged with a carpentry firm:

> So, I called to hear whether I could list my previous manager as a reference for potential employers. And when I called, he said “Oh, Jon? You’re that artist? Why don’t you just come work with us?” And I figured, “Why not?”

(Jon)

The aspect of chance and the importance of the network are also illustrated by Thomas. After completing military service, he started working at a grocery store in his village. “I told myself, ‘I need a year, just to save some money and do some thinking, whether I shall pursue more education or not,’” Thomas stated. After a year, his cousin asked him to help him at his one-man carpentry business. He found the job interesting, and when the cousin moved to another part of the country, he followed.

In this category, we also find the only one who participated in adult education in the more conventional sense. Having dropped out of upper-secondary school, Peter received an offer from the municipality to participate in a carpentry training class for adults. As he did not have a steady job at the time, he decided to try it, although he had no knowledge about the occupation. “Back then, I didn’t even have any idea what a carpenter was,” Peter stated. “So, when I got there . . . the first day it was like, ‘Oh, it’s the same as being a joiner!’”
5.2.2 By Intention

The other 12 men entered carpentry intentionally. Two of them pursued carpentry after first having had steady jobs in another field of work. Christian obtained a trade certificate within chemical processing and worked at an aluminium plant for 12 years. Although the job was steady, it was also monotonous, and the shift hours were demanding. His eventual change to carpentry was due to a wish to do more varied work and have a regular day job. Roger completed his nursing education and worked at different hospital departments for nearly a year before realising that he had made the wrong choice—being responsible for vulnerable people was not for him. Having tried carpentry work on a hobby basis with his father and brother, he was not unfamiliar with the work, and the decision to change seemed like a safe one. Ove explained that, although he considered carpentry as a 16-year-old, he chose the general upper-secondary track because carpentry had a somewhat dubious reputation:

\[\text{The people who chose that track, most of them didn't care about school, and when you're ... 14, 15? ... and you don't know, and the school advisor looks at your grades and sees that they look fine, they will always recommend the general track. (Ove)}\]

With friends going for the general track to become “doctors and engineers”, it was easy for him to make the same choice. After military service, however, he did not want to embark on higher education. While working temporarily at an orphanage, he gazed at the carpenters working on the orphanage rooftop and decided that their job looked easier than the shift work in the health sector.

Trond and Leif, who share a background from a general upper-secondary track, both described how they felt an urge to learn a craft. Leif explained his lack of practical skills: “It suddenly hit me that I didn't know how to do any practical work, and I wanted to learn how to build my own things.” Unlike Trond, Leif did not have much experience with manual labour beforehand; his work experience was in retailing. Trond had different manual jobs during summer vacations.

The carpenters describe the appeal of carpentry in remarkably similar ways. For all of them, the fact that they like the craft played a significant role in their decision-making. The joy of learning new things was generally an important factor in the carpenters’ stories. Variation and a notion of creating something were crucial elements. Christian, who worked for a manufacturer before, described the almost “Taylorist” way of working in his first construction company. He decided to change to a different company, where every carpenter is involved in the whole house-building process. “You kind of feel more ownership to a house that way,” Christian stated. This was also illustrated by Nils: “Everybody works with everything. It’s not like in other companies; that is, one team raises the building and another team isolates it. We go through the whole process.” Jon compared the repetitiveness related to working on large constructions to the monotony of working in manufacturing: “It’s like being a manufacturer working at the assembly line.”
5.2.3 Towards Formalisation

The interviews revealed two main explanations of actually formalising their skills. First, eight of the 19 men explained that they had a plan to obtain the trade certificate right from the day they decided to enter carpentry—they had a desire to work as skilled carpenters. The second category comprises those who obtained the trade certificate after a few years of working because it appeared to be a good opportunity, and it made little sense to turn it down. Only one of them considered carpentry as a 16-year-old. Many of the carpenters were exposed to some kind of practical work growing up, for example, by growing up on a farm (primarily, in the West) or by having fathers who were either carpenters or “hobby carpenters”. Still, only one had considered carpentry as an alternative when applying for upper-secondary school.

Most of the carpenters obtained a trade certificate after four or five years in the trade. Two different modes of reasoning can be detected. The first category includes those whose plans were to obtain a trade certificate as they entered carpentry work (eight of the 19 men). For Ove, Gunnar and Fredrik, the goal of getting an education was an important driver. Ove had already completed general upper-secondary school. Nevertheless, he explained, “I felt that I needed an education, and getting the trade certificate was a convenient way. You get paid, and I also figured that it could be a base for further education.”

This was also illustrated by Fredrik, who completed forestry studies with university preparatory courses. “I felt as if I wasn’t good enough, and I was looking to get more education,” he stated. “To get the title of a skilled carpenter, that meant a lot to me.”

For Peter, who took part in a class for adult learners, the apprenticeship was the laid-out course towards becoming a carpenter. Three of the adult apprentices commenced as apprentices from the beginning because this was the pathway they had heard of through their network. Thus, the apprenticeship was their path towards the trade, and earning the trade certificate was an obvious goal.

Other carpenters in our material obtained their trade certificate as practice candidates in the same company. They make up the second category: those who obtained the trade certificate because it appeared to be a good opportunity that it made little sense to turn down. Among them, only three can be said to have actively pushed for this opportunity. Lukas, who is a migrant worker, explained how he wanted the trade certificate to prove his skills and motivation to his Norwegian colleagues. In addition to securing mobility towards other employers, a certificate would allow him to stand out from the other migrant workers in construction. “Skilled workers are more appreciated on the construction site,” he stated.

Two carpenters explained that the certificate was highly encouraged and even considered a necessity by the employer. For the others, getting a formal certificate appeared more to be a nice offer than an absolute necessity. This was illustrated by Nils: “I didn’t need the trade certificate. But someone asked me if I wanted to do it, so… fair enough. I figured that a trade certificate would probably come in handy.”
5.3 Child Care and Youth Workers

Most of the 16 child care and youth workers in our material had no plans to work with children or youth when they were young. As young adults, they were primarily motivated for work. Some described themselves as tired of school, while others had established families of their own and needed a secure income. Many ended up working with children after trying out different jobs, indicating that their initial identification with child care and youth work was not very strong. Their professional interest and occupational identities as child care and youth workers developed gradually through work experience, often through positive feedback from employers, colleagues and parents of children in the kindergarten.

Assistant work in kindergartens and schools are some of the job opportunities that are still available to young people without formal education or prior work experience. A few of the women started out aiming for other occupations but changed directions when they had children of their own. One example is Anne, who wanted to become a hairdresser after graduating from high school. She found that, as a hairdresser, she had to work evenings and weekends. When she had her first child, she was offered a job in a kindergarten with more regular work hours. After that, she just continued to work in the kindergarten.

Becoming a parent is an event that often has an impact on the personal trajectories, for young mothers in particular. This was expressed by Lene: “I became a mother quite early. I was only 20. It was not what I had envisioned, but it happened. And there are certain things in life that are more important, and then other things are put on hold.”

Most of the child care and youth workers that were interviewed tried out different jobs along the way. Some had cleaning jobs, others worked at filling stations, in different sales jobs, at restaurants and hotels, or as security guards. The men who were interviewed attempted many different jobs before they started working with children. Four of seven male child care and youth workers were immigrants. Two of these had higher education from other countries. Their main concern was to find work and a secure income as soon as possible. Adam worked as a teacher before he came to Norway, but knew that he would not be able to get a teaching position in Norway. His plan was to find a job in a kindergarten where he could learn the language and at the same time train to become a child care and youth worker and get a trade certificate.

Even if working with children was not a long-term plan, most of the child care and youth workers gradually developed positive attitudes towards their present occupation. In upper-secondary school, Maria never thought she would work with children. Today she says she enjoys her work very much:

What I like so much about my work is how the kids just love you, almost unconditionally. You just come in the morning, if you have a bad day, a bad start at home, but the kids meet you and smile and want to sit on your lap. They love you, and you mean so much to them. That is the important thing. You get so much in return in this job. (Maria)

Anders is another person who began working in a kindergarten more or less by chance.
He now says that he enjoys the freedom and variation in his work:

*The freedom you have, that is perhaps what I enjoy most of all. You don’t have to sit at an office desk for eight hours, or do the same thing over and over. I can put on some music with the kids; we can dance. Or we can make a painting. It’s a great occupation.* (Anders)

5.3.1 Getting an Education

Those who receive a trade certificate in child care and youth work will usually receive a wage increase, regulated in collective agreements. According to the interviewees, this was only one motivating factor, and maybe not the most important. The child care and youth workers often emphasised the need to show that they were skilled workers with a relevant education. Based on their accounts, the motivation to get an education can be related to increased social status and to have a stronger position in the labour market, in addition to higher wages. Also, the child care and youth workers often expressed a need to show that they did not “just work with children”; they had made a conscious effort to obtain the necessary qualifications.

Most of the child care and youth workers began working with children without having a long-term plan. After a while, it became important to them to obtain a trade certificate. The wages for child care and youth workers are regulated by collective agreements in the municipal sector. It is reasonable to assume that higher wages were a motivating factor, even if this is not always explicitly mentioned by the interviewees. What seemed to be maybe more important to the child care and youth workers than to the carpenters was the formal recognition of skills. The interviewees talked about the importance of “having an education”. This became even more important when faced with the general opinion that “anyone” can work with children.

Anne said she wanted the trade certificate to show, for herself and for her own children, that she had an education. She did not “just work in a kindergarten”; she had made an effort and acquired the necessary qualifications to do a good job. She also felt that it was important to her personally to have a trade certificate. Remembering how much she had struggled when she was in school, she stated, “To me it really matters to know that I have an education. I had such a hard time in lower secondary and in high school. But I actually succeeded in getting the trade certificate.”

Others said the trade certificate was something to “fall back on”. The general impression conveyed by the child care and youth workers was that a person with a trade certificate has a stronger position in the labour market.

Kristine stated that formal qualifications are becoming increasingly important in order to get a job: “You need to have a paper, a trade certificate, something to show. And you can also build on it later on if you wish. And these days, you need an education to get in.”
5.3.2 Learning through Work

When describing the learning process, many of the child care and youth workers compared their work-based learning with their learning experiences in school. Studying became much easier when they could relate what they read to their personal work experiences. When studying for the exam, they developed new knowledge, but they also became aware of how much they already had learned through work. One example is Hilde, who had concentration problems and dropped out of upper-secondary school. She said that, when she prepared for the child care and youth worker examination, she became aware of how much she already had learned through her work:

*There is so much there in the theory that you don’t really think about, but you do it every day. This is something I noticed when I was reading. Everything that you read about is what you do in everyday life. And I remember with the examination too, that I just merged everything, little things that we do, that’s what we read about in theory.* (Hilde)

The increased awareness of what they already knew was a shared experience by many of the child care and youth workers. Maria explained that, when she read the books, she could always relate the theory to the kids she knew from her work, and that made the reading more inspiring:

*When I read the books, everything was so understandable. So, I thought it was a really nice way to get an education. Because you have all the experience, you are not completely green and new to it, and it becomes more inspiring and you can understand more. It is not just black and white in a book, because I have never been one of those who enjoyed reading.* (Maria)

6 Discussion and Conclusion

The aim of this article was to gain a better understanding of school to work transitions in Norwegian VET. We were primarily interested in why many people in Norway obtain their formal vocational qualifications as young adults instead of following the standard educational route designed by policy makers. The analysis has been guided by earlier research on school-to-work transitions and personal trajectories, where a number of scholars have identified changes in school-to-work transitions in the last decades. In our study, we are interested in personal trajectories for young adults within the Norwegian context, which can be characterised as a universalistic transition regime (Walther, 2006).

In our material, eight of 34 persons had not completed upper secondary education before they earned a trade certificate as adults. They would all be counted as early school leavers or dropouts in the official statistics. However, none of them described themselves as dropouts. They had different reasons for leaving school, but at the time, they were all more motivated to work than to continue their education. A second group had completed upper secondary education earlier, with a general certificate. Some of these people initially entered a vocational programme, but opted for a third supplementary
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year to obtain a general diploma of upper secondary education. However, when they graduated, they were not motivated to continue to higher education. Instead, they entered the labour market, but without formal vocational qualifications. A third group had completed upper secondary education earlier in another trade, but they found it was not the right occupation for them. Some experiences were related to working hours that were incompatible with starting a family or having small children. Others found that work in their chosen occupation became monotonous after a while and they needed change. In all cases, career decisions were based on information they did not have when they were 15 or 16 years old. A fourth group in our study consists of immigrants, most of whom had completed upper secondary education in another country before migrating to Norway and some of whom had completed higher education. They were all primarily motivated to work, but they found that their education was not recognised in the Norwegian labour market.

A common characteristic among all four groups is that the opportunity to obtain a trade certificate as adults was important, and a number of motives were identified. For child care and youth workers working in the public sector, a trade certificate in most if not all cases meant higher wages and increased job security. In addition, passing the trade examination often had positive effects in terms of higher self-esteem. Many discovered that they had learned much through work and became motivated for further education. For carpenters, the trade certificate did not necessarily lead to higher wages because they already earned wages at the same level as skilled workers. Nevertheless, they reported that the trade certificate was valued by employers and was important in terms of increased job security and more opportunities in the labour market. To both groups, the trade certificate also opened new prospects for further education.

The opportunity to formalise skills and knowledge from work-based learning was important in the adults’ decision to obtain a trade certificate. This was directly, through the conscious use of an arrangement that offered a trade certificate outside of the regular school system, which, for many, made it easier to combine formal education with domestic obligations. This was also important indirectly, through the benefits of learning through work and experience. This is in accordance with earlier research on adult learners, e.g. (Knowles, 1978). Many of the participants in our study had low motivation to attend school when they were young. Thus, the chance to earn a trade certificate as a practice candidate played a crucial role in their careers. In the Norwegian transition system, the practice candidate scheme is a “second chance” measure that provides access to formal qualifications that are recognised and valued in the labour market. Such measures may be of particular importance in a universalistic regime where the general level of education is high, there is strong cultural expectation to complete a formal education, and the opportunities in the labour market for persons without a formal education are limited.

Finally, we argue that the standardised VET model in upper secondary education in Norway is based on unrealistic assumptions about school to work transitions. A significant reduction in dropout rates in a short term perspective may not be achievable and perhaps not even desirable. At the age of 15, people not only have limited information about different occupations and labour market opportunities, but they also have
vague notions about their own preferences and capabilities. The policy implication that can be drawn from our study is that policy makers need to adopt a more long-term perspective on educational attainment and school-to-work transitions. In addition, our study shows the importance of institutional structures and second chance measures that support informal learning in the workplace.
References


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VET Again: Now as a VET Teacher

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Abstract: In 2010, a mandatory teacher training course was introduced for new vocational college teachers in Denmark. Since then, all vocational teachers have to complete the same course, regardless of practical work experience and educational background. After completion, they apply the knowledge to a very specific practice (i.e. teaching within a specific vocational field at a specific type of college). Thus, individual teachers experience different ‘learning trajectories’, depending on the vocational field and place of employment. They amass different experiences, including going back to school, just like newly enrolled students at a vocational college. This paper is based on empirical data from a qualitative study. It examines the learning trajectories of vocational teachers who choose to return to vocational colleges as VET teachers. Based on the analyses of two cases, we discuss the consequences for teachers’ pedagogical practice at vocational colleges and its potential for solving various challenges that colleges face.

Keywords: VET, Vocational Education and Training, Vocational Teacher, Theory and Practice, Adult Education, Transfer and Transformation, Learning Trajectories

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1 Introduction

In Denmark all vocational college teachers have both a formal education and years of work experience before they are employed as teachers at the colleges. In addition, newly employed vocational college teachers today are required to take a teacher training course while teaching at the vocational college. One objective of this requirement, which was introduced in 2010 and included in a large reform of the vocational college sector that was passed in 2014, is to counter pedagogic problems and a high student dropout rate.

At Danish vocational colleges, the proportion of students over age 25 has been increasing, and many students have been out of the education system for a number of years before they start on a vocational education. The dropout rate in this group places specific demands on the teachers’ pedagogic and didactic competencies and knowledge, and their ability to use these in practice. This includes being able to teach in a way that accommodates and accepts all students regardless of professional level, age, and other factors (Brown & Katznelson, 2011). With the 2014 reform, slightly different educational programmes were created for young and adult students, and the mandatory pedagogical diploma education was introduced to strengthen vocational college teachers’ pedagogical competencies to accommodate students who are returning to the educational system (Government, 2014, p. 2). Just as there is great diversity among the students at VET, the students in at the teacher training course differ considerably in terms of educational backgrounds and work experiences, and especially in terms of their teaching contexts. The article discusses role of the diversity and whether the intentions of the reform and upgrade of the teachers’ competencies can be expected to succeed.

Due to the above-mentioned requirements, all teachers at Danish vocational colleges have a biography with experiences from education and, for example, employment in trade and retail, before they start at VET again, now as teachers. In this sense, they are adults returning to VET. All teachers are required to complete a diploma in connection with their teacher training course after they are employed. However, they have different preconditions for developing pedagogically as a teacher and professionally as an employee at a specific college, which is why we talk about different ‘trajectories’ (Heggen et al., 2015). It is important to look at these conditions because they crucially affect the individual teacher’s benefits from the course and how they develop their pedagogical competencies.

European research pays little attention to the importance of vocational college teachers’ pedagogical education and its significance for the pedagogy at VET (Misra, 2011). International research on teacher training looks at the educations’ standards, access to professions, and economic conditions for students and investigates the relationship between theory and practice in teacher training, which is one of the areas where research indicates a need for improvement (Darling-Hammond & Lieberman, 2012). Research on vocational college teachers’ education points to at least two specific issues: the interplay between theory and practice in the teacher training and the large diversity of teachers who attend the teacher training course (Duch & Andreasen, 2015).

In education research, the relationship between theory and practice is understood in many different ways (Carr, 1986; Jorgensen, 2005), and in teacher training programmes
there are many initiatives to qualify this relationship in the education (Laursen, 2015). Some differentiate theoretically between different models for learning in professional educations (Lahn & Jensen, 2008); others emphasise transfer as an approach (Wahlgren & Aarkrog, 2012). Teaching in professional educations can thus be conceptualised, explored, and analysed in different ways, which may affect how professionalism is developed. In this article, these issues are thematised via the concept ‘trajectories’.

Based on a qualitative study among new teachers at Danish vocational colleges, we investigate the teachers’ trajectories and how trajectories, as a consequence of the teachers’ pedagogical qualification through the education, can affect the pedagogy and teaching of students at VET. This is a result of the pedagogy that the teachers develop and the considerations about the pedagogy and didactics framed by the activities in the teacher training programme. We are particularly interested in the significance of the teachers’ biography and their experiences with attending an education programme about pedagogy at VET, as well as which experiences and knowledge they apply from the education programme for their own teaching at VET.

2 Becoming a Vocational College Teacher in Denmark

Vocational college teachers in Denmark must have a vocational education or a professional education in addition to five years’ work experience to teach a vocational subject and two years’ work experience to teach other subjects (Danish Ministry of Education, 2016). In other words, employed teachers must have both a formal education and be experienced in the vocational area they teach. Once teachers are permanently employed at a vocational college, they must complete a pedagogical course at diploma level within four years. Most teachers choose the Diploma of Vocational Pedagogy, which is a programme in the continuing and further education system (Ministry of Higher Education and Science, 2014). It is level six in the qualification framework and equals 60 ECTS (Ministry of Higher Education and Science, 2016).

The course typically consists of five modules and a final thesis and can be attended full-time or part-time. Most vocational college teachers choose part-time. This means that when someone chooses to become a vocational college teacher, they also choose to study again. The level for the pedagogical education for Danish teachers is at the lower end in Europe. Most teacher training courses are placed at level five to eight in the European Qualification Framework (CEDEFOP, 2016). However, teacher training in Europe is difficult to compare due to varying job requirement and content (Misra, 2011).

In Denmark, the vocational upper secondary education and training (VET) is a dual system. The duration of VET programmes is 3 or 3.5 years, but can vary. The programmes prepare students for a career in trade, industry, or public health service. Teachers employed at technical colleges may have to return to their original education.

The 2014 vocational college reform, which was supported by a broad political majority, mentions vocational college teachers’ pedagogical education. In brief, the teachers’ pedagogy must contribute to meeting goals stated in the reform: increase the number
of young people who choose and complete a vocational education; challenge students to take a higher professional level; increase the outside world’s confidence in vocational educations (Government et al., 2014).

For example, research shows that a range of inequality issues in vocational education are associated with social inclusion and prestige in society (Jørgensen, 2014). The dropout rate has been a central issue in both education policy and research on vocational colleges (Jørgensen, 2015; Nielsen et al., 2013), and there are different ideas about how to motivate young people at vocational colleges (Nielsen & Tanggaard, 2015).

In this article, we are concerned with teacher training for vocational college teachers when they return to VET as teachers. We ask about their learning when they move between being students in a course and being teachers at a vocational college together with colleagues and about how experienced similarities and differences in the contexts affect learning.

The article proceeds as follows: We describe the relationship between theoretical and practical knowledge in light of the concept of trajectories. We present our method, empirical evidence, and analytical approach. The analysis focuses on two teachers’ learning, and we discuss relationships between contexts that appear to promote learning as well as the trajectories that are indicated in the empirical evidence. Finally, we discuss the possible impact of trajectories on the teachers’ pedagogy at vocational colleges.

3 Theoretical Framework: Trajectories

Theorists use ‘trajectory’ to capture development and learning as a process over time in which a person takes part in and experiences different contexts. For example, the sociologist Pierre Bourdieu talks about the concept of habitus and the individual’s unpredictable trajectories, or collective trajectories when more individuals have the same objective conditions (Bourdieu, 1992; Yang, 2014). To the anthropologist Jean Lave, trajectories indicate the movement from legitimate peripheral participant to fully-fledged member in a practice community with apprenticeship as the starting point (Lave, 2011; Lave & Wenger, 2003).

In this article, we apply a more recent approach that originates in socio-cultural theory and empirically considers trajectories within professions in connection with professional educations and practice in workplaces (Heggen et al., 2015), and therefore is particularly relevant here. This theoretical approach integrates different perspectives in the term learning trajectories by including a biographical aspect, educational programme, and use in a profession (Heggen et al., 2015). The approach considers how the individual develops knowledge and habits through socialisation in the education system.

The approach refers to the relationship between context and individual and how this is experienced as “learning trajectories” (Heggen et al., 2015, p. 72). Learning trajectories include different contexts: “competence and expertise are developed over time in a number of different contexts” (Heggen et al., 2015, p. 78). Heggen clarifies coherence in relation to professions:
“Coherence addresses not only the relationship between different types or dimensions of knowledge but also the interconnections between pieces of knowledge that are developed and used in different contexts, such as pre-enrolment contexts, in-class teaching and placement settings as well as professional work settings.” (Heggen et al., 2015, p. 70).

The approach distinguishes between three forms of coherence that all highlight differences in contexts such as “a driving force for learning and professional development” (Heggen et al., 2015, p. 79). The trajectories are formed in collaboration with the biographical, courses, and transformation to a profession, and different forms of coherence can be discussed: biographical, programme, and transitional coherence. Biographical coherence is about meaningful connections to previous knowledge and experiences. Programme coherence “focuses on how students experience the relationships amongst the different elements of the curriculum and on the connections between in-class education and placement experience” (Heggen et al., 2015 p. 80). Transitional coherence “examines the relationship between knowledge and skills acquired in professional education and the actual work carried out by newly qualified professionals” (Heggen et al., 2015, p. 82). Transitional coherence is both about learning in the transformation from education to the workplace and continued learning and development.

Heggen and Smeby ask “is coherence an unequivocal good, and is it certain that the most possible connection also give the best professional qualification?” (Heggen & Smeby, 2012, p. 10). Their answer is that it is possible to go too far in the desire for coherence because we are dealing with different forms of knowledge. They differentiate between consistency and coherence, where consistency is a connection free from contrast. They do not view consistency as appropriate since contrasts are an educational motivation, and since professions are in continuous development, contrasts are a part of the changeableness. “Coherence must therefore not be about giving the impression of simple connections, but that the real contrasts become exposed so that they can be evaluated” (Heggen & Smeby, 2012, p. 12).

Our starting point is empirical, based on the assumption that vocational college teachers, who have had both life and work experience, continue to learn on the basis of their biography. A VET-educated individual who returns as a VET teacher and is required to attend the teacher training course, enters specific physical and social connections at a vocational college as teacher and a dynamic exchange between a course with a curriculum, teaching, preparation, and examination tasks. In both contexts, there are social relationships with colleagues and fellow students, and the students shift between the two contexts over a number of years. We use the concept of trajectories in relation to how the vocational college teachers describe their learning through the course connected to a biographical perspective and the transformation to the vocational college.

Our analytical approach thus relates to biography, education, and transition, and we examine how the teachers in the interviews relate to questions about coherence and how contrasts and similarities in contexts affect learning, cf. trajectories.
4 Method

The article builds on qualitative data on vocational college teachers who are enrolled in the Diploma of Vocational Pedagogy. The data was collected in 2014-2017 as part of a longitudinal research project on teachers’ social and academic development as students in the course. 20 teachers participated from four different Danish vocational colleges: a technical college, a business college, a social and health college, and a combined business and technical college. The teachers analysed in the two cases are selected on the basis of a principle of variance (Yin, 2014), i.e., educational background and experience, branches and place of employment—they teach at two different colleges—and for instance how they are integrated in the community of teachers at their college. They represent the diversity among the students in the course and can thus clarify the different trajectories and differences concerning the return to VET.

Data was gathered in focus group interviews conducted in the spring and autumn of 2015, focus group interviews with managers at each college in autumn 2014 (Barbour, 2007), and documents were collected that describe each vocational college’s organisation and structure for the teacher training course, i.e., the management’s practice and intentions that influence the teachers’ trajectories. Eventually, as the teachers finish the course, their final theses are collected, and the teachers are interviewed.

The teachers have different trajectories. We specifically asked about their use of the course in vocational college teaching and more generally what they learned in the course. We show this difference in the analysis of the two cases, Ole and Kit. The interviews were transcribed and quotations revised linguistically with a view to readability (Bloor, 2001).

First, data on trajectories for the two cases was selected. The data shows that the teachers’ teaching at VET changes, and that they gain something from the course. Afterwards, the data is analysed and categorised as primarily biographical, i.e., background or changes outside the course or vocational college; aspects regarding content from an educational programme or being in an educational programme; and concerning the transition regarding which parts of the course the informants reflect, so that it can be a part of the pedagogical work at the vocational college.

5 Analysis

As mentioned, the two cases illustrate that the return to VET as a teacher may involve very different trajectories with different forms of coherence. The data shows that this is challenging but that the individual teacher copes.

The analysis is divided into three sections with reference to the themes mentioned in the theory section: biographical, programme and transition. The first section concerns biographical coherence when the teacher returns to VET as a teacher. In the programme or course section, we look at the teachers’ description of the course curriculum from the

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3Data is collected by Henriette Duch.
4The names are pseudonyms.
in the form of attention to the students’ learning and the concept of motivation, which both teachers talk about but modify for their own context. The last section are about transition and includes specific examples of transition based on how the teachers adjusts their teaching in the context of vocational colleges and thus change VET.

In short, the case about Kit describes a business college-educated woman who has chosen a vocational education rather than a higher education and basically does not wish to take the higher education programme, which a Diploma of Vocational Pedagogy is, since she believes that she is good at teaching. During the course, however, she discovers new perspectives that give rise to new approaches to teaching. Ole is employed at the technical college and does not have the same resistance to the educational programme; however, he is less familiar with attending courses and is more isolated at the employing college in terms of renewing its pedagogy.

5.1 Back to VET

This first section is about biographical coherence. Ole is in his mid-30s when he, encouraged by his previous teacher, returns as a teacher at the technical college where he was educated. He has worked professionally for nearly 20 years and explains the job change with the effects of hard, physical work and a desire for more open working hours. Ole did not prioritise secondary school when he was young, and being newly employed at the vocational college, he takes the subject ‘Danish’ at college to improve his reading skills before he starts on the teacher training course. He says that the teaching training course is of more than just professional importance. It is important for his relations in his family and for him as a citizen, because he is also developing his ICT skills. In addition, the pedagogy course challenges him in ways that he will miss when he is done. He has been a part-time student for three years in the Diploma of Vocational Pedagogy.

As a newly employed teacher, he immediately starts teaching at the workshop, but he follows a colleague’s teaching in the theory class. “I organised workshops on my own, and then I listened when he ran theory (. . . ). In short, I was thrown to the lions from the first day” (Interview). Later, he receives advice about teaching from a colleague in another department.

Kit is in her mid-30s, graduated from a business college, and is returning as a business college teacher after 10 years’ work experience, where she has been responsible for personnel, purchasing, teaching in-house courses and has taken a higher postgraduate course. She had more than five years’ teaching experience at the vocational college when she was asked about starting the pedagogy course:

“Previously, I just went in and taught and thought that I was absolutely right about what I did (. . . ). I was of course not a believer in having to do the Diploma of Vocational Pedagogy; on the contrary, I sat there and was almost crying before I had to go and didn’t want to go at all.” (Focus group interview)

She explains that she was against the course because she did not want to take a higher education; if she did, she would have chosen it herself. Instead, she wants to be with her pupils at the college.
When she finishes the course after three years as a part-time student, she has a new function at the vocational college, namely to work closely with local businesses and pupils to establish internships. In this sense, she uses her work experience in an entirely new way. Ole talks excitedly about potential new vocational challenges at the college, and in this sense there are also new possibilities in the relationship between being a teacher and the vocation that he comes from.

**The Trajectories**

Based on the above, one can conceptually say that Ole describes a trajectory characterised by a connection between the biographical starting point, the course, and the transition to the profession as a teacher. He chooses the job as a vocational college teacher because he is physically worn down and due to his working conditions, and what he learns during the course influences his private life too. The course confirms his intuitive pedagogical choices as a new vocational college teacher, and in this way, there is a connection, just as he sees new professional challenges that link to his previous occupation. Ole highlights connections between experiences and tasks in different contexts. In this way there is coherence between pre-enrolment contexts, the course and his function as a vocational college teacher.

Kit’s trajectory is different in the sense that she first notices differences between theoretical courses, which she has deliberately not chosen, and being a teacher at a vocational college. Her new job functions are an extension of her previous work experiences and thus a connection across the different contexts emerges. Kit reflects on trajectories characterised by differences, but connections reveal themselves over time and coherence occurs. Based on the two cases, it can be said that a biographical connection across contexts is found over time, even though one of the cases illustrates expectations that disputes and differences between contexts can create problems in the short run.

### 5.2 Trajectories on the Course

This section is about the course and how it connects with biography to make coherence. Kit experiences the concepts in the course as foreign, but eventually the Diploma of Vocational Pedagogy makes sense to her, and the examination assignments establish a connection between the teaching job and the pedagogical course.

“*In some of the first modules, I was about to get grey hair: what kinds of words are these, I don’t know them, and what should I use them for? I then begin to do the assignments, and it becomes more practice-based, then I can really see the connection, and then it also starts to make sense to me.*”

(Interview)

In particular, theory of science makes Kit aware of her position as a teacher; it enables her think about her subject and teach in new ways. Kit and Ole experience coherence between biography and their expectations and experiences in the course in each their way. Ole does not mention resistance and lack of connection as Kit. Instead, he talks about being confirmed:
“I think that it was nice, when you just get out of the former job and get thrown into a class and have to teach, you of course don’t have any teaching experience, and then get confirmed that some of what you have done was in fact correct seen from a didactic point of view (...) You breathe a little easier. It was great to put some concepts on it.” (Focus group interview)

Kit reflects on her formal relationship to the teacher in the course and supervision in regard to passing examinations:

Kit: [I have had] supervision meetings where I have shown her what I have done, and then she said whether I was on the right track or not.

Interviewer: What does it mean to be on the right track?

Kit: It means a lot, because then you really know.

Interviewer: What is it you want to know when you ask if you are on the right track?

Kit: Yes, well, that I’m not going to fail of course. That is really the main goal.

Kit says that she has not evaluated her work herself by looking at the courses’ learning goals, and she says that she has learnt most from the final thesis of 15 ECTS point: “I think I have learnt the most from the final thesis.” (Interview)

Ole thinks that he has developed as a person during the course by meeting new people: “That’s what I think develops you personally, that you get to meet new people. If you are open to some of the things they come with, and you yourself are stuck in the same groove, then of course you’ll learn something.” (Interview)

Ole has kept in e-mail contact with two teachers from other colleges, even though they are not always in the same class on the course. We identify two points: He finds a community in the course that he does not have at VET (see below), and he establishes continuity in a modularised course through personal relationships that he occasionally makes use of when he is preparing examination.

Summing up, Kit and Ole experience assessments and examinations in different ways. Kit’s goal is to pass the course, so the course itself is important and maybe isolated and less important for the job as a teacher even as she has found a more practically oriented coherence. To Ole the relation between the course and his personal development is important, and he seems to be connecting to a biographical dimension. The interpersonal relationships to other students as well as the confirmation also belong to this dimension.

The Content of the Course
This part of the section focuses on the relation between biography and the content of the course. The course includes a pedagogical conceptual framework, which is new to the teachers. Both teachers talk about their pupils’ learning and motivation as elements from the course, but they talk about them in different ways.
Ole highlights that he has become aware that the pupils’ learning is the most important part of the course. He works with “creating a motivated learning space for them, among other things by ‘including some ICT’” and being empathic. He says,

“I try to be empathic in my approach, be understanding and not judgemental. I hope that it will give them a good educational experience.”

If the students are passive, he talks to them, if necessary in collaboration with a pupil coach, to find the reasons: “Of course, there is a reason that the pupil is not active in class”. Ole refers to Bandura, whom he has studied during the course, in relation to not being judgemental of pupils.

Kit does not talk explicitly about teaching but rather about pupil prerequisites and motivation. She thinks that motivation is a recurring issue in all the course modules, “It is also very much what the modules are about. How do you best plan the programme for your pupils so that they are motivated in the classroom? Motivation is a word that almost fills all the modules.” (Focus group interview)

One can ask why they notice different elements from the course. All classes have the same learning goals and presumably similar content. A possible answer can be found in the relationship between the biographical and the course. Kit has chosen to teach because of interaction with pupils. She makes a connection between good teaching programmes and motivation; in other words, if the teacher plans well enough, the pupils become motivated. Motivation therefore becomes the key to teaching.

As mentioned, Ole had another reason to become a teacher. He has subsequently become aware of the pupils through his work at the vocational college and through the course, so now the pupils’ learning is central for him. He connects learning space, ICT, empathy, motivation, and Bandura, but without expanding on the theory of self-efficacy, which is often included in the course. Ole does not elaborate on how these things are connected, but for the purpose of this article the point is that he sees a connection between the different contexts. Like Kit, he has constructed a connection between something that is motivating for him: the pupils, content, and concepts from the course and the teaching job.

Our point is that Kit’s and Ole’s biographies might explain why their understanding of the content of the course differs.

5.3 Trajectories at VET: Organisational Models, Colleagues and Changing Teaching at the Vocational College

This section is about the transition from course to VET, first in connection with the management’s initiatives and ideas on organisationally connecting the Diploma of Vocational Pedagogy and VET, and afterwards in relation to Ole’s and Kit’s cooperation with colleagues at VET.

The four vocational colleges in the overall study have different initiatives and ideas about how best to support the teachers’ pedagogical education programme and get them to develop the pedagogy and college culture as the individual college would like. At the college where Kit is employed, VET teachers are supported with internal supervision on assignments for the course as a supplement to the supervision during the course, but the
long-term plan is that VET teachers with a Diploma of Vocational Pedagogy can be part of implementing the pedagogical and didactic foundation the management has defined. At the college where Ole is employed, new teachers are supported with basic teaching theory and individual supervision before they start the course, and VET teachers are taught A-level subjects such as Danish before the course. In the long term, teachers with a Diploma of Vocational Pedagogy are seen as frontrunners for college development. At a third college, VET teachers attending the course are integrated in committees and development work, and the management works to become acquainted with the professional content in the course. The long-term goal is to exploit the potential for college development in contrast to a fourth college where the management establishes control mechanisms to develop teaching. The objective is specific action rather than overall reflections by the teachers. The specific college contexts in which Ole and Kit find themselves offer organisational possibilities for trajectories that would look different if they returned to VET at another college. According to the theoretical framework, the organisational context is forming learning trajectories.

*The Colleagues at VET*

Vocational college teachers typically have colleagues who come from the same or related vocations. However, for Ole there is a contrast between the vocational aspect that colleagues respect and the pedagogical aspect: “I don’t think that there is support from colleagues (...) One of the things I kept hearing when I started was statements like, ‘Great that we don’t have to do that [the course]. Wow, that’s a waste of resources’” (Focus group interview).

Ole did not experience support from colleagues to renew the teaching: “There’s no support in our team to do new things. There is a battle (...) against new ways of teaching” (Focus group interview).

One would think that such statements about the course and renewal of teaching would decrease the interest in the pedagogical aspect, but this is not present in the data. Ole exposes contrasts between the course and possibilities at the workplace, but he continues to work with new initiatives. It appears that he sees connections between the course and the workplace, even though there is a big difference between colleagues’ opinion of pedagogy and what he learns in the course. We cannot say whether the difference between the contexts requires learning, but Ole indicates that he is continuing with his renewal. In contrast, Kit collaborates with her colleagues. She says that a colleague asked about her final thesis and borrowed her assignment. At the vocational college, those who are attending the course share notes and assignments. “I think we are really good at sharing. We have a shared drive where we put all of our things, that is, examination assignments and notes” (Interview).

In contrast to Ole, Kit does not talk about pedagogical supervision before the course but about colleague supervision in connection with her final thesis, “to correct my spelling mistakes (...) he has also been good to talk to about theory: ‘Okay, you say (...) this theory of science, you have to write who says something about it’” (Interview).

Kit thus has collegial collaboration on preparation of the curriculum in the form of notes and in relation to internal supervision of examination assignments. On this basis,
we assume that transition of knowledge from the diploma to the workplace must be easier for Kit than for Ole, but we cannot know whether the two, due to the different opportunities for collaboration, change the pedagogy at the vocational colleges to different extents or in different ways. What we know is that the conditions for collegial cooperation differ and this becomes a part of the context as a condition for coherence.

Changes of Teaching

Ole says that he is the only one who attempts to organise the special tools in the workshop at the college:

“The tools are thrown in the cupboard. You weren’t able to see whether the tools were there, and how many of them there were. If something was missing, you didn’t know about it before someone needed it. Now, there is a cupboard with pictures, where it’s written what kind of a tool should hang there, so now it takes 10 seconds to get an overview. It has taken a long time to do, but the others can clearly see that it’s good.” (Interview)

He has also scanned the technical manuals so that the pupils can get them digitally. He uses ICT to introduce new working and learning methods in the teaching. Pupils with writing difficulties can work with sounds and pictures rather than with writing alone. In this way, he works with differentiation and individual learning.

Thus, Ole reports on some specific initiatives at VET. The organisation of tools can both be about good practice in the vocation that he comes from, which the pupils must learn, and it can be about the teacher having an overview of materials and tools in teaching situations. Similarly, access to manuals can both be about how to work in the vocation and about qualifying teaching and the pupils’ learning, while ICT is directly about learning at VET. The examples show that Ole connects his work experience and teaching at VET, and that he connects the use of and understanding of ICT in relation to being a citizen in a digital society rather than only being about technology in a vocation. In doing so, he connects his biography, the course, and the transition to pedagogy at a vocational college. On the basis of our theoretical starting point, it can be said that these three things and the different contexts are in a complex relationship with each other, so the main point here is that a connection is created.

Kit also works with ICT by qualifying the use of electronic books at the vocational college, and she has become aware of how complex it is to teach the pupils vocational use of a new medium, even though young people are often called ‘digital natives’. In economics subjects, she has worked with visualisation of concepts such as VAT and tax. The pupils prepare posters that she continuously returns to, which is also a way to differentiate and involve the individual pupil’s learning. She says: “I do not just focus on the content, because then I don’t get the best out of my pupils.” (Focus group interview)

Kit argues that pupils are her starting point and visualisation allows her to embed abstract vocational concepts in the pupils’ everyday understanding and ensure continuity by returning to the posters. Through theory of science, she has discovered that she can choose other approaches to teaching in spite of a very specific vocational content. As was the case for Ole, a complex relationship between her own vocation, the course’s new
perspectives, and her teaching on VET can be seen. This raises a fundamental question of whether it would have been possible for her to work with the visual approach in her teaching without a course that changes a perhaps biographically rooted understanding of the vocation. We do not believe it would, so the course has importance for a renewed view of VET’s opportunities when the teacher returns to VET.

The analyses indicate three things. First, the cases show different organisational contexts concerning the management of the Diploma of Vocational Pedagogy and collegial cooperation. Second, the variation in contexts sets a framework for the practice at the vocational college and thereby for the learning trajectories. Third, the cases indicate renewal of the teaching at VET, but it is closely connected to biography and Diploma of Vocational Pedagogy.

6 Conclusion and Discussion

The analysis shows that the teachers’ biographies have an impact when they return to VET, both in relation to their motivation for the course and in relation to finding meaning in the course. It challenges their views of the pedagogical possibilities in VET, which appear to be a motivating force in their teaching that wins over Kit’s resistance and makes Ole seek new challenges. Connections are created across different contexts: one in relation to the Diploma of Vocational Pedagogy’s curriculum and the meeting with other VET teachers at the course; one in relation to the college models and collaboration opportunities with colleagues at VET; and one in relation to development of VET and very diverse, specific initiatives.

The fact that the two teachers move between different contexts does not prevent learning, but does it improve learning? We can say that the argument that a connection between theory and practice depends on great similarities or recognisable elements is not a condition in the cases. On the contrary, complicated relationships and connections between the biographical, the course, and teaching at VET create learning in ways that could not have been predicted, either as a need in VET or as an opportunity for the individual teacher.

The analysis causes us to consider whether there is an opportunity in the course to didactically ‘design’ other trajectories and whether there is an opportunity in the course and at the individual vocational college to support the individual teacher’s learning, even though organisational models, collegial resistance or collaboration do not appear to ensure or prevent transition.

Even though we have not specifically asked about the relationship with the teachers’ vocational education, it appears that it is the biographical starting point from where they are speaking, and that both, because of new (potential) tasks at the vocational college, maintain relationships with the vocation as a teacher. Ole makes a distinction between teaching theory and teaching in the workshops, where the challenge as a new teacher is described in particular relation to the former. However, it cannot be said that the Diploma of Vocational Pedagogy is used differently in the two types of teaching, but Ole’s renewal of the vocational college concerns organisation of tools and pupils’
access to teaching aids in addition to pedagogical initiatives in learning, motivation, and differentiation. Kit learns from theory of science that she can approach her vocational subject and thus teaching in other ways, including work with motivation, visualisation, and electronic teaching aids.

The teachers’ pedagogical development is therefore linked to different trajectories that reveal themselves in the field between the biographical, the course, and VET, also when the contexts differ. The two cases show that coherence can certainly arise without homogeneity, but on the basis of heterogeneity when teachers return to vocational college. Finally, we will discuss whether, through such trajectories, a sort of loss in relation to the teachers’ vocationalism can occur. In other words, does the course take the teachers to another place than the vocational college. On the one hand, the analysis shows that the trajectory continues to be rooted in the vocation, but while Ole’s colleagues emphasise that vocational courses are more important than a Diploma of Vocational Pedagogy, they do not, according to Ole, exercise traditional craftsman virtues such as keeping the tools in order, teaching the pupils to do it, and ensuring electronic access to manuals. Ole works with these tasks, which are closely connected with the vocation, based on the pedagogical approaches he encounters in the course. It appears that the course affects the ability to work pedagogically with knowledge from the branch as a teacher at VET.

We may ask whether Kit and Ole become more theoretical because of an education at level six in the qualification framework, but the data suggests that they transform the curriculum from the course to teaching at their vocational colleges and thus the particular learning context. Their references to the curriculum are specific when Bandura is mentioned, while the concepts of learning and motivation, which are used in the cases, appear to be understood very broadly. In this sense, the teachers modify the knowledge from the course to VET and the local need for pedagogical development. On a general level, the analysis raises the question of how, in a curriculum or in a vocational college as an organisation, one would be able to take account of what is needed pedagogically in the specific context at VET, and which relations and collaboration opportunities support the individual’s trajectories. Our answer is that it requires knowledge of the individual VET teacher’s biography and contexts. However, we do not doubt that the teachers’ newly acquired experiences being in a course affect how they pedagogically meet and understand pupils at VET who in a similar way are enrolled in courses.
References


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Short-Term Benefits, Long-Term Harm? Alternative Training to Apprenticeships in Norway

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Abstract: Many countries with apprenticeship-based systems of VET face a shortage of apprenticeships. Some countries, including Denmark and Norway, address this supply-demand mismatch by offering alternative school-based routes to vocational qualifications for students not able to secure an apprenticeship. Other countries offer no alternative routes, but focus instead on pre-vocational education and training to prepare students for apprenticeships. This paper discusses the effects on the VET system of a recent Norwegian attempt to organise alternative training primarily as workplace training. Unlike the more established Danish system of alternative training, which relies primarily on school-based training in learning centres, Norway has attempted to make alternative training as similar to apprenticeship-based learning as possible. Most training in the pilot projects takes place in the work environment of a company, rather than in vocationa schools. Our paper shows that the students in the pilot projects experience many of the learning and motivational benefits offered by workplace learning in general, and apprenticeships in particular. In certain circumstances, such schemes can improve the chances of completing VET despite for young people without an apprenticeship. However, such training schemes also generate important dilemmas. In particular, there is a risk that full-scale implementation of a system of alternative workplace-based training could reduce the number of new apprenticeships, potentially undermining the apprenticeship model on which Norwegian VET is based.

Keywords: VET, Vocational Education and Training, Dual System, Workplace Education and Training, Apprenticeship Contract, Education and Training System, Educational Policy, Learning Motivation

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1 Introduction

Apprenticeship-based systems of VET, such as those in Denmark, Germany, Luxembourg, Switzerland and Norway, depend on a balance between the supply of and demand for apprenticeships (see e.g. Busemeyer & Schlicht-Schnälzle, 2014). However, many countries face or have faced a shortage of apprenticeships. The countries differ in their response to this challenge. In some countries, preparatory, ‘pre-vocational’ courses are offered to aid individuals in obtaining an apprenticeship. In other countries, alternative routes, leading to the same vocational qualification as an apprenticeship would, are offered.

In Germany, there are no alternative routes to the vocational qualifications, and the result has been that young people have had to wait before completing upper-secondary education (Walden & Troltsch, 2011, pp. 305-306). They are instead offered preparatory courses in the so-called ‘transition system’ to gain the necessary skills to obtain an apprenticeship. Through this policy response the unique status of apprenticeships is maintained. Nevertheless, the effectiveness of such pre-vocational training has been questioned (see e.g. Busemeyer & Iversen, 2012), Generally, the transition system does not provide formal vocational qualifications that give a basis for entering the labour market. Mainly it serves a buffering function, providing a ‘waiting loop’ for students unable to secure apprenticeships, but a considerable number of students never ‘transit’ to apprenticeships (see e.g. Solga, Protsch, Ebner & Brzinsky-Fau, 2014).

However, in other countries, including Denmark, Norway and Austria, there have been attempts to address supply-demand mismatch by introducing alternative routes to vocational qualifications for those unable to obtain an apprenticeship. These routes are alternative routes to the same qualification; students in alternative training register for the same trade examination/test as apprentices. The exclusive nature of apprenticeship-based dual collective training systems conflicts with a view of education where education is increasingly a right of the individual. Providing an alternative for students not able to secure an apprenticeship can, from this perspective, be seen as a step towards fulfilling that right and preventing exclusion. In both Denmark and Norway, young people who have completed lower-secondary education have a statutory right to upper-secondary education, either academic or vocational. However, the Danish and Norwegian way of organising alternative training differs.

The Danish system of alternative training is primarily school-based, with training centres responsible for providing alternative training. In Norway, alternative training has been organized in different ways in different counties, but in a recent attempt to reorganize alternative training, the training has primarily been delivered as workplace training in companies. In this paper, we use data from the Norwegian case to explore students and others experiences of alternative training organised mostly as workplace training. We then discuss potential system effects of this form of alternative training. First, we analyse whether this way of organising alternative training affects students’ learning, motivation and completion. We ask: is there evidence to suggest that organis-

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1Our data was compiled too early to examine the students transition into the labour market.
ing alternative training to apprenticeship as work place training will lead more youths to complete vocational upper secondary education? Second, we analyse whether this way of organising alternative training might undermine commitment to the apprenticeship model and reduce the number of apprenticeships, by weakening companies incentives to provide them. In the final section, the Norwegian case is contrasted with the Danish way of organising alternative training to highlight important elements that affect the system effects.

2 Alternatives to Apprenticeships

In this section, we describe existing research on alternative training to apprenticeships, which as far as we are aware, is limited to Denmark and Austria, in addition to our own research on Norway. This research addresses how alternative training affects the individual student (learning, motivation, outcomes), but also, to a varying degree, the system-level effects of introducing alternatives to apprenticeships in countries with apprentice-based dual collective training systems. We concentrate on the Danish and Norwegian cases, as they are distinctly different. In the section thereafter, we draw on the more general literature on workplace learning and collective skill formation to discuss theoretical expectations of how organising alternative training may influence the VET system.

2.1 Alternative Training in Denmark

In Denmark, a school-based alternative (‘skolepraktik’) has since 1991 been offered to students who cannot find an apprenticeship. Commencing as a temporary measure, it quickly became a permanent alternative (Juul & Jørgensen, 2011; Jørgensen & Juul, 2009). From 2013, the Danish school-based alternative has been more strongly institutionalised with the establishment of special training centres (‘praktikcentre’). Most are run by upper-secondary schools, and provide alternative training as their main task. The placement in the training centre is meant to be temporary until the students find an apprenticeship. An early evaluation of the centres suggests that alternative training has become more visible and attractive to vocational students (Dannmarks Evalueringsinstitut, 2015), but there is not yet any statistical analysis to support that claim.

Alternative training in Denmark has been, and continues to be, primarily school-based, with much practice work taking place in the schools workshops. Parts of the training are provided in companies as workplace training (‘virksomhetsforlagt undervisning’, VFU), but the workplace training is limited in time and scope, for instance, by the requirement that students should not participate in production. The rationale for these restrictions is to avoid competition with apprenticeships. The same applies to the requirement that students must have tried to secure an apprenticeship before they can apply for a place in the alternative system. From the outset, there has been a debate about the possibility that alternative training could undermine the dual collective training system. There is

\footnote{Readers interested in the Austrian case may look to, for instance, Bergmann et al. (2011) and Lassnig (2011).}
a dilemma that alternative training needs to be of sufficient quality to bring students through, but not so attractive that it competes with apprenticeships.

Juul and Jørgensen (2011) found evidence that there is potential for learning in the school-based Danish alternative that is not found in a workplace-based model. There is more room for reflection and mistakes, and the training can be planned in accordance with the individuals learning needs (Juul & Jørgensen, 2011, p. 296). There is also more time for the students to gain theoretical knowledge in conjunction with the development of their practical skills. The school-based alternative education is, however, not without its challenges. Students do not develop the same social skills and work discipline as they would in a work environment, nor do they experience the gradual socialization and adoption of norms that comes from participating in a work community (Juul & Jørgensen, 2011, p. 296). Thus, they miss out on the benefits of workplace learning (see e.g. Illeris, 2011). Also, although they might do minor commissioned work, mostly they do not produce goods and services that a customer is going to use, which reduces student motivation. Juul and Jørgensen (2011) note that employer resistance to alternative training was more related to the lack of socialisation into a working life culture than to a lack of vocational skills. They also note that there is (or at least was in 2011) a broad consensus on the advantages of the dual collective training system. Both employers and government see school-based training as second best to apprenticeships (Juul & Jørgensen, 2011, p. 300).

Although alternative training is a minor element in the Danish education and training system, it is more than a marginal phenomenon. According to figures from the Danish Ministry of Education, about 11 percent of those in vocational upper-secondary education in September 2016 were registered as students in school-based alternative training. Since 1991, that figure has fluctuated with the situation in the training (and labour) market. Research on the Danish system of alternative training has shown that students in alternative training have a more disadvantaged socio-economic background than apprentices. Furthermore, they fare worse after graduation than apprentices, with lower employment rates and a more volatile position on the labour market (Jørgensen & Juul, 2009).

2.2 Alternative Training in Norway

Apprenticeships play a central role in the Norwegian VET system. The number of new apprenticeships each year is currently around 19-20,000, which amounts to almost 30 percent of a yearly birth cohort. Most initial vocational education and training follows the so-called 2+2 model, where two years of school-based training are followed by a two-year apprenticeship. The regional county administrations are responsible for fulfilling the individual’s statutory right to upper-secondary education, including providing the two years of school-based vocational education. The county administrations are also responsible for providing alternative training in the third year if the student is unable to secure an apprenticeship.

There is little formal regulation of alternative training, apart from that it must last at least one year. As a result, alternative training has been organised differently in different
Aspøy, Nyen

counties and in different trades. As in Denmark, alternative training in Norway has been regarded as second-best to apprenticeships (see e.g. Meld. St. 20 (2012-2013); Aspøy & Nyen, 2015). Alternative training has generally not been marketed to students and has had low participation and completion rates. About 30 percent of all vocational students who apply for an apprenticeship fail to secure one after two years at vocational school. However, only a few of those participate in alternative training. Only 3 percent of all trade certificates in 2014-2015 were achieved by students in alternative training, mostly due to low participation rates.

Previous research on the organisation and outcomes of alternative training in Norway is limited. Nyen, Skålholt and Tønder (2013) found employment rates one year after graduation to be lower among students from alternative training than among apprentices (although the differences are small). Furthermore, government statistics show a significantly lower completion rate among students in alternative school-based training than among those with apprenticeships. Aspøy and Nyen (2015) find that participants in alternative training have lower school achievements and have been more absent from school than those who were able to secure an apprenticeship. When analysing the sub group who have applied for an apprenticeship, but failed to secure one, participants in alternative training typically have a medium level of school achievement. One interpretation is that the high achievers look for better options because of the low esteem for alternative training, and that low achievers are difficult to reach and drop out.

From the autumn of 2013, five Norwegian counties received a government grant for experimenting with improved alternative training for students lacking apprenticeships. The background for the initiative to reorganise alternative training was the existing system’s lack of appeal to young people, its low esteem in the labour market, and poor participation, completion and transition rates. Efforts were made to make the school-based alternative more similar to apprenticeship-based learning. The guidelines for receiving a government grant stipulated that the alternative training must last at least 18 months (longer than the standard one-year minimum duration), and that a substantial amount of the training should take place in the work environment of a company. The workplace training must also be planned in cooperation with representatives from local businesses, employer organisations or training offices (which are jointly owned by a group of businesses).

Workplace training was emphasised because of the perceived weaknesses of more school-based forms of alternative training. Students in school-based training did not have the benefit of participating in a professional work community, nor were they exposed to basic workplace norms/socialisation. Furthermore, students with poor school achievements and high absence rates were often tired of school, and not motivated by more school-based education and training.

It is important to note that the legal status of students in alternative training in Norway is very different from that of apprentices, as Table 1 shows. While apprentices are employed by the company and receive a wage stipulated in a collective agreement, a student in alternative training is not employed and receives no wage. Some companies in the pilot project decided on their own initiative to pay students a wage, but they were not expected or required to do so.
Table 1: Apprentices vs. students in alternative training (at a workplace) in Norway

<table>
<thead>
<tr>
<th></th>
<th>Apprentices</th>
<th>Students in alternative training</th>
</tr>
</thead>
<tbody>
<tr>
<td>learning venue</td>
<td>Workplace</td>
<td>Workplace</td>
</tr>
<tr>
<td>Employed</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Receives a wage</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Has a training contract</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Barriers for dismissal</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Responsible for progress</td>
<td>Company</td>
<td>School</td>
</tr>
<tr>
<td>Responsible for assessment</td>
<td>Company</td>
<td>School</td>
</tr>
<tr>
<td>Company must be certified as training establishment</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

3 Potential Effects on the Collective Training System

Apprenticeships are (part of) a collective training system based on a combination of school-based and workplace-based learning. In this section, we discuss potential effects of introducing different forms of alternative training on the collective training system. We draw on two strands of literature, first the research on learning in the workplace, and second the literature on collective skill formation and institutional change.

3.1 Workplace Learning and School-Based Learning

Existing research suggests that organising alternative training as mostly school-based has different merits to organizing alternative training as mostly workplace-based. The Norwegian case offers the opportunity to analyse the consequences of organising alternative training mostly as workplace training.

There is a substantial body of research on workplace training as part of vocational education and on the integration of school-based learning and workplace-learning (Colley, James, Tedder, & Diment, 2003; Fuller & Unwin, 2004; Illeris, 2011). The benefits of workplace training for vocational learning are well described in the literature. Colley et al. (2003) describe learning as becoming; as a gradual, identity-shaping process of becoming a skilled worker. Learning takes place by performing real work tasks, in a work context where the skills are actually used, and by receiving feedback and perhaps even recognition from experienced skilled workers/members of the work community. These social aspects of learning are difficult to emulate in the schools workshop. On the other hand, school-based training offers more time for theoretical reflection, without the pressure of production (Juul & Jørgensen, 2011). It also offers a greater opportunity
for trying and failing. In a school setting it may also be easier to plan education and training according to a set of goals (curricula) that cover the relevant aspects of the trade, than in a company where production places certain constraints on training.

Workplace training offers different types of benefits. First, there are the benefits related to learning the trade, or trade-specific skills. Second, there are benefits of learning certain extra-functional skills, such as ‘good work habits’ and the ability to show up on time, cooperate with others, work under stress etc. (Streeck, 2012, p. 325). Existing research suggests that organising alternative training as workplace training, to a greater extent than school-based training, might allow for the learning of general workplace norms (‘extra-functional skills’) and for integration into a trade community (learning trade-specific norms).

3.2 Actors and Interests Within a Collective Training System

While organising alternative training in the workplace may have its merits and shortcomings from a learning perspective, introducing alternative training may also have system effects beyond the effects on the individuals learning, motivation and completion. Collective training systems such as apprenticeships are fragile institutional arrangements (Busemeyer & Trampusch, 2012, p. 4). Path dependency in the form of cognitive and normative constraints and cost-benefit considerations may preserve existing arrangements to some degree, especially by keeping employers committed to the collective training system. However, such arrangements depend on a delicate balance of interests, and the continued commitment of companies, associations and the state. Historical institutionalism sees institutions as legacies of previous power struggles between actors with partly shared and partly conflicting interests. In a dynamic, historical institutional perspective, the current institutional structure does not only constrain actors, but also influences what strategies for institutional change the actors may choose (Thelen, 2010). Such changes can happen through reform or through gradual institutional change. In the case of a collective training system, all actors may pursue other options, which is what make such systems fragile and can cause them to falter. In particular, companies may opt out of the collective system. Ryan (2001) argues that companies remain committed to the apprenticeship system through a combination of rational company behaviour (if wage differentials are smaller than the productivity difference between skilled and unskilled labour) and regulation/collective action by associations and the state. External monitoring of skills is one of the most important regulatory aspects as it provides credible commitments to training which (also) allow companies to offer a lower wage in the training period (Dustman & Schoenberg, 2012).

Apprenticeship schemes exist also in countries that cannot be characterised as having a collective skill formation regime. While such schemes are not similarly embedded in a collective governance system and usually play a lesser role in employers’ recruitment strategies, such schemes also rely on companies willingness to offer apprenticeships. Although our interest in alternative training comes from an interest in how it influences collective (and hybrid) training systems, our discussion about incentives below applies to all situations where apprenticeships and qualifications acquired through apprenticeship
play a role for recruitment into the relevant labour market.

Introducing alternative training to apprenticeships alters the set of options available to companies and other actors the collective training system relies on. Companies might reassess their participation in the system. If alternative training takes place in schools, the companies may be content to let the schools take responsibility for the training. If alternative training takes place mostly in the workplace, the companies will face a choice of whether or not to take in students as workplace trainees. The capacity of companies to provide training is limited. Alternative work-based training schemes may cause displacement effects by reducing the companies’ demand for apprentices, especially if students are unpaid while apprentices command a salary. A number of other factors will influence these decisions, including the ‘quality’/trainability of trainee students compared with apprentices, the company’s motivation for offering apprenticeships in the first place, and how quickly a student or apprentice can become productive within the trade. The effect on the collective system as a whole of such company decisions will of course depend on the size and scope of the alternative training scheme, as well as the supply-demand balance in the relevant parts of the labour market.

Furthermore, other actors may also be influenced by the existence of alternative training. Students may put less effort into securing an apprenticeship if they know that alternative training will be provided. Counties and schools might also more easily settle on organising alternative training instead of putting in the extra effort to help students secure apprenticeships. Generally, the existence of any alternative to apprenticeships has the potential to undermine ownership of and support for the dual collective training system and adversely affect the supply of apprenticeships (Juul & Jørgensen, 2011). However, the effect of alternative training on the collective system is likely to be dependent on how alternative training is organised. The workplace based alternative in Norway seems more likely to have adverse effects on firms’ incentives to provide apprenticeship than the school based alternative in Denmark, as firms in Norway have the option to take unpaid students in alternative training instead of offering apprenticeship.

4 Data and Methodology

The empirical part of the paper is based on the authors evaluation of a set of Norwegian pilot projects providing alternative training for young people unable to secure an apprenticeship (Aspøy & Nyen, 2015). The projects were run in five counties in Norway. The training began in the 2013-2014 school year, and continued into 2014-2015, with 243 participants. The small-scale nature of the scheme means that large-scale system effects are not likely to be observed. Instead, inferences will be drawn from the effects on various actors’ incentives and motivation to participate in the project. Data used in the evaluation of the Norwegian projects consist of qualitative interview data supplemented by quantitative data on completion/dropout.

Qualitative interview data were collected from all five counties. Two to three schools were selected as cases within each county, giving a total of eleven schools. Training took place over 18 months, and interviews were made in two rounds, during the first
and last six months of training. 51 students were interviewed in the first round, and 27 from the same pool of students in the second. The students interviewed came from different schools, regions and VET programmes. The interviews in the first round were face-to-face interviews lasting around 30 minutes. The students were asked about their choice of trade, about their efforts to find an apprenticeship, and the reason behind accepting the alternative training. They were also asked to describe their tasks and how they perceived the quality of the training, their work conditions and what support they received from teacher and company. The second round interviews were conducted by telephone, and lasted around 20 minutes. The students were then asked to describe how their training situation had developed since the last time. Had they obtained the trade certificate, or were they planning on doing it soon? In addition, we interviewed a number of teachers (22), school and project administrators (16), companies (16) and training offices (6) involved in the planning and implementation of alternative training for the students interviewed. We also interviewed county administrators (18) and leaders of regional tripartite bodies (4). Teachers were interviewed in both rounds, first face-to-face, and in the second round by telephone, all lasting around one hour. Project administrators were also interviewed in both rounds, by telephone, with a duration of around 40 minutes. The main themes of all of these interviews were the planning and implementation process, how various parties were involved, how training was organised, their motivation to participate and how they perceived the quality of the training. The companies were also asked about their policy on taking on apprentices. The qualitative material covers two thirds of the schools involved in the projects. Although our study is qualitative, we wanted to ensure that most segments of the student population and participating companies were included.

All interviews were recorded and transcribed verbatim, and all interviewees, with the exception of the county administrators and leaders of tripartite bodies, were anonymised. The interview data was broken down to different themes. Patterns and exceptions in the material were thoroughly identified and coded. The selection of students may be a source of bias, as teachers helped us recruit students, and voluntary participation led to a degree of self-selection in both the first and second rounds. Any bias would probably be towards a more positive student assessment of the projects. Selection bias is negligible in three of the eleven cases, as almost all students were interviewed. On the employer side, selection bias may be more significant, as interviews were difficult to arrange and several companies were not interviewed. Any employer bias would likely be towards the employers who are most interested and engaged in helping young people. Quantitative data about completion/dropout within the projects were reported by the project administrators in the counties to the research team in reply to a questionnaire. These data are considered valid and reliable, with clear definitions of various outcomes.

5 Results of the Norwegian Pilot Project

In this section, we first discuss whether organizing training in the workplace gave students a better chance of obtaining a vocational qualification. The interviews revealed that the
alternative training did yield a partly positive outcome at the individual level (Aspøy & Nyen, 2015). Completion data shows that for some students (27 percent), the training period worked as intended from the education authorities’ point of view: the student received the necessary company-based training for taking the formal exam and obtaining a trade certificate within 18 months. For other students (18 percent), the trainee position (student in alternative training) transitioned into a regular apprenticeship after some time, normally three to five months. In these cases, the possibility of an apprenticeship contract was signalled by the employer from the beginning. In other words, nearly half of the students managed to obtain vocational qualifications or use alternative training to transit to an apprenticeship. Nevertheless, 40 percent of the students quit the training programme. They either failed to find a trainee position, or they left the company before completing the programme.

Lack of success can generally be traced back to difficulties finding relevant trainee companies, and the confusing distribution of responsibility between teachers and employers. In some cases, training companies did not have a clear training plan or even relevant training opportunities. As opposed to apprenticeship training, schools were responsible for the follow-up of student training. However, this was not always well organised. Teachers often lacked experience with the content of apprenticeship training, as this part of the curriculum was not a part of their ordinary responsibilities. A lack of motivation also became an issue when students experienced the absence of pay as problematic. In the following section, we discuss, in more detail, the reasons why workplace training led to a successful outcome in some cases, but not in others. Further, we examine whether this way of organising alternative training might undermine commitment to the collective, apprenticeship-based training model on which Norwegian VET is based, and reduce the number of apprenticeships, by weakening companies incentives to provide them.

5.1 Workplace Learning Equals Individual Success – or Failure?

Workplace training formed a core in the pilot project. This was considered imperative among all actors involved. In many cases, students experienced this workplace training as valuable and learning-intensive. The training was generally highly individualised, meaning that the ratio of school-based learning to workplace training was adapted to fit the student. Most students in the pilot project participated in workplace-based training, and most students spent more than half the time in companies. A typical ratio of school-based and company-based training was three days a week at the company, and two days in school. Often, however, the students were allowed to spend almost all their training in the company.

The school was responsible for the follow-up of the students during workplace training, and only in a few cases did the company take responsibility for every aspect of the training. Despite this, the interviews revealed that the students in alternative training often felt like regular apprentices. Often, but not always, positive learning experiences and the general well-being of the student in alternative training seemed to be directly

3Except in one case of a company-in-school-model for a group of IT students.
connected to the notion of being a ‘normal’ apprentice. A student illustrates the feeling of belonging, where the only perceived difference was that she did not get paid:

*I’ve never been an apprentice, so I don’t know what that’s like. But it’s almost the same. But you work two hours more, and you get paid [when you’re an apprentice], that’s the only thing. I feel like everyone else.*

Some students also emphasised the benefits of a combination of school-based and workplace-based training. A healthcare student explained how the time spent in school allowed her to work on her mandatory records during the day, with advice from teachers. In her opinion, the regular apprentices had it harder as they had to do this work in addition to a full-time job. In this cases, thus, success was linked to workplace training but also the training that deviated from regular apprenticeship training. In another case, training for industrial machinery mechanics was organised under the responsibility of one single company. The students enjoyed thorough follow-up by the advisors at the company. Their training had similarities to that of the apprentices in the same company, but it was more centred on training in the workshop than training at the factory plant. This way of organising the alternative training was highly beneficial to the individual student, and the quality was praised by the students themselves as well as the company and the school where the students were formally registered. The company was an experienced training company. In both of these cases, the students knew that they were treated differently to the apprentices. Nevertheless, they experienced the benefits of being fully included in a workplace. Success of workplace training did not, therefore, depend fully on the student feeling like an apprentice or being assigned real work tasks, but on the experience of being trained within a ‘real’ company by ‘authentic’ skilled workers, and feeling included in the work environment.

The alternative training scheme was, structurally speaking, located in a grey area between school and work, characterised by a lack of clear rules, responsibility and general knowledge about what alternative training entailed. While the legal rights of both apprentices and regular school students are formalised and clear, the rights for students in workplace training are not. Despite their formal status as ‘students’, the participants are neither regular students nor apprentices. This ambiguity sometimes led to both confusion and frustration for students as well as teachers and employers, even when students were given the same tasks as a regular apprentice. The responsibility was to a great extent left with the schools, and even the individual teachers. Many of these teachers had no previous experience of apprenticeship training, as their domain is normally the two school-based years. Employers, on the other hand, were sometimes uncertain of their own responsibility.

Many students experienced not getting paid as highly problematic. For some, this was first and foremost related to pecuniary loss, as described by this healthcare student:

\[\text{However, the costs of the training exceeded the nationally-allocated resources.}\]
It’s just that there’s no opportunity to get paid. We do the same as those with an apprenticeship contract, five days a week, but we get nothing. I find it a bit hard. We have rent, electricity, I have a car – I’m thinking that I have to sell it.

A full-time job as a trainee left the student with little time for part-time work. Full-time trainee work combined with paid part-time work did occur, however; for instance, in the curious case of a student who worked without pay at a grocery store during weekdays, and as a regular paid employee at the same store on Saturdays. Although making students perform unpaid labour clearly is morally dubious if they do productive work, the students themselves did not necessarily question the ethics of their training – some of them claimed to be content with their situation. Thus, in order to achieve success within the goals of the project, the students had to be integrated in the work community without experiencing not getting paid as a stigma.

The benefits of workplace training presuppose that the learner is integrated into the workplace environment, and that he or she learns both the trade itself and some crucial extra-functional skills (Juul & Jørgensen, 2011; Streeck, 2012). Some of the interviews with teachers, however, indicated a somewhat simplified conception of the benefits of workplace training. For some, the importance of workplace training was not only a question of the many benefits of being part of a work community, but rather of not being at school. This is illustrated by a teacher who reflected on the idea of organising a merely school-based alternative for a group of students of whom many are tired of school. When contrasting workplace learning to school-based learning, she stated:

To me, organising this [alternative training] at the school’s premises just wasn’t right. These are students with a lot of absenteeism; they have struggled in school and sort of muddled through. The last thing they want is to spend another year in school.

As much as this understanding seems reasonable, the emphasis on not being at school, meddled with the emphasis on any kind of workplace training as intrinsically good can result in unintended consequences. In some cases, students did not get to perform relevant tasks. A student explained how he felt that the training he received was inferior to that of the apprentices:

A trainee student cannot get the same competence-based jobs unless he’s an apprentice. You have to learn how to be independent and think for yourself and stuff like that, but if I go on as a trainee student, they will keep handing me the same tasks. And that won’t teach me anything.

In other cases, the aim of job experience completely outweighed the aim of relevant work and the social skills and work discipline – the extra-functional skills displaced the aspect of actually learning a trade. This was illustrated by an IT student who had, when a trainee slot in an IT company proved to be hard to find, been sent to work for a company where his main task was pulling cables. He stated the following:
I don’t understand why it was so important that I worked for a company that had nothing to do with IT.

To this student, the benefits of the trainee position were unclear. To sum up, the trainees’ tasks were sometimes less learning-conducive than the apprentices’. If organised in this manner, it is doubtful that students having completed alternative training would be as attractive as regular apprentices on the labour market, and they might not acquire the necessary competence to obtain the trade certificate. However, the interviews also provided examples of alternative training of a higher quality.

In this section, we have discussed whether the Norwegian pilot projects provide evidence to suggest that organising alternative training in companies has system benefits when it comes to students’ learning, motivation and completion of alternative training. The evidence is mixed, with different experiences. The chances of a successful outcome are seemingly higher where there are companies willing to take on a level of responsibility for the trainee student close to the level of responsibility companies take for apprentices.

5.2 Actors and Interests in the Pilot Project

In this section, we discuss whether our findings suggest that alternative training will have long-term effects on companies’ decisions to take on apprentices. We also consider how schools’ efforts in securing apprenticeships for their students may change if workplace-based alternative training expands.

In what ways can such alternative training influence employers’ decisions to take on apprentices? Will the existence of an alternative training scheme weaken companies’ incentives for offering apprenticeships? Looking at reasons why employers take on apprentices in the first place, and how they differ according to trades’ and companies’ apprenticeship tradition, may help us understand how alternative training could affect employers’ decisions to take on apprentices. The Norwegian pilot projects suggest that introducing alternative training in companies might have different effects in industries where apprenticeships are well established compared to industries where apprenticeships are less embedded.

A survey from 2012 showed various reasons why companies in Norway take on apprentices. Companies receive state subsidies for each apprentice, which is regarded as a significant incentive. But also the recruitment of new employees, preserving the trade, and social responsibility are important reasons why companies in Norway take on apprentices. The recruitment reason is less prevalent in health and social care, hotels/restaurants and retail (Høst, Skålholt & Nyen, 2012). Apprenticeships are weakly embedded within health and social care, retail and the service sector in general in Norway (Nyen & Tønder, 2014). In the public sector, the decision to take on apprentices is usually made higher up, at the political decision-making level. Within healthcare, for example, there is no scope for a local nursing home to take on more apprentices than the number stipulated by the relevant authorities (Høst et al., 2012).

The reasons why companies take on students (in alternative training) overlap to a great extent with reasons why companies take on apprentices: recruitment and social responsi-
Alternative Training to Apprenticeships in Norway

bility (see also Leemann & Imdorf, 2015). The interviews with employers revealed three different reasons for taking on students in alternative training: 1) social responsibility 2) recruitment via transition from alternative training into apprenticeships, 3) recruitment, but not necessarily through apprenticeships. Employers representing trades with longer apprenticeship traditions expressed a greater normative commitment to the apprenticeship system, and some explained that recruitment via apprentice contract was their motivation to participate. To some training companies with a tradition of taking on apprentices, keeping a student as unpaid labour was unheard of. Two employers expressed their concerns on this issue. They both represented an industry with a long apprenticeship tradition – construction. Their main concern was the risk of creating an “A team and a B team” among young people undergoing training. In effect, however, the trainee period functioned as a trial period, giving the employers the opportunity to test a potential apprentice before committing to an apprenticeship contract.

An employer at a data electronics company saw the benefit in offering the student an apprenticeship contract after a trial period, because they would then be more in control of the training content. This employer did not have other apprentices:

As long as we’re in control of the [apprentice’s] development and training, it [offering an apprenticeship contract] works to our advantage.

An apprenticeship was thus considered ideal in terms of future recruitment. An employer in a large manufacturing company, on the other hand, clearly stated that taking on apprentices was their first priority, but in addition, that they also considered it their social responsibility to offer quality training through the alternative training system. This company had a clear apprenticeship profile.

In other cases, employers took on students in alternative training without any intention of offering them an apprenticeship contract, but still with the idea of future recruitment in mind. This was illustrated by a teacher talking about a student within media graphics, who had found a trainee slot in a newly-started e-design company:

Teacher: “There are few apprenticeships within the trade [media graphics artist], and everything worked perfectly with this company. So... he’ll be offered a job there after completion.”
Interviewer: “Why wasn’t he offered an apprenticeship contract?”
Teacher: “They didn’t have the money.”

This illustrates how the supply of trainee students may hamper companies’ motivation to take on apprentices, even when recruitment of new workers is the goal. An important question is how employers perceive the students without an apprenticeship. If they are seen as a challenged group in the eyes of the employers, they might be less attractive as labour. Both employers and training offices, however, stated that students without an apprenticeship may just have been unlucky, due to a shortage of apprenticeship slots, and could still be good workers.

The example of a student working without pay in the grocery store during weekdays but as an employee during weekends, mentioned earlier, is a clear case of a student whose
training resembled productive work more than actual training. Especially in the retail sector, where trainees can become productive quickly, there is a risk of the student ending up as unpaid labour. Whether the training scheme entails unpaid labour in disguise or actual training, is a crucial matter. Productive unpaid labour may be attractive labour, which could in turn undermine companies willingness to take on apprentices. In public healthcare and retail stores belonging to chains or franchise agreements, the decision to take on apprentices was generally made at an upper-management or political decision-making level. The limited autonomy of the individual enterprises allowed them to take on an unpaid student, but not a paid apprentice. The teacher interviews suggest that in many cases, convincing companies to take on student trainees could at times be easier then convincing them to take on an apprentice. To be able to take on an apprentice, the company must be registered as an apprentice company, entailing some formal prerequisites. In most cases, there was no such requirement for the alternative training. It is not unreasonable to expect that this could weaken the continuous efforts in Norway to recruit new apprenticeship companies and to expand VET into the service sector.

6 Discussion and Conclusion

This paper asks: what are the effects on the dual collective training system of offering alternative training organised mostly in the workplace? There is an obvious dilemma here which our Norwegian case illustrates well. Using the workplace as a learning venue can under certain circumstances have positive effects on student motivation and completion compared to school-based training, although the evidence on that account is mixed. On the other hand, the study indicates that workplace-based alternative training may weaken companies’ incentives to provide apprenticeships. Some employers may decide to take on students in unpaid, alternative training posts instead of offering them apprenticeships. Alternative training has the potential to alter collective training institutions by gradual ‘micro’ decisions, as companies may opt out of the collective system, or never enter. In the short run, it is more likely to happen in industries where the normative commitment to the collective system is low initially, for instance retail trade, which in turn may hamper efforts to expand apprenticeships into the service sector. In industries with a stronger commitment to apprenticeships, companies may use alternative training as a ‘trial period’ for considering whether to offer an apprenticeship. Our study suggests that negative incentive effects will differ between industries, depending on how deeply apprenticeship is rooted and how fast a student/apprentice can become productive.

The above dilemma is recognised by the national stakeholders and influences attempts to re-organise alternative training in Norway. The stakeholders have hesitated to create a fully-fledged alternative to apprenticeships because the main model with apprenticeships, although not flawless, is generally regarded as the best model. In order to not compete with the main model, alternative training has had to be somewhat of a second-best pathway, but at the same time, decision-makers have wanted to include the most important factor of the dual collective system: the workplace-based training. A con-
sequence of avoiding institutionalising is local, ad-hoc, solutions with poorly-planned elements of workplace training. But even with such ad-hoc solutions, our study indicates that workplace-based alternative training may have negative effects on companies incentives to provide apprenticeships.

Contrasting the Norwegian experiences with the Danish system is useful in order to analyse how different forms of organising alternative training may have different system effects. Alternative education and training in Norway and Denmark differ along two important dimensions: 1) the learning venue: whether education and training takes place mostly in a workplace or mostly in a school, and 2) the degree of institutionalisation: whether alternative education and training is a clearly organised and predictable element of the VET system or not. In the Norwegian case, the learning venue is the workplace, but the degree of institutionalisation is low. Alternative training is organised in an ad-hoc fashion when it becomes clear that the number of apprenticeship places is insufficient. Generally, it has not been made clear to students and others whether alternative training will be organised within a trade until a late stage\(^5\). In contrast, the learning venue in Denmark is mostly the school and the degree of institutionalisation is high. Training centres are responsible for organising training and the availability of such alternatives is well known.

Compared to alternative school-based training, alternative workplace training has a potential to improve students' motivation and completion, but is also the organisational form that has the largest potential to reduce the supply of apprenticeships. However, the general low degree of institutionalisation of alternative training in Norway may lessen both the potential positive and negative effects. Lack of regulation of alternative training may weaken the quality of training in the workplace and increase the danger of exploitation. On the other hand, uncertainty about whether alternative training will be offered reduces potential negative effects on companies' and students' incentives. The volume of the alternative training scheme has also so far been low, which has limited displacement effects.

A highly institutionalised system of alternative training that takes place in the workplace seems likely to have a huge disruptive potential for the apprenticeship system. If there are to be any system of alternative training and especially if it to any extent incorporates workplace training, close cooperation between the employers committed to the apprenticeship system and government seems essential. In the Norwegian case, the local training offices, which are usually owned jointly by a group of businesses and take care of many functions regarding apprenticeships, could potentially play a role in securing the quality of alternative training and limit displacement effects.

\(^5\)That is beginning to change as some counties have begun to offer a guarantee to vocational students that they will either get an apprenticeship or (good quality) alternative training. The motivation has been to attract more students to vocational education.
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Towards the Compatibility of Professional and Scientific Learning Outcomes: Insights and Options in the Context of Competence Orientation

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Abstract: The steady increase in science-related requirements in operational areas of skilled and managing workforce is influencing worldwide the discourse on shaping professionalization. This article focuses on the compatibility of professional and scientific competence-oriented learning outcomes of qualification programmes within and across the education and training sectors. It is assumed that there is not, per se, a conceptual dichotomy in designing education and training programmes and credentials in a competence-oriented manner to address complex professional and scientific requirements in education and training in a compatible way.

The article tries to shift the discussion from a systemic and institutional focus to a conceptual- and requirement-oriented perspective on qualification design. Using Germany as an example, it discusses the conceptual intersections of Vocational Education and Training and academic Higher Education on competence, and comparatively analyzes competence-oriented instruments for the classification and the transparency of learning outcomes and their application in the education practice of dual study programmes with vocational reference qualifications. On this basis, the article elucidates identified characteristics of comprehensive professional-scientific competences and relevant requirement areas in education and training. In addition, further prerequisites for an integrated competence acquisition in education programmes are discussed as well. It is assumed that these characteristics can also be regarded as important prerequisites for the connectivity of qualifications and permeable pathways within and between education systems.

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1 The Framing Developments and Problems in Education and Training

Education and qualifications in all variations is incrementally designed along knowledge-intensive requirements of lifelong learning, the labour markets and other societal areas in the industrialized countries (Raffe, 2003). Knowledge-based jobs in the main occupational areas of manufacturing as well as primary and secondary service areas are increasing globally (Euler & Severing, 2014). The ongoing trend toward higher qualification of skilled workers and managers drives the discussion as to which extent occupational professionalization can be designed along academic requirements (Wolf, 2010; Rein, 2002). Of interest are programmes and credentials in education and training sectors which address professional and scientific requirements and competences in curricula, didactics and assessment.

Consequently, in European Higher Education (EU, 1999) consecutively organized study programmes are increasingly developed along parameters which also address professional requirements beyond academia. Professional competence has been defined as the qualification objective for academic degree programmes as well. At the same time, advanced vocational qualification programmes, such as those found in the German dual system, are under discussion to be systematically redesigned compatible to science-based parameters (Nida-Rümelin, 2014). Hybrid qualifications like associate programmes in Anglo-Saxon countries and dual bachelor programmes in Germany are regarded as qualification types which potentially generate curricula and assessments that address both academic and occupational requirements in an integrated way (BLK, 2008; Räbiger, 2007). These developments have significantly extended the intersection of education and training objectives (Breuer, 2005).

To promote transparency, comparability and quality of qualifications and the permeability of education pathways, the stakeholders of all education and training sectors in the European Union (EU) have agreed since the late 1990s to design education and training programmes based on competences and learning outcomes. The Europe-wide induced competence-oriented shift to learning outcomes (EU, 1999; 2002; 2004) has qualitatively upgraded the ongoing national discourse on permeable education systems and pathways in Germany (Wolter, 2010; Deutscher Bildungsrat, 1970).

Further essential political, legal and instrumental framing conditions have supported this development since then. Amendments to federal state higher education acts have contributed to competence-oriented permeability of education pathways at the interface between vocational and academic education (KMK, 2002; 2009). Starting in 2006 the Federal Ministry of Education and Research (BMBF, 2006) carried out the ANKOM-Programme on the development of instruments and methods for the recognition of professional competences within academic study programmes. Furthermore, the Ministry programme “Open University” promoted the link between Vocational Education and
Compatibility of Professional and Scientific Learning Outcomes

Training (VET) and academic Higher Education (HE) qualifications as well (BMBF, 2011). Finally, EU education ministers agreed on the competence-oriented European Qualifications Framework (EQF; EU, 2008) across all education sectors, which should promote the transparency between VET qualifications and academic HE qualifications as well as the permeability between both education sectors. Germany followed with the development and the implementation of a national qualifications framework for lifelong learning to achieve the same objectives (BMBF, KMK, & AK DQR, 2011).

However, common criteria for learning-outcome-oriented curricula and assessment requirements which are compatible between VET and academic HE have not up to now been developed. Consequently, a German national education report demanded a cross-over educational concept which would reduce dysfunctional competition between the education sectors (BMBF & KMK, 2014). Facing their differences, especially with regard to the concept of qualification, both VET and academic Higher Education have to tackle the challenge to apply the compatible potential of the competence reference in the design of “their” qualifications. This is required by the education policy objectives of lifelong learning and permeability, as well as by the requirements of the labour market and other societal areas.

2 The Research Approach

This article begins the analysis of the compatibility of professional and scientific learning outcomes by discussing the conceptual differences and intersections of the comprehension of competence in both education sectors. It is evident that, in contrast to VET, academic HE programmes are systematically developed based on research-generated disciplinary knowledge and methodologies. However, it is assumed that there is not per se a conceptual dichotomy between the two education sectors to design education and training programmes and credentials along both professional and scientific requirements in a compatible way. Furthermore, it is asserted there is an implicit common competence-oriented potential to perform and to apply learning outcomes in specific learning or work contexts to solve complex problems.

From a predominantly pedagogical-epistemological perspective on the ongoing convergence developments concerning professional and academic knowledge and practice orientation in education and training (Harwood, 2010; Bailey & Matsuzuka, 2003), this article elucidates the results of a comparative analysis of selected appropriate theoretical and instrumental approaches of competence. They have been developed and implemented for the classification, the transparency and the conceptualization of learning outcomes in both education sectors. In addition, it summarizes implementation experiences in qualification programmes at the intersection of VET and academic HE, focusing on dual study programmes referring to relevant VET qualifications.

On this basis, common characteristics of relevant learning and skill requirements and competences needed in education and training are identified which can be classified as both professional and scientific. This points not only at a competence-cluster relevant for specific learning units but also at a professional-scientific synthesis relevant for the design
of complete education programmes. Finally, the article reveals possible consequences and open questions concerning the identification of professional-scientific requirements and competences for a compatible development of learning outcomes in qualifications and programmes within VET and academic HE as well as at the intersection of both education sectors.

The research approach used and the findings presented have been generated under the research project “Permeability promoting aspects of the design of qualifications and programmes in terms of competence orientation at the interface of VET and academic HE” (DUQUA; Rein, 2015). This article is predominantly based on analytical findings of the research on theoretical and instrumental concepts. It is complemented by selected empirical findings on conceptual and implementation practices in selected dual study Bachelor and Master programmes and qualifications in Germany with references to VET qualifications. The research had been predominantly carried out at universities of applied sciences in the fields of business studies, informatics and occupational pedagogy. The complete empirical findings will be released in a separate publication.

Please note that in this article, the term Higher Education (or academic HE) relates to any qualifications and programmes which has been developed based on academic disciplines and methodologies provided by comprehensive universities or by universities of applied sciences. This clarification is necessary as in education research and policy the term Higher Education sometimes includes non-academic programme provisions on higher levels (CEDEFOP, 2012). Similarly the use of the term Vocational Education and Training (VET) in this article refers, in the German context, to the dominant dual part of initial and advanced VET. The findings discussed are regarded as relevant for other VET formats as well.

Stressing the comprehensive approach of this article the terms occupational, professional, scientific and practice are not used exclusively in the context of specific education (sub-)systems, labour markets and other societal environments. They are understood here in a cross-over conceptual perspective to describe learning and skill requirements and relevant competence-oriented learning outcomes in education and training. Many jobs outside institutional academia require academic capabilities to accomplish occupational problems and tasks. And many vocational learning results can be recognized and applied in the academic context (Markowitsch, 2004).

The definition of the terms learning outcomes and qualification follow sector-overarching qualifications frameworks for lifelong learning. Learning outcomes “describe what learners know, understand and are able and ready to do on completion of a learning process” (German Qualifications Framework; BMBF, KMK, & AK DQR, 2011, p. 17). The term qualification is understood as “a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards” (EU, 2008, p.11). This definition in the EQF does not follow the traditional, comprehensive understanding of qualification in the education and training of German-speaking countries, which includes the entirety of all competences relevant for specific occupational requirements (Breuer, 2005).
3 Conceptual Differences and Intersections between VET and Academic HE

Between VET and academic HE some conceptual differences in the design of qualifications and programmes have had to be taken into account in terms of compatibility up to now. VET is directed at the demand for occupational middle skills and management workforce, whereas academic HE traditionally focusses on scientific enabling as well as on graduate and post graduate career pathways (Teichler, 2003). Likewise, universities have predominantly provided discipline-specific and knowledge-based competence achievement, while VET focuses on an action-oriented capability to perform in functions, tasks and processes. Academic curricula are designed along disciplinary systematics whereas VET programmes follow occupational performance requirements. The analysis of subject-specific knowledge, science-related application of methods and learning competence is promoted more systematically in academia than in a VET setting.

Both education sectors articulate in different ways the comprehension of competence and practice as central reference points for curricula and assessments. Academic education emphasizes proficiency in the sense of a potential to carry out required actions whereas VET focuses on performance-oriented competence as the major objective. In Germany, the occupation- and business-oriented pedagogic disciplines have focused their R&D activities predominantly on competence-related aspects within the initial and advanced VET of skilled workers, e.g., master craftsmen, and certified supervisors and specialists (Arnold & Lipsmeier, 2006; Sloane, Twardy, & Buschfeld, 2004). Following the agreements of the Bologna process for European HE, academic pedagogy has started R&D work to promote the design of competence-oriented academic degree programmes above the current qualification objective acquisition of scientific competence (Pletl & Schindler, 2007, p. 35; Brenner & Niehs, 2008). However up to now, a homogeneous cross-over theoretical approach has not been established to discuss a compatible competence-oriented design of qualifications and programmes at the intersection of VET and academic HE. Research in the relevant pedagogy disciplines is still in the initial phase in this respect.

One of the most important starting points for a cross-education-sector approach is the intersection of action orientation (“Handlungsorientierung”) in the education objectives of both VET and HE. All stakeholders in science, practice and policy in education have agreed on one educational objective: the acquisition of complete competence to act (Sloane, Twardy, & Buschfeld, 2004). In occupational pedagogy, competence is theoretically understood as the capability to perceive, to design and to transform a situation appropriately (Franke, 2005). Didactic concepts focus on the acquisition of competences in a reflective manner to support problem-solving and a practical solution for actions undertaken (Arnold & Müller, 1993). Following the educational objective on complete occupational competence in German dual VET, training profiles and programmes are explicitly designed along occupational action areas, functions and processes. This is done based on legal regulations for initial and advanced dual VET at both the federal level and state levels (BMBF, 2005; KMK, 2007). In German dual VET complete occu-
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Pational competence is described by technical, social and human competences, including methodological, communication and learning competences (KMK, 2007). The learning outcomes in occupational profiles are described in knowledge, skills and abilities. This follows a holistic understanding of competence, which includes societal participation and personal development (Weinert, 2001).

The Federal Higher Education Act of 1976 requires that German academic HE prepare its graduates to match occupational tasks beyond the academic context with scientific methodologies (BMBF, 1976). This has never been appropriately adapted in the design and the didactics of study programmes. However, academic graduates can be regarded as members of discipline-based communities of practice, who are professionally able to perform scientific knowledge and methodologies in both academic and in non-academic contexts. This is confirmed by the consistently high labour market acceptance of academics. (Markowitsch, 2004; IW, 2010)

Finally the Bologna Process for European Higher Education in 1999 prescribed the qualification objective acquisition of occupational competence in the design of academic degree programmes. As a result, the German Federal States (KMK, 2003, p. 4ff) followed this change of perspective by defining and implementing, in particular, Bachelor degrees as qualifications which prepare students for occupational requirements through the acquisition of relevant competences (Jahn, 2007; Böhle, 2010). A pertinent conceptual anchor in all disciplines within academic HE is the ability to apply scientific findings and methodologies in occupational tasks and situations (Kohler, 2004, p. 32).

The traditional differentiation between, on the one side, science as a cognitive complex and, on the other side, practice as the quintessence of an action-related context outside of academia, must be discussed critically within the context of the action-oriented acquisition of competence in academic HE. Wildt (2007) proposes an extended perception of the notion of practice and practice-oriented learning to appropriately address the employability objective for academic graduates. The cognitive complex of science needs to be interpreted in relation to practice both outside of and inside of academia. The potential to generate and acquire competence in academic practice must be made explicit, which both addresses academia-internal requirements and is transferable to an external practice in all societal sectors including the labour market. This extension of a holistic notion of competence is compatible with the qualification objective of VET.

In order to address this extended comprehension, Schaper (2012) proposes to define competence in science as the capability to act appropriately, responsibly and successfully in those requirement areas, which are characterized by high complexity, novelty, uncertainty and the need for high quality solutions. Competence should be performed on the basis of knowledge, skills, abilities, motivational orientation and ethical attitudes. In particular, this includes capabilities to apply scientific concepts to complex requirements e.g. at work as well as the generation and design of new, innovative concepts and problem solutions. Furthermore, this comprises the ability to use scientific knowledge, concepts and methods to reflect on and regulate one’s own analytical and problem-solving actions. This means an “action-theoretical” comprehension of competence, which interprets science-specific activities as actions applicable to non-academic requirements as well.
In both education sectors, generic competences are regarded as essential prerequisites for the acquisition of a holistic competence (Wild, 1997; Mertens, 1974). Generic competences are based on knowledge, abilities and attitudes, which are multifunctional and versatile across domains. They enable individuals to apply technical knowledge and capabilities to complex and difficult occupational situations in new and unknown situations (Schaper, 2012; Wildt, 2011). In VET, these capabilities are acquired as an integral part of occupational competence. They are embedded in qualification and occupation profiles via relevant learning objectives and outcomes (BMBF, 2005; KMK, 2007). They are highly recognized, especially in academic education, as a prerequisite for the ability to adapt to numerous occupational areas beyond one’s own discipline. However, in many degree programmes they are not yet explicitly integrated in curricula and didactic approaches. Many university departments for didactic affairs are offering discipline-non-specific programmes with generic competences (Chur, 2012).

Summarizing the conceptual intersections of competence understanding and orientation in both education sectors discussed above, holistic approaches with a common core are dominating. Also a dichotomy of scientific versus professional requirements and competences cannot be concluded per se (Markowitsch, 2004; Rein, 2011).


For further considerations to operationalize comprehensive learning outcomes at the interface of VET and academic HE, the research analyzed appropriate and well established classification and transparency instruments to identify common characteristics for compatible competence oriented professional and scientific learning outcomes. They should implicitly or explicitly address comprehensive requirements and competences across the two education sectors. These selected instrumental approaches had been comparatively analyzed concerning the underlying competence concept, its dimensions and the advanced degrees of complexity of requirements and competences in education and training.

4.1 Classifications of Learning Outcomes: Taxonomies

For decades, many conceptual approaches have described stages of learning by using taxonomies. Taxonomies classify learning objectives, arranged hierarchically by theoretical criteria. A lower category is always a subcategory of the higher level category (Sitte, 2001). Activities based on human behavior potential can be described separately or in an integrated way based upon cognitive, affective and psychomotoric competence dimensions (Vygotsky, 1978).
**Bloom's Taxonomy and Subsequent Developments**

The theoretical debate on the description and the progression of learning outcomes and many practical approaches has, up to now, been influenced by the Bloom taxonomy and its underlying concept. The first version (Bloom et al., 1956) categorised cognitive learning hierarchically from basic knowledge and comprehension to advanced, complex competences in terms of analysis, synthesis and evaluation of concepts and processes. In later versions, the taxonomy dimensions which were previously based on a more holistic comprehension of capability were extended by affective and psycho-motoric learning (Bloom et al., 1964). The classification in the affective domain ranges from receiving and responding to more complex competences in terms of valuing and structuring values.

In the psycho-motor domain, classification starts with imitation, later moving to action structures and naturalization on more complex levels of learning.

Anderson and Krathwohl revised the cognitive domain of Bloom's taxonomy by verbalizing the nouns, e.g. knowledge was changed to remembering and comprehension to understanding, and placing creating (synthesis) above evaluating (evaluation) in the highest level of complexity of the cognitive learning dimension. In addition, the researchers divided the cognitive dimension of learning into the subcategories factual, conceptual, process and meta-cognitive knowledge (Anderson & Krathwohl, 2001). Based on this revised taxonomy, researchers at Iowa State University later specified this extended two-dimensional domain structure of learning objectives by verbalized descriptions (Heer, 2012).

The following two taxonomies with major influence in education and training also describe the dimensions of learning in an integrated way:

**Dreyfus Taxonomy**

The Dreyfus taxonomy (Dreyfus & Dreyfus, 1986) describes the learner progression from novice to expert on five levels in an integrated way. For example, at the proficient level, learners are regarded as having a deeper understanding of problems, the ability to plan and to carry out actions holistically and being consistently able to achieve a high standard. Expert learners are described as having an authoritative, deep and holistic understanding. They are regarded as being able to deal with routine matters intuitively, to go beyond existing interpretations and consistently achieve excellence.

**SOLO Taxonomy**

Focusing on the depth and quality, understanding as the major integrated learning dimension is described by the SOLO taxonomy (Biggs & Collis, 1982; Biggs, 2014) as an increase in the complexity of connections in the levels of competence. Understanding starts at an uni-structural level and progresses to the relational and the extended abstract levels. The relational level of understanding indicates orchestration between facts and theory, action and purpose. Understanding of several components is required, which are all integrated conceptually, and the learner can apply the concept to familiar problems and work situations. The relevant indicative verbs are compare, contrast, explain causes, integrate, analyse, relate and apply. On the highest level (extended abstract level), the learner is required to conceptualise beyond what has been dealt within the
actual teaching and learning process. Additionally, he is expected to generalise to new areas. The relevant indicative verbs are theorise, generalise, hypothesise, reflect and generate.

In an education system-neutral way the discussed taxonomies describe learning stages in competence related learning dimensions and partially in a comprehensive manner. Therefore they are relevant for an integrated development of professional and scientific learning outcomes.

4.2 Transparency of Learning Outcomes: Qualifications Frameworks

Qualifications frameworks have been developed and implemented both in Germany and worldwide as instruments to promote the transparency of competence-oriented learning outcomes. At the same time, they are designed to promote the comparability and the permeability of education and career pathways. Qualifications frameworks are an essential instrumental part of an education policy induced Shift to Learning Outcomes in qualification programmes (ETF, 2009). Examples of frameworks for lifelong learning and for education sector-specific purpose are of particular interest in this article.

**German Qualifications Framework for Lifelong Learning (GQF-LLL)**

Based on the Maastricht declaration of the EU education ministers (EU, 2004), the German Qualifications Framework for Lifelong Learning (GQF-LLL; BMBF, KMK, & AK DQR, 2011) had been developed as a national extension to the EQF (EU, 2008). The GQF-LLL enables, for the first time, a cross-sector referencing of qualifications based on an action-oriented definition of competence defined as “the ability and readiness of the individual to use knowledge skills and personal, social and methodological competences and to behave in a considered, individual and socially responsible manner” (BMBF, KMK, & AK DQR, 2011, p. 16). The GQF-LLL defines the central category competence as a holistic capability to act which is relevant for both education sectors (ibid).

In its requirement structure, the GQF-LLL describes professional and personal competences on eight levels in the dimensions of knowledge and skills as well as in social competence and autonomy, whereas the EQF structure only focuses on responsibility and autonomy when describing competence. Knowledge is specified in terms of depth and breadth. Skills are described in the dimensions of instrumental, systemic and judgment. Social competence is specified in terms of team and leadership abilities. Finally, the competence dimension autonomy is defined related to responsibility, reflectivity and learning abilities. As an example of more complex levels, the GQF-LLL level 7 requires learners to “be in possession of competences for the planning, the processing and the evaluating of comprehensive technical tasks and problem sets and be in possession of competences for autonomous management of processes within subareas of a scientific subject or within a field of occupational activity. The structure of requirements is characterised by complexity and frequent changes” (ibid).

A comparative study on the relevance of taxonomies for German dual advanced VET concludes that the holistic competence approach and dimensions of the GQF-LLL and its taxonomic descriptions appropriately address the broad requirement and action scope
of advanced dual VET qualifications. This concerns especially complex degrees of social interactions and responsibility (Prakopchyk et al., 2015, p.16).

**German Qualifications Framework for Advanced VET (GQF-AVET)**

In 2014, the German Qualifications Framework for advanced VET (GQF-AVET) was implemented to safeguard quality assurance and progression of qualifications within this VET sector and to promote the recognition of prior learning towards academic HE (BMBF, 2014). This competence-oriented framework explicitly refers to the advanced levels 5 to 7 of the comprehensive German Qualifications Framework for Lifelong Learning and its overarching description of requirements and competences of the levels. The level descriptors of this instrument focus predominantly on operational and strategic leading and management competences, which are required in more complex job functions. However, a differentiated description in the competence domains to specify its holistic approach of competence is missing. This would include, for example, a specified description of knowledge in terms of depth and breadth, which are required by management functions, to be compared with academic requirements and to be recognized in the academic HE context.

**German Qualifications Framework for Academic HE (GQF-HE)**

A German Qualifications Framework for Academic Qualifications (GQF-HE; KMK, 2005) has been developed on the basis of the agreements and standards of the Bologna Process (EU, 1999) for the development of a European Higher Education Area (EHEA) with the degree formats Bachelor, Master and Doctorate. The underlying Tuning approach for academic HE had been established to support shaping and implementing study programmes of the consecutive cycles agreed to in the EHEA-framework. The competence-oriented conceptualizations had been specified in the so-called Dublin Descriptors (Bologna Working Group on Qualifications Frameworks, 2005; Tuning Project, 2006). In the Tuning approach, competences represent a dynamic combination of knowledge and understanding, as well as skills and abilities defined as instrumental, systemic and interpersonal competences (Gonzlez & Wagenaar, 2009).

In the GQF-HE discipline non-specific descriptors describe the requirements and competences of the three degree levels in two major and five minor competence dimensions. Following the European Framework for academic degree programmes it describes competences in an action-oriented way in knowledge and understanding and in proficiency. Knowledge and understanding focus on the extension and deepening of discipline-specific knowledge as a prerequisite for the proficiency to generate and transfer knowledge based on instrumental, systemic and communicative competences. For instance on the Bachelor level, systemic competence including judgements is defined as “the ability to gather and interpret relevant data usually within their field of study, to deduce scientific profound judgements that include reflection on relevant social, scientific or ethical issues and to shape autonomously subsequent learning processes” (KMK, 2005, p. 2). Instrumental competence is described on this level as the ability to “apply their knowledge and understanding to their work or occupation, devising and sustaining arguments and solving problems” (ibid). These acquired competences address requirements in academic
disciplines as well as in the non-academic practice and are likewise implicitly relevant to complex occupational requirements.

In a refined version (KMK, 2017), the GQF-HE specifies the dimensions of its competence model which explicitly refer to the GQF-LLL competence dimensions to promote its instrumental connectivity. Knowledge and understanding as well as application and generation of knowledge both refer to professional competence in the GQF-LLL. Communication and cooperation correspond to social competence, and academic self-concept & professionalism refers to self-competence & autonomy in the GQF-LLL. The document recommends specifying the degree level descriptors in the competence dimensions by using established taxonomies namely taxonomy developments based on Bloom (1956; 1964) and Anderson and Krathwohl (2001).

As assumed, qualifications frameworks for lifelong learning like the GQF-LLL and the EQF provide the most consistent comprehensive approach for a competence-oriented operationalisation of learning outcomes at the interface of vocational and academic education. Their instrumental development took into account established holistic, categorial and classificatory concepts discussed before to describe the outcome of learning. In addition, new sector-specific academic qualifications frameworks conceptually address competences required in non-academic environments like the Qualifications Framework for Business Engineering (FFBT, 2012).

4.3 Practices of Competence Oriented Description of Learning Outcomes at the Interface of Academic and Non-Academic Requirements

In the research project DUQUA (Rein, 2015) the theoretical-conceptual and instrumental reference approaches on the design of curricula and assessment requirements had been analyzed empirically in a complementary research on selected representative dual Bachelor and Master study programmes in Germany predominantly provided by universities of applied sciences. The research focused on programmes in business administration, informatics and occupational pedagogy with references to initial and advanced VET qualifications. In all of the study programmes learning outcomes were described in a competence-oriented manner. However, a homogenous systematic application of conceptual and classificatory approaches for a comprehensive operationalization of learning outcomes could not be identified. The curricula and the assessment assignments to describe learning outcomes took into account the required Tuning systematic for the EHEA complemented by the systematic of the GQF-LLL and and Bloom’s taxonomy in revised versions of Anderson and Krathwohl (2001) and of Heer (2012). In a few cases, study programmes describe competence requirements refering to the programme systematic for the dual vocational schools in Germany (KMK, 2007) albeit not across all learning units and assessment assignments.

Diverging from the discipline-oriented study programme objectives, the occupation field-oriented design of learning outcomes often dominates. In almost all study programmes, requirements of VET reference qualifications were taken into account in the learning outcome developments, but predominantly in a complementary way and rarely
in a synthesized manner. The limited subject compatibility between vocational and academic curricula has led to the design of professional-scientific learning outcomes on a limited extent in initial dual study programmes integrating VET programmes. Academic competence is, in these cases, defined as methodological capability, that is, as solving tasks rather than as scientific comprehension and mastery of the disciplinary context on the whole. In the programmes analyzed, the more professional and application-oriented learning outcomes and the more academic-theoretically oriented learning outcomes are not predominantly designed in a level-congruent way. Generally, the learning outcomes in all programmes are by and large not designed in a balanced professional-scientific polyvalent manner. Fundamental discipline specific differences concerning an integrated professional-scientific design of learning outcomes could not be identified.

Regardless of the still unchallenged university autonomy to design study programmes (Zervakis, 2008), all experts interviewed demanded the development of guidelines and manuals for a comprehensive competence-oriented professional-scientific design of learning outcomes in both curricula and assessment assignments which addresses needs in both academic and non-academic environments.

5 Common Characteristics of Professional-Scientific Requirements and Competences

Comparing and analyzing the theoretical-conceptual and classificatory approaches of competence-oriented learning discussed in the preceding chapters, which are applied in both education sectors, essential intersections can be identified in the following requirement and competence areas: knowledge and understanding; learning, identification and solution of problems; reflectivity and judgment; self-organisation and planning; selection and application of methods, decision-making, responsibility and leadership; communication and transfer.

The following synthesis of professional-scientific competences described in comprehensive requirement areas in education and training in figure 1 as meta-descriptors of learning outcomes has been generated on this basis. It addresses higher degrees of requirement complexity and is described in a subject-, discipline- and qualification-neutral way. All requirement and competence areas are compatible with the domains and descriptors of the comprehensive GQF-LLL and the GQF-HE discussed above. The GQF-AVET covers these areas predominantly implicitly. However the description follows a constructivist approach (Dreyfus & Dreyfus, 1986; Biggs, 2014) to address a comprehensive perspective compatible with a holistic understanding of competence.
Comprehensive Professional-Scientific Requirement Areas and Competences

• Knowledge and Understanding
Competences for a systematic analysis to master and to critically understand a comprehensive, integrated, advanced and partially specialised knowledge, its foundations and beyond in a subject, a discipline, a working field and to contribute to their further development.

• Learning
Competences for a self-regulated and autonomous learning, including research oriented learning to contribute new knowledge to a subject or a subject area.

• Identification and solution of problems
Competences for the systematic identification and analysis of complex problems and tasks and the development and application of appropriate solutions and innovative concepts in complex and uncertain requirement contexts to achieve a higher standard.

• Reflectivity and judgment
Competences for an advanced reflectivity and judgement towards complex matters, problems and tasks as well as towards one’s own actions based on relevant knowledge and on ethical attitudes as well.

• Self organisation and planning
Competences for self-organisation and autonomous planning of solutions of complex problems and tasks including an appropriate situational and long term processing.

• Selection and application of methods
Competences for mastery of a comprehensive range of methods and instruments as well as for their selection and application to process and to solve complex problems and tasks.

• Decision-making, responsibility and leadership
Competences for autonomous decision-making, responsibility and leadership and the definition of objectives in complex, changing and uncertain requirement contexts.

• Communication and transfer
Competences for communication and transfer of compatible knowledge and insights from learning, research and work in complex and uncertain requirement contexts by deploying appropriate skills.

Figure 1: Comprehensive Professional-Scientific Requirement Areas and Competences
In this article, professional-scientific competences are described as part of characteristics for shaping a broad concept of competence acquisition in programmes and qualifications at the interface of academic and non-academic education. They are understood as a synthesis of capabilities, which have been predominantly acquired in qualifications separately provided by the education systems.

![Figure 2: Definition of Professional-Scientific Competences](image)

The definition in figure 2 considers the action-theoretical, subject-related and domain-overarching comprehension of competences in VET research and pedagogy as context-specific performance potentials and capabilities to perceive, shape and transform situations and refer to science specific competences as well (Franke, 2005; Arnold & Lipsmeier, 2006; Schaper, 2012, p. 22ff). They are described in a level-unspecific way. But they de facto correlate with the complexity degree of requirements as described on level 6 and 7 of the GQF-LLL, which predominantly address Bachelor and Master degrees and advanced vocational qualifications of level 2 and 3 of the GQF-AVET. It is assumed that this approach promotes both a level-specific description of learning outcomes and professional-scientific competences as well as comparisons and articulation procedures at the interface of VET and academic HE.

Based on the conceptual and empirical analysis further prerequisites for an integrated acquisition of professional-scientific competence could be identified. All forms of problem-oriented learning and assessments promote the acquisition of professional-scientific competences. This requires a didactic which potentially uses all learning formats in a blended or a hybrid manner. It fosters for example problem oriented learning and research-oriented learning which can be interpreted as autonomous and self-reliant actions. Assessment procedures based on case studies, projects and process-based work can test the learner’s reflection and judgment of problems and problem solutions. Furthermore they can test the application of complex knowledge e.g. in complex case studies, project work, and process-oriented examinations (HRK, 2013).
6 Conclusions and Perspectives

The prerequisites for the identification of competence-related intersections in the qualification design in both education sectors are given by the capability to act as the common objective as well as by holistic scientific conceptionalisation of competence in the perspective of different pedagogical disciplines, taxonomies, and qualification reference frameworks. Using comparative analytical findings on theoretical concepts on competence and intruments to classify and compare outcomes of learning, the article has discussed intersectional characteristics of professional and scientific competences. As assumed, there is no conceptual dichotomy to design education and training programs per se between the two education sectors. (Markowitsch, 2004; Rein, 2010; 2012). Academic HE programmes are developed along research based disciplinary knowledge and methodology systematics. However it is supposed, that professional and scientific learning outcomes can be designed in a complementary as well as in an integrated or synthesized manner. They could address converging knowledge-intensive and science-related requirements in academic and non-academic environments. The empirical findings about the heterogeneous design practice of dual study programmes confirm the relevance of defining systematically the intersection for a professional-scientific compatible design of education programmes to promote the employability in both environments.

Concerning comprehensive requirement areas and competences elucidated in the preceding chapter, professional-scientific learning outcomes can be described according to a holistic concept of competence and in a level-related manner for a potential and performative mastering of requirements in education, training and at work. Faced with the dominant role of comprehensive qualifications frameworks such as the GQF-LLL for both education sectors, it is further recommended to take into account the descriptors of the competence dimensions and advanced levels found in such frameworks, because they are applicable both for academic and non-academic requirements. Finally, a complementary development and design of the curricula, the didactic and the assessment formats along the principle of constructive alignment is recommended (Arnold & Lipsmeier, 2006; Schaper, 2012).

The discussed intersectional characteristics potentially provide an orientation for a compatible competence-oriented design and quality development of learning outcomes in education programmes and qualifications within and between both education sectors to solve complex problems and tasks in specific learning or work contexts on the same requirement level.

A number of challenges is given for the development of a sustainable basis for a greater conceptual compatibility of VET and academic HE in terms of a competence-oriented development of learning outcomes and programmes. This calls for corresponding research, testing and development activities. To prepare and safeguard appropriate operationalizations, the discussed intersectional characteristics have to be specified in further R&D steps focusing on the levels of requirements of the relevant sectors, subjects and disciplines. This can provide a practicable basis for manuals with an eye to quality assurance and quality development of competence-oriented professional-scientific learning outcomes.
In order to identify commonalities of academic and non-academic requirements, it could make sense to define professional areas such as, for example, information technology or business administration as comprehensive meta-domains. They could be used as starting points for the requirement identification of any prospective programme development in academia, in VET and at the interface of both education sectors. Here subject-matter knowledge could be operationalized as a bridge for requirement identification. But it has to be taken into account that the development of compatible professional-scientific learning outcomes in curricula and assessment will need to be tackled between the poles of the logic and the knowledge generating dynamic of disciplines and the market oriented knowledge requirements of enterprises.

In both the empirically analyzed dual study programmes and in compared short cycle study programmes in the EU and in the US, this challenge has predominantly not been tackled in an integrative-synthesized way. The cumulation of modules which are either subject-discipline oriented or occupation-application oriented had been identified as the preferred programme design way. It can be assumed that a programme design focused on isolated science-oriented modules cumbers addressing professional-scientific requirements in education and training in a compatible sense. This contradicts the integrated-holistic qualification concept, thereby generating problems in the didactic backing and curricula fine tuning as well as the conceptual connectivity between qualification (Bailey & Matsuzuka 2003). One possibility to accommodate a professional-scientific competence orientation and an integrated-holistic programme structure could be a clustering of disciplinary and cross-disciplinary learning units to action areas. This has been implemented in the subject-comprehensive concept of learning fields for German vocational schools (Gerholz & Sloane, 2008; 2011).

A consistent shift to learning outcomes in the design of qualification programmes which compatibly address complex cognitive and practical requirements in education and training as well as at work and other societal environments implies a resultant usage of relevant key terms like professional and scientific across traditional systemic and institutional contexts. Moreover, it can be assumed that this shift not only makes a holistic capability to act explicit. It also substantially promotes the connectivity and permeability between qualifications within and between VET and academic HE.

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orientation.
Enhancing Social Competence for Disadvantaged Youth in Pre-Vocational Education: Model Development Through Design-Based Research

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Abstract: This study investigates the enhancement of social competence for disadvantaged young people based on the example of the ‘Werkschule Bremen’ educational course. Theoretical approaches to social competence as a learning outcome are mainly based on the model of social information processing, although the meaning of both practical and experience-oriented approaches is constantly evolving. Taking the specific contextual conditions into account, this study combines qualitative and quantitative methods within the design-based research methodology in order to determine how a location-independent didactical concept to enhance social competence could be created as well as which comparable impacts on the participants’ social competence can be verified. The results show that a basic didactical concept is feasible, while the teaching and learning environment has a huge impact on the comparability. It is also clear that the students’ motivation to participate depends on both their own and their teachers’ interest as well as the teachers’ capacity to facilitate safe relationships. As a core result, this study delivers a didactic model that is based on target-controlled experience-oriented learning environments on the practical side and the social information processing approach on the theoretical side.

Keywords: VET, Vocational Education and Training, Vocational Orientation, Vocational Preparation, Pre-vocational Education, Social Competence, Design-based Research

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1 Introduction

Social competence has a significant impact on personal well-being (Organisation for Economic Co-operation and Development [OECD], 2015a). It also determines the outcome of an individual’s school and work careers (Faix & Laier, 1996; Kiper & Mischke, 2008; Seligman, Ernst, Gillham, & Linkins, 2009) as well as being the key to personal development (Crisand, 2002). Due to its high relevance in relation to work environments, it is seen as an important learning outcome within the field of vocational education and training, and it represents a growing area of interest in vocational research (Euler, 2016; Seeber & Wittmann, 2017).

One important facet of vocational education is the fact that it targets the education of young people during the transition from school to work, particularly in the case of those young people who are disadvantaged for social or educational reasons and who experience difficulty in managing the transition (Ecarius & Eulenbach, 2012). The potential to act in a socially competent fashion is important from two perspectives within this context. First, there is the issue of personal development, whereby young people have to complete developmental tasks in order to become responsible citizens. Second, social competence influences, to some degree at least, success in vocational professions and it is therefore a relevant learning goal in the field of vocational education and training. At first glance, the two perspectives seem to require different approaches with regards to how to construct social competence, namely either a more psychological or a more vocational educational approach. Yet, when considering young people and disadvantaged adults, it can be assumed that a more holistic approach is required, which involves aspects of both personal development and vocational professional guidance (in terms of vocational orientation). In recent years, many studies have attempted to develop concepts for the enhancement of social competence in a number of different contexts, for example, for higher education students (Euler & Bauer-Klebl, 2009), for social care workers (Dietzen, Mounier, Srbeny, & Tschöpe, 2015) and for school students (Yeates, 1989). In Germany, the “Fit for Life” programme (Jugert, Rehder, Notz, & Petermann, 2010) includes a huge number of modules and methods that aim to target social competence, especially for young people with behavioural problems (i.e. at-risk youth). This approach is also used within the Werkschule Bremen[1] educational course, which represents the research field in this study. The concept behind this specific educational course will now be briefly presented, which will lead to the research questions that inform this article.

The Werkschule is a three-year educational course localised within vocational education and training centres, and it is anchored in the education system of the federal state of Bremen, Germany. Students can complete either a regular (or so-called simple) school exam (after two years) or an expanded (after three years) Berufsbildungsreife in a learning environment that is two-thirds practically organised. The implementation of the Werkschule in Bremen aims to reduce the number of school-leavers without qualifications and can therefore be seen as a politically motivated innovation. The concept of the Werkschule is built on three main pillars:

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[1]Henceforth, it will be referred to as the Werkschule.
(1) **psycho-social stabilisation** of the students, which encompasses the characteristics of time, learning in teams and social-pedagogical support;

(2) **vocational, project- and product-oriented learning**, which also contains an element of seriousness; and

(3) **further structural characteristics**, for example, connection to the urban district, a probation period, and core school timetables, curricula and exams (Gessler & Kühn, 2013).

Ideally, lessons are planned and conducted by teams of at least four people, including class teachers, subject teachers, masters (vocational professionals) and social pedagogues. The piloting of the Werkschule found the approach to be promising, although there is still the potential for optimisation in terms of social competence as a learning outcome. This became more important when teachers started to suggest that when students leave their old schools, they are no longer socially fit (‘sie kommen sozial nicht mehr zurecht’) (Gessler & Kühn, 2013; Kühn, forthcoming). The students themselves highly valued the number of contrasts that they experienced between the Werkschule and their old school. The active creation of social learning environments, in contrast to already familiar situations and conditions, hence seems to be a productive starting point for concept development.

The present study is guided by the following research questions:

1. Which aspects of social competence are relevant learning issues within the Werkschule?

2. What do young people learn during an intervention developed specifically for the Werkschule?

3. Which factors are helpful and hindering in relation to the enhancement of social competence in the context of the Werkschule?

This study follows the generative design-based research approach (McKenny & Reeves, 2012). It leads to an area-specific model of social competence (theoretical output) as well as to concrete content and factors (practical output) that have to be taken into account when attempting to enhance social competence in the context of the Werkschule. The remainder of this paper is organized as follows. Section two presents a short review of the actual state of the art regarding social competence, while the differences between a psychological, educational and vocational perspective are highlighted. Additionally, the preliminary work steps that are needed to understand the results are described. In section three, the methodological framework is described and the selection of the results is explained. After that, the results are presented. Following the theoretical and empirical findings, an area-specific model for the enhancement of social competence in the Werkschule is developed in section four. To help summarise the results, the term **social literacy** is proposed. Finally, in section five, the results are discussed and areas requiring further research are identified.
2 Social Competence: Identifying a Working Definition in a Broad Field

Although there seems to be a general consensus regarding the meaning of social competence as an aspect of learning, there is presently far less agreement regarding an evidence-based model of this construct. The plurality of the approaches to defining and constructing social competence is the result of several factors. Practice requires functional approaches and ‘what works’ is adapted to the field, which is proven by practice itself. The scientific community instead focuses on theoretical constructs and, in fact, an increasing number of concepts with evidence-based impacts on practical settings. This section presents an overview of the main lines of discussion, exemplifies a number of approaches to enhance social competence and, finally, includes the definition of social competence utilised in the present study.

2.1 An Overview of the Approaches to Social Competence

The construct of social competence (Kiper & Mischke, 2008; Rehder, Jugert, Notz, & Petermann, 2001), social competences (Hinsch & Pfingsten, 2007; Kanning, 2002) or social competency (Taylor, Liang, Tracy, Williams, & Seigle, 2002) has given rise to controversial discourse. In general terms, (1) psychological, (2) educational scientific and (3) vocational educational definitions of social competence can be found.

Theoretical Perspectives

The psychological view differs in two key respects, since social competence can firstly be seen as a result of the successful development of one’s personality (Oerter & Dreher, 2008). The psychological manifestation of mental characteristics secondly represents the main perspective of psychological research in terms of psychometrics. An important field in this regard concerns the measurement of those characteristic values (e.g. Kanning, 2002). Social competencies in this context can therefore be seen as social skills, that is, the observable part of a psychical representation. Social competence here refers, naturally, to action in general social contexts (Seeber & Wittmann, 2017). The relation between action and behaviour (not only) in psychological constructs remains unclear (Neubert, 2009). The separation between the psychical representation disposition and its realisation performance has also been adopted by the community of educational sciences, especially in the field of education standards (Klieme & Hartig, 2007). The concept of competence (Weinert, 2001) defines competence itself as ‘in all individuals available or learnable cognitive capabilities and skills to solve specific problems, as well as the related motivational, volitional and social willingness and skills to be able to successfully and responsibly use those solutions in various situations’ (Weinert, 2001, p. 27-28). From this perspective, the focus is on the learnability of competence aspects, mostly in the fields of social and cultural learning, as well as lifelong learning (Gudjons, 2008; Straka & Macke, 2009). Developmental challenges are not neglected, but rather enriched by the controlled growth of knowledge and capabilities in the different contexts of formal education, for example, kindergartens and schools. Due to this perspective,
the related research focuses on the development and impact of teaching and learning environments under complex contextual conditions. The perspective of educational science considers the situational aspect of competence to be important to the theoretical model of social competence, which is reflected in the vocational education and training in Germany.

Over the last two decades, the German vocational education and training (VET) system has shifted towards a competence-orientation in both class and exams. Bader and Müller (2002) developed a basic concept of action competence and social competence, which represents one part of that orientation, in addition to professional and methodical expertise, as well as self-competence. All these components are understood as interacting facets of the construct of action competence. The (dual) VET system in Germany strongly refers to this concept due to its status as a key educational and political standard (Kultusministerkonferenz [KMK], 1996, 2007, 2011).

Social competence appears to be related to additional constructs, for example, intelligence, competence and skills. Monnier (2015) suggested a clarification of the relations between the named constructs through a ‘proposed clean-up’ (p. 70-71). The model she developed links different modes of action regulation (intellectual, knowledge-based and routine level) to fluid and crystallised intelligence as well as skills (Monnier, 2015, p. 70). Moreover, Monnier (2015) discussed the relation between the social and emotional aspects of the competence debate. She found that emotions play a major role in many aspects of social intelligence, competence and skills, although it is difficult, if not impossible, to separate the emotional aspects from social intelligence, competence and skills (Monnier, 2015, p. 70). Yet, in terms of social situations, intelligence, competence and skills can be separated. These results demonstrate that the role of emotion in approaches to enhance social competence must be taken into account.

As the Werkschule addresses those who have dropped out of school, many of the targeted young people have experienced problematic or frustrating school careers. They have often lost the fun in learning, which can culminate in school absenteeism. Additionally, they may have behavioural problems, so that they perhaps just do not know how to successfully act or express themselves socially. The Werkschule itself provides a practical approach for such students, since it is assumed that they might learn better in a more practical rather than theoretical context. The evaluation of the pilot scheme indicates promising results (Gessler & Kühn, 2013). It appears necessary to take all three lines of discussion into account when attempting to enhance social competence in the special context of the Werkschule. Social competence is here defined as

the cognitive skills and abilities available to individuals or learnable through them in order to solve problems in social situations as well as the related motivational, emotional and volitional willingness to successfully and responsibly use the problem solutions in standardized and value-oriented situations (Kühn, forthcoming).
General Aspects of Enhancing Social Competence in School Contexts

The concept of enhancing social competence is part of a variety of social, educational and psychological fields, and it therefore cannot be presented to its full extent. Instead, an overview is provided regarding the school-related approaches, which represents the specific focus of the paper. Basically, the approaches can be differentiated into behaviour- and relation-oriented approaches (Achtenhagen, 2008; Jerusalem & Klein-Heling, 2002). The concepts to enhance social competence mostly focus on a selection of social competence characteristics, for example, prosociality (Kienbaum, 2016), empathy and moral awareness (Baumgartner & Alsaker, 2016), and assertiveness and perspective taking (Perren, Argentino-Groeben, Stadelmann, & Klitzing, 2016). Further, there seem to be two important issues regarding the positive long-term effect of the concepts related to enhancement. First, not only a single group (i.e., a class) is involved, but rather the whole school, if possible (Strohmeier & Spiel, 2016). Second, an intervention requires a clear and repeating agenda, as well as intensity (Merrill, Smith, Cumming, & Daunic, 2016). The actual forms of intervention are the analysis and modification of behaviour, counselling and therapy, social skills training, peer-mediation, cognitive interventions and self-management, as well as multiple interventions (Jerusalem & Klein-Heling, 2002).

Further research regarding social competence shows the close connection between an individual’s ability to succeed in social interactions and his/her cognitive performance (e.g., Seligman et al., 2009), which is particularly relevant in relation to school education, especially for drop-outs. Bringing students back to school requires making school fun again. As Ecarius, Höll and Berg (2012) have shown, a different experience in a new school can prove helpful in overcoming and revising prior bad experiences. Additional promising approaches include positive education (Seligman et al., 2009), experience-based education (Gudjons, 2008; Möbus, 2013) and the creation of a positive learning climate (Brüning & Saum, 2009), which naturally involves both students and teachers. The following section briefly describes the main issues concerning the Werkschule and then presents a concept that was developed based on its specific conditions.

2.2 A Didactical Working Model for Enhancement of Social Competence

Based on the theoretical background, an initial model to enhance social competence in the context of the Werkschule was developed, which is presented in Figure 1. Working through the model, it is first assumed that social competence as a learning outcome needs to be elaborated by the teaching staff. Each individual situation that requires action has specific conditions at its heart (i.e., a conflict: Who was/is involved? Where did the action take place? How did the problem begin? How complex was/is the situation? What are the requirements and given targets?). Teachers represent requirements in terms of their (vocational) profession and they have to make these aspects transparent to the students in order to make a holistic understanding of the situation possible. The situational aspects have to be understood so as to provide helpful information to the actor(s). Therefore, the attention of the students has to be given and the environmental stimuli changed to information in order to become relevant to the students (Straka &
Macke, 2005). As Aarkrog and Wahlgren (2017, p. 56) have noted, the elaboration of competence as a learning goal must be both defined in relation to the context and not too detailed. Moreover, based on the results of their study, they concluded that thinking about assessment instruments leads to the highlighting of social competence in practical learning environments (Aarkrog & Wahlgren, 2017, p. 63). This produces awareness regarding the design of learning environments as well as the role of social competence within those environments. Hence, an adequate definition of a learning task is essential.

Figure 1: Working model of a didactical framework to enhance social competence in the Werkschule. (Source: author’s own illustration, following Dörner, 2011; Euler & Bauer-Klebl, 2009; Jugert et al., 2010; Neubert, 2009; Seligman et al., 2009; Straka & Macke, 2005).

The model of a complete action with its conceptual proximity to the cognitive (here: social) information processing model serves as a fitting illustration of the learning process, and it includes the following steps: perceive, understand, decide, act and evaluate. These iterative steps are closely connected to the aspects of social competence, either
the individual disposition or the concrete performance. This process has to be attended by those who take over teaching tasks. According to the concept of positive education, the language used is resource-oriented and respectful. There are (at least) two feasible ways to evaluate actions in terms of their success: students could learn by receiving feedback directly through experiencing the consequences that accompany an action, or those involved in the learning task could provide direct feedback. Both variants need to be reflected if they are to become experience-based knowledge and, relatedly, enhance social competence.

In order to develop learning tasks, the degree of complexity of a given social situation must be taken into account. Minimal complexity makes it easier to adapt new knowledge and action processes, while too high a degree of complexity might prove frustrating and cause a refusal of the task.

3 Design-Based Research as a Methodological Framework

The research questions that inform this study target the usability and impact of an intervention that will be developed. This leads to a research design that highlights development-oriented practice research. The design-based research (McKenny & Reeves, 2012) approach appears promising, since it leads to practical solutions on the one hand and scientific findings on the other (Cobb, Confrey, diSessa, Lehrer, & Schauble, 2003; Euler, 2014).

Design-based studies follow a phase-based structure. In phase 1, the problem is defined, while phase 2 foresees the development of a solution to the practice problem and phase 3 concerns the validation of the solution’s implementation. One core aspect of the design-based research approach is the iterative optimisation and adaptation of an intervention or concept. Each so-called micro-cycle involves the following work steps: design, implementation, analysis and re-design.

![Figure 2: Design-based research design for the study (Source: author’s own presentation, following McKenny & Reeves, 2012).](image-url)
3.1 Design Principles and Quality Criteria

The design-oriented research approaches are still undergoing the formation process. Nevertheless, it seems certain that these types of research design need to realise some special characteristics (McKenny & Reeves, 2012), namely principles (Euler, 2014). The design-based research approaches are: iterative, orientated in interventions, collaborative, orientated in use (ability), theory-based and integrative. They deliver area-specific theories (Euler, 2014; Reinmann, 2010), design frameworks or design methodologies (Reinmann, 2010).

This study targets the following principles. The iteration is achieved via the implementation of three micro-cycles, which serve as optimisation cycles for the intervention as well as the research context of the impact on learning. An intervention was developed and tested. Collaboration during the research process was realised by means of exchanges with the involved teaching staff, the second observer (see description of micro-cycles two and three) and an external expert. Moreover, the students actively took part in feedback sessions and informal reviews during the implementation process.

The use of the research approach and the results were determined by the interest of the involved school actors in the intervention, including a didactical structure (learning goals, fostering environment, methods) and examples of implementation (best practice). The theoretical basis is formed by the theoretical didactical working model (cf. section 2.2), which combines all the relevant theoretical findings concerning to enhancement of social competence in the Werkschule. The research methods were chosen according to the needs of each individual phase and micro-cycle in order to comply with the integrative aspect. For all the utilised research methods, whether qualitative or quantitative, the related quality criteria were maintained.

The design-based research does not only explore and test what is, but also what could be (Schwartz, Chang, & Martin, 2005). It represents a change requirement and, therefore, has a significant influence on practice, which is the subject and object of this research.

3.2 Presentation of the Study

As mentioned above, this study aims to assess the design and impact of an intervention intended to enhance social competence in the Werkschule. The design and testing are both related to the system of the design-based research. This means that the implementation of the research occurs in phases and micro-cycles. Each phase and each micro-cycle has its own sample and research methods, which are customised to the scientific requirements of the development, namely the research step. First, the general structure is presented, although only micro-cycle three is highlighted in terms of the findings.

To concretise the research problem (phase one), two things were necessary. First, the curricular framework and learning goals regarding social competence had to be identified, which was achieved through a literature review. Second, the actual practice had to be captured, including the important topics, learning goals and didactical challenges. Addi-
tionally, the organisational frame of the intervention to be developed was determined. To realise this step, a group interview was conducted with four teaching teams, which were represented by seven teachers, four social pedagogues and two masters. The necessary conditions for taking part in the interview were (1) at least two team members had to take part, (2) the teaching team would start with a 9th grade class the following school year (first year of the Werkschule) and (3) voluntary attendance. Information regarding the project was circulated and participants were acquired during a board meeting of class teachers. In relation to the responses, no further selections were necessary. The core result of phase one was clarity regarding the conditions of the intervention as well as the necessary content.

In phase two, the intervention itself was designed. Therefore, the results from phase one were situated in relation to the relevant theoretical approaches by interlinking the phases one and two. The first draft of the intervention, the so-called prototype, formed the basis for the concept validation (phase three).

Phase three can be separated into three steps or micro-cycles (Figure 2). Each had a special focus on the optimisation of the prototype in terms of its didactical structure and methodology as well as on the learning aspect related to the participants. In total, five classes of students from four different Werkschulen took part in the study (Table 1). The classes were related to the participants in phase one in order to create a link between the problem definition, development of the solution and transfer of the intervention into practice. The teachers were all informed about what would happen in class, while communication between the researchers and the teaching team was assured during the implementation and adaption phases.

Table 1: Samples involved in micro-cycles 1 to 3 (Source: author’s own research)

<table>
<thead>
<tr>
<th>Micro-cycle</th>
<th>GR</th>
<th>M</th>
<th>F</th>
<th>Age</th>
<th>Total</th>
<th>Field of Profession</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>5</td>
<td>7</td>
<td>14–16</td>
<td>12</td>
<td>Food Preparation and Elderly Care</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>0</td>
<td>14</td>
<td>14–16</td>
<td>14</td>
<td>Food Preparation and Personal Services</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>11</td>
<td>1</td>
<td>14–16</td>
<td>12</td>
<td>Metal Construction</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>9</td>
<td>14–17</td>
<td>14</td>
<td>Food Preparation and Elderly Care</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>2</td>
<td>15–17</td>
<td>9</td>
<td>Colour and Wood Technics</td>
<td></td>
</tr>
</tbody>
</table>

The groups had to comply with the following conditions: (1) the participating class was a 9th grade class, which means the first year of attending the Werkschule; (2) the entire teaching team (or at least two people from the team) took part in the group interview; (3) the responsibility for the intervention was left to the researcher; and (4) the teachers’ decision to participate was voluntary. To satisfy these conditions, it was necessary to reach maximum comparability in heterogeneous contexts. The first micro-cycle was
based on group 1 (n=12), micro-cycle two on group 2 (n=14), while the third micro-cycle involved groups 3 (n=12), 4 (n=14) and 5 (n=9). This distribution is explained in the following paragraph.

In micro-cycle one, the fit of the different methods related to the target group was investigated. Reflective discussions conducted with the teacher and an external expert in extracurricular youth education validated the process of implementation within group 1. Further, the observations were analysed and feedback from the students was gathered. At the end of micro-cycle one, the first optimisation of the prototype was made (redesign). Relevant changes affected the logical structure of the concept, which refers to the sequence of content and the time structure. Furthermore, the type of methods used within the intervention tended towards a clearly practical orientation rather than theoretical methods, for example, discussion rounds or concept cards.

Micro-cycle two focused on pretesting the research methods for micro-cycle three while testing the optimised version of the intervention (prototype 2). Again, the students’ feedback was used to make changes to the didactical methodological structure. The other aim of micro-cycle two was to collect data regarding what was learned as well as to gather information about any necessary adaptions for micro-cycle three. Therefore, three means of data collection were applied. In order to include several perspectives on the optimisation process, two types of data were collected. The qualitative feedback gathered from the students delivered not only information about what they liked and disliked and why, but also what they thought they had learned. This feedback was noted and compared to the quantitative data regarding their participation in the intervention. Two observers (the researcher and another person with an educational background) evaluated the students’ participation in the intervention. The students were also asked to answer questions regarding their actual state of interest, motivation and sense of well-being (scales adapted from Wolf, 2003) at fixed points during the process. This information was used to obtain an impression of the relation between emotional experience, learning and participation. Additionally, a scale intended to capture the students’ actual expression of social competence was implemented (Inventar Soziale Kompetenzen [ISK]; Kanning, 2009).

Moreover, a final round of quantitative questioning was undertaken regarding motivation (Kramer, Prenzel, & Drechsel, 2000), self-efficacy (Jerusalem, Drössler, Kleine, Klein-Heling, Mittag, & Röder, 2009) and selected items from the self-determination scales (Deci & Ryan, 1993; Kramer, Prenzel, & Drechsel, 2000). The strongly explorative approach of micro-cycle two found that, although the items were simplified linguistically, the students had problems answering the questions. The interim inquiry (self-reported data regarding emotional experience etc.) revealed no major problems. Using a factor analysis and a reliability analysis (non-parametric testing because of the small number of participants), the questionnaires could be reduced and sharpened.

The intervention was implemented in three classes during micro-cycle three. As the intervention was conducted by the researcher herself, it was not possible to run parallel interventions, although each implementation took place within a time span of eight weeks to ensure that the students were all reached in a comparable state. The time schedule was the same for all the schools; only the individual starting and ending time differed. The
intervention lasted five days and contained five different topics and their related work-tasks regarding social competence. The tasks can mainly be differentiated by either a more theoretical (i.e. group discussions) or a more practical (i.e. group-dynamic games) approach. As described above, the following data were collected: participation of the students (observation using a quantitative surveillance sheet by two observers), experience of the process (quantitative self-reports by the students at three fixed points per day) and qualitative feedback from the students regarding individual days. In order to assess the pre- and post-effect of the intervention, daily topic-related concept maps were added and analysed in both qualitative and quantitative ways. Each run was concluded by a digital final inquiry (evaluation software).

To make a determination of the context-relation of the results possible, school-specific issues and observations were noted and discussed by both observers so as to clarify the role of each identified factor and value its anticipated influence on the enhance of social competence. The results are presented in the following section.

4 Core Results of the Iterative Testing

Before introducing the findings, it is useful to restate the leading research questions. What did the students learn? Which contextual factors seem to be enhancing/hindering social competence? Is a “one-size-fits-al” solution for the individual locations of the Werkschule feasible? The results are first presented in relation to the methodological approach (section 4.1). After that, an overall discussion follows. In section 4.2, the results are consolidated into an area-specific model for enhancing social competence in the Werkschule.

4.1 Selected Results of the Concept Validation

The results relate to a comparison between the three groups. Two of them had similar conditions, while the third group served as a reference group. The comparison was not based on taking part or not taking part in the intervention, but instead concerned the age and class level of the students (groups 3 and 4= 9th grade, group 5= 10th grade). Groups 3 and 4 only knew each other for a few weeks, while group 5 was together as a class for over a year, with all the associated and occasionally problematic group dynamics, role allocations and conflicts.

Observation of the Students’ Participation

The students’ participation was valued on bipolar scales regarding the dimensions of oral expression (passive-active, on-topic/off-topic), listening, concentration and respectful handling of others. The reliability of the scales (Cronbach’s $\alpha$ ) ranged from satisfactory ($\alpha=.753$, lowest value) to very good ($\alpha=.916$, highest value). The overall score of all three groups of participating students in micro-cycle three was compared. The observation data included two collection points per day: one related to a more theoretical setting and the other to a more practical setting. In order to identify which settings lead to more active participation, the data concerning both types of methodological settings
were compared. Due to the small number of groups as well as to relate the item-pairs, Kendall’s tau-b ($\tau_b$) was computed. This value is resistant to statistical outliers and is therefore a suitable measure (Caspar & Wirtz, 2007). There were two findings regarding this issue of analysis. First, the item-pairs correlated significantly, especially for the more practical settings. The more theoretical settings showed significance for only half the item-pairs. This leads to the assumption that participation can be better observed in more practical settings. This is of great importance when it comes to assessment in school contexts. Social competence must be assessed where it is shown and not where it is discussed, since practical settings provide a context that leads to the more accurate assessment of existing competence than theoretical settings do. Second, the participation itself appeared to be at a very high level (ranging from “3=rather good” to “4=very good”). It was interesting to note that the reference group presented the highest variations within the observed items. The standard deviation decreased for the more practical settings and the curve progressions of the three groups drew near. This finding suggests that more practical settings represent a better arena for active participation and, relatedly, better learning conditions.

Students’ Experience of the Process
The students’ cognitive and emotional experiences were collected by means of quantitative, self-reported and process-related questionnaires. The items targeted well-being, feeling of being taken seriously, being interested, understanding of the actual topics/tasks and feeling glad to take part. These five items were answered at the start, in the middle and at the end of each working day.

The students’ experience of the working process was on a level similar to their participation. The daily averages concerning experiencing the intervention were higher than $M=3.00$ on three days ($N=$ from 24 to 28; 3= “rather good”). On days three and four, the average was a little lower, with a minimum value of $M=2.97$ ($SD=.029$, $N=24$). Between groups 3 and 4 there were no significant differences, while the reference group differed on nearly all points. The values regarding the experience of the intervention as well as the related participation vary throughout the whole process, much more so in fact than for the other groups. However, the reference group was the group that exhibited the most changes in participants, positive or negative work climate and time structure (beyond the intervention). Taken together, the positive experiences correlated with practical settings, while the results for the more theoretical settings had a higher distribution. The overall experience was mostly positive, which indicates, together with the high values in terms of participation, a productive learning environment.

Effects on Learning
The intervention’s effect on learning was examined in two principal ways. First, the students completed a mind map regarding the daily topic at the beginning of each day. At the end of the day, they were allowed to write some additional words or sentences on their mind map (in a different colour). The mind maps were analysed qualitatively (reference to which topic?) and quantitatively (how many more, if qualitatively relevant?). Second, the students self-reported their subjective perceived expression of social competence
at the start and end of each day. The items were taken from the ISK and the data collection was conducted in a media-based fashion (evaluation software). The utilised subscale was *social orientation*, which was selected due to its high correlation with the topics and targets that the teachers reported to be necessary in the group interview (phase two). The reliability was satisfactory (*prosociality*: $\alpha=.735$, six items; *listening*: $\alpha=.754$, eight items; *plurality of values*: $\alpha=.701$, ten items) and good (*willingness to compromise*: $\alpha=.771$, eight items) to very good (*change of perspective*: $\alpha=.918$, 13 items). The main finding regarding the first part was that the students mostly noted topic-related words or sentences.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>PRE</th>
<th>POST</th>
<th>GES</th>
<th>Words total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Prosociality</td>
<td>80</td>
<td>70.2</td>
<td>30</td>
<td>26.3</td>
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<tr>
<td>Change of perspective</td>
<td>26</td>
<td>35.6</td>
<td>22</td>
<td>30.1</td>
</tr>
<tr>
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<td>27.5</td>
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<td>6</td>
<td>6.5</td>
<td>13</td>
<td>14.1</td>
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<td>10</td>
<td>12.3</td>
<td>55</td>
<td>67.9</td>
</tr>
</tbody>
</table>

As shown in Table 2, on four out of five days, the students referred to the daily topic. Each day, words were added regarding what was seen as an effect on learning. It is noteworthy that for prosociality and listening, the students mentioned more words at the beginning, while the number of added words decreases to up to half of the pre-number. This finding is different for the three other dimensions of social orientation. It is particularly interesting to note the dimensions of willingness to compromise (only a few words, but later more than before) and the plurality of values (four times as many words as before). This aspect will be discussed further following the presentation of the quantitative results derived from the self-reports. One further important finding was that those students who made additional notes had already written something at the beginning of the day ($N=16$, biggest group). However, only three students who presented learning indicators had no prior knowledge in that regard. There was also a group of students who refused to take part in the data collection ($N=6$) for a number of reasons.

The quantitative self-reports concerning social orientation were based on the same structure for each day. The questions regarding the single dimensions were formulated as ‘I know what it means...’, ‘I am able to do...’ and ‘I consider it important that...’ in order to imply all the facets of competence. The analysis showed similar ratings for groups 3 and 4. For each day, the students experienced a little growth in their social competence, whereby the pre- and post-differences were mostly not significant.
The exceptions to this were the dimensions of prosociality and the plurality of values, where the reported learning effect became significant.

The above findings lead to the assumption that some groups found some days that offered a positive learning environment (participation and positive experience) to be accompanied by small, but existing learning effects. Special observations were made for the intervention days one (prosociality) and five (plurality of values). When compared to the other days, differences are apparent. On the first day, the students started the intervention in a motivated, but undifferentiated fashion. The effects on learning became more differentiated during the following days. The result seen for the last day was based on the free and controversial discussion of the heterogeneity of people and individual values. After that, the students were asked to present what they had learned over the course of the week in a presentation of whatever form they liked. On this day, several obviously fostering factors came together. That is, the students were personally affected, adequate room to be creative was provided and the topic was easy to understand for everyone, for example, when compared to the willingness to compromise. Here, many students experienced greater difficulty in developing solutions to the given problems and even explaining what a compromise actually is. In conclusion, an evaluation of the didactical-methodological concept and the identified fostering and hindering factors is briefly presented in order to outline the context.

**Evaluation of the Didactical Concept and Identification of the Fostering Factors**

The didactical and methodological concept was evaluated using the media-based self-reports of the students. The requested dimensions were: (1) topic-related interest, (2) didactic-methodologic conception, (3) competence support (extracted from the self-determination scales following Deci and Ryan [1993] and Prenzel and Drechler [1996]) and (4) context conditions. The reliability of the scales ranged from good to very good. The focus is on which learning conditions were seen as enhancing or hindering social competence. The intervention was valued as rather good. The majority of students preferred the more practical settings and evaluated them as the settings in which they learned the most.

Of additional importance were the clarity of instructions and the comprehensibility of explanations. The two main findings were that the students missed a vocational orientation (subjective relevance of content) in the rather general frame of the content. Further important findings were that the conduct of an external person (independence of person) was experienced as motivating (fun) as well as providing something different from conventional teaching (experience of contrast). The access to social experiences and social integration was evaluated as rather good in all the groups. The perceived difficulty and time schedule seemed to fit with the students’ abilities.
Table 3: Fostering and hindering contextual conditions based on the process observations
(Source: author’s own research)

<table>
<thead>
<tr>
<th>Fostering Conditions</th>
<th>Hindering Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teachers</strong></td>
<td></td>
</tr>
<tr>
<td>Detailed planning</td>
<td>Lone fighter mentality</td>
</tr>
<tr>
<td>Presence in the intervention</td>
<td>Rigid insistence on compliance</td>
</tr>
<tr>
<td>Interest in the intervention</td>
<td>with rules without (critical) discussion</td>
</tr>
<tr>
<td>Appreciation of students</td>
<td></td>
</tr>
<tr>
<td>Active design of relationships</td>
<td></td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td></td>
</tr>
<tr>
<td>Willingness to actively participate</td>
<td>Psychological problems</td>
</tr>
<tr>
<td>Continuous presence</td>
<td></td>
</tr>
<tr>
<td>Appreciation of teachers</td>
<td></td>
</tr>
<tr>
<td>Appreciation of peers</td>
<td></td>
</tr>
<tr>
<td><strong>Teaching</strong></td>
<td></td>
</tr>
<tr>
<td>Long-term design of social competence learning environments and concepts</td>
<td>Lack of structure or continuity</td>
</tr>
<tr>
<td>Integration of teaching and disturbances</td>
<td>Predominant forms of problematic communication</td>
</tr>
<tr>
<td>Transparent problem-solving</td>
<td></td>
</tr>
<tr>
<td>Respectful communication</td>
<td></td>
</tr>
<tr>
<td><strong>Team</strong></td>
<td></td>
</tr>
<tr>
<td>Perception of the team as a unit</td>
<td>Lack of identification with the team</td>
</tr>
<tr>
<td>Perception of enhancing social competence as a common task</td>
<td></td>
</tr>
<tr>
<td>Common teaching objectives</td>
<td></td>
</tr>
<tr>
<td>Resource-oriented perception of students</td>
<td></td>
</tr>
<tr>
<td><strong>Organisation</strong></td>
<td></td>
</tr>
<tr>
<td>Support by school leadership</td>
<td>Lack of time resources needed to explicitly enhance social competence</td>
</tr>
<tr>
<td>Provision of rooms</td>
<td></td>
</tr>
<tr>
<td>Provision of technical equipment</td>
<td>Lack of concepts needed to enhance social competence</td>
</tr>
</tbody>
</table>

Although the concept was beneficial to all the groups from micro-cycle three, there were differences seen with regards to the school environment. The learning environment related to the participating groups was observed throughout the duration of the intervention, but also during the initial introductory meeting. The intervention days with the active participation of the students were reflected by the following variables: (1) teachers, (2) students, (3) teaching, (4) team and (5) organisation. Additionally, all the experiences engaged in with the participating teaching teams were reflected, which
involved the entire research process. The observations were listed and, after reflecting on well-run and problematic situations during the intervention days, condensed into fostering and hindering contextual conditions (Table 3).

The three groups differed not only in relation to the implementation process and the results, but also in terms of the environmental conditions. The two targeted groups demonstrated better conditions in which to, first, run the intervention and, second, lay the foundation for the sustainable implementation of the enhancement approach. In contrast, the reference group combined many hindering factors, especially with regards to the teacher-student relation, which appeared to be an important factor in terms of enhancing social competence.

The results are limited to the method, since the observations were performed while conducting the intervention. A specific focus on observation and less on attendance in the field could have led to more resilient results.

4.2 An Integrated Model for the Enhancement of Social Competence in the Werkschule

Enhancing social competence for disadvantaged young people requires didactic specifics that could be identified and elaborated due the iterative structure of the present study. The findings were brought together in an area-specific model to enhance social competence in the Werkschule, which is presented in Figure 3. The content required a clear relation to the work or living environment. Determining what has to be learned for which reason can provide students with a purpose and increase their motivation, which forms the basis for the emergence of willingness to participate. Work- and learning-related tasks have to be oriented towards the abilities of the students in order to balance support and regulation. Therefore, an adequate degree of complexity is necessary. Furthermore, everything that clearly differs from the familiar aspects of school seems to be motivating, since it does not directly affect negative school experiences. The targeted production of the experience of contrast can be achieved through the irritation of the students by unexpected actions or remarkable changes in the learning environment. Additionally important is the change in the students’ perspectives on social competence. If social competence is seen through the narrow scope of positive behaviour during class, resistance might appear, since this aspect often necessitates a rigid following of rules without an understanding of the subjective triggers.

Moreover, students like to discuss their opinions and moral concepts. In this study, they appeared to like participating in discussions about tangential topics of individual importance. Their teachers’ and their peers’ opinions serve as necessary projections, surfaces and anchors for moral and value orientation, which is itself fundamental for socially responsible actions. Discursivity, therefore, is seen as an important aspect of such fostering approaches. Activity facilitates access to learning and positively influences the motivation to learn. Group-dynamic tasks and exercises related to communication and cooperation also showed a positive effect. Both discursivity and activity are connected through a reciprocal relationship, which accounts for the basic model of social informa-
tion processing. The planning, implementation and reflection of actions belong together as learning aspects, if the ability to act is targeted.

The realisation of work and learning tasks, supplemented by reflexive processes and topic-related discussions, leads to factual knowledge (knowing and understanding various aspects of the learning content), the ability to verbalise those aspects (description and expression of mental states and the connections between single aspects of factors that work together in social action contexts) as well as reflection knowledge. The findings showed that the young people had only rather poor knowledge and ability with regards to initiating productive reflection processes. Due to this, reflection is seen as an inherent facet of learning.

Interestingly, the intervention reached students with and without prior documented knowledge. In this regard, the concept succeeded in the enhancement of the language ability related to social competence. This refers to the ability of the young people to receive stimuli from a social situation and transform them into information (Straka & Macke, 2005). The young people are able to consider adequate actions, not before they understood the Situation’s requirements (signals resp. stimuli). All the learning processes lead to increased ability regarding social action, that is, social competence. The important supporting contextual factors include time (to develop stable changes in per-
sonality and individual possibilities for action), intensive work and learning units as well as the interdisciplinary integration of social competence in class (social competence as an *intense and cross-sectional learning content*), a positively designed learning environment and, finally, the teachers’ model functions as both a chance and a challenge in terms of issues of enhancement.

## 5 Conclusions and Suggestions for Further Research

The present study has made a number of key contributions to the literature. Following the existing requirements of design-based research, it is clear that each research project must lead to a practical output. This is necessary because these types of research designs arise from practical problems and target the development of applicable solutions. Within this study, a didactic-methodologic concept was developed and tested. The final and revised version includes a theoretical foundation, learning goals, recommendations regarding the didactical structure and the choice of methods, and empirically based knowledge concerning how to implement the intervention and related factors that may lead to sustainable change. Two further steps seem to be important. First, the results of the study have to be published to teachers. Second, the teaching staff might require further education on the team-based approach.

In terms of avenues for further research, the findings of this study lead to a couple of questions that are not only important for the Werkschule, but also for all educational contexts: How is the social competence of teaching staff constructed? Which aspects of social competence do teachers require and how strong is their need for further education? Moreover, the construct of social literacy needs to be theoretically developed and proven as a possible pillar of basic education, in addition to literacy and numeracy. The necessity of the ability to express inner experiences in order to reach emotional regulation is widely accepted (Hascher, 2005; Schonert-Reichl & Lawlor, 2010). It has also been proven that successful emotional regulation effects learning motivation in a positive way (Pekrun & Schiefele, 1996). Emotion itself is discussed as being related to the construct of social intelligence (Kang, Day, & Meara, 2006), which effects the cognitive aspect of emotional and social issues. Due to the close intrapersonal and interpersonal connection between the emotional and social aspects, it is clear that knowledge and language ability in the field of social interactions are important conditions for perceiving, understanding, planning and evaluating social actions. The ability to express one’s mental state and situational targets as well as to react adequately linguistically represents an important aspect of social problem solving, which happens to be a core element of the social competence discourse (Merrill et al., 2005). In addition to the linguistic issues, there is the question of cultural aspects as represented in specific understandings of social competence. The adequacy of an action must be seen in the context of interculturality, which is becoming more and more important in the Werkschule and elsewhere. The discussion regarding whether or not situational requirements are legitimate (i.e. in work environments, families, peers, school contexts, etc.) is therefore of high relevance due to the fact of cultural diversity.
Enhancing Social Competence for Disadvantaged Youth

References


**Biographical Note**

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Resource Utilisation and Curriculum Implementation in Community Colleges in Kenya

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Abstract: The study investigated how Catholic-sponsored community colleges in Nairobi utilise the existing physical facilities and teaching and learning resources for effective implementation of Artisan and Craft curricula. The study adopted a mixed methods research design. Proportional stratified random sampling was used to sample 172 students and 18 teachers while four directors of community colleges were purposively selected. Questionnaires were administered to students and teachers, while directors were interviewed. Teaching and learning resources, such as workshops, equipment, lecture rooms, laboratories, raw materials for practical training and reference books, were found to be adequate, although underutilised. However, sports grounds, libraries and course texts were inadequate. Resource inadequacies were often mitigated by signing equipment co-sharing agreements with peer institutions and local firms. Teachers rated highly the influence of physical facilities on curriculum implementation. Both students and teachers rated highly the influence of teaching and learning resources on curriculum implementation. The study concludes that, while some physical facilities and teaching and learning resources are adequate, their underutilisation and the inadequacy of other core facilities and resources, such as libraries and course textbooks, hinder effective teaching and learning in these community colleges.

Keywords: VET, Vocational Education and Training, Artisan and Craft, Community Colleges, Curriculum Implementation, Resource Utilisation

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1 Introduction: Background and Significance of the Study

The realisation of Kenya’s Vision 2030 is anchored on the provisions for quality education and training through Technical and Vocational Education and Training (TVET), which has emerged as an effective human capital development strategy for empowering a technical workforce for rapid industrialisation and national development (Afeti, 2014; Republic of Kenya, 2012a). As such, Kenya emphasises the relevance of TVET in meeting the needs of the labor market by preparing students for work, productivity and competitiveness (African Union, 2007; Korpi, De Graaf, Hendrick, & Layte, 2003). Despite the significance of the sector in spurring growth, issues of insufficient pedagogically competent trainers, inadequate centers, low enrolment, limited customised teaching and learning materials and expensive equipment hinder attainment of this goal (Republic of Kenya, 2012b). Consequently, many TVET students acquire low quality training, thereby limiting their prospects of becoming self-reliant and productive in the labour market (Onsomu, Wambugu, & Wamalwa, 2009).

Global and local studies on the factors influencing effective implementation of TVET programs demonstrate a superficial interrogation of some of these factors. For instance, most studies lack specificity on the adequacy of facilities and resources (Ayuba & Gatabazi, 2010; Hooker et al., 2011; Mupinga, Busby, & Ngatiah, 2006; UNESCO, 2010). More specifically, little empirical evidence exists on Artisan and Craft curriculum implementation thereby creating a dearth of literature in this area. This paper has been adapted from the author’s doctoral dissertation, which investigated the determinants of effective implementation of Artisan and Craft courses in Catholic-sponsored community colleges in the Nairobi region (Kigwilu, 2014). In particular, the paper investigates how Catholic-sponsored community colleges in the Nairobi region utilise the existing physical facilities and teaching and learning resources to enhance effective implementation of Artisan and Craft curricula. The study sought to answer the following research questions:

i How do community colleges utilise physical facilities for effective implementation of Artisan and Craft curricula?

ii How do community colleges utilise teaching and learning resources for effective implementation of Artisan and Craft curricula?

The findings of the study will be useful in a number of ways. Firstly, they will assist the Ministry of Education in making policy decisions on resource allocations to TVET institutions to enhance education and training quality. Secondly, community colleges and other TVET institutions will, based on the findings, adopt measures that will optimise the available resources for effective teaching and learning. Thirdly, given the paucity of extant research on this topic, the findings will enrich the literature on education provisions in community colleges in Kenya, offering a valuable resource for use by scholars and practitioners with a focus on Artisan and Craft curricula.
2 Literature Review and the Adopted Research Framework

First and foremost, quality education hinges on physical facilities that are the ultimate predictors of students’ academic achievements (Yara & Otieno, 2010; Moochi, 2012). Indeed, several studies show that inadequacy of infrastructure, facilities and equipment affects curriculum implementation in TVET institutions (Hooker et. al., 2011; Indoshi, Wagah, & Agak, 2010; Mupinga, et al., 2006; Ayuba & Gatabazi, 2010). Furthermore, reliance on obsolete equipment compromises effective training of youth for a modern economy (UNESCO, 2010). While Indoshi, et al. (2010) observe that vocational schools lack materials, equipment and facilities that are vital for effective teaching and learning, Ayuba and Gatabazi (2010) link the inadequacy of these facilities to inadequate finances in the institutions. Inadequate finances, in turn, shrink the budgets for procuring up-to-date tools and equipment, repairing old equipment and developing training materials (Sharma, 2008). This is echoed in the Taskforce Report (2012) on education in Kenya, which finds that the high costs of training materials and text books, the inadequate physical facilities and the insufficient availability of modern equipment in most TVET institutions adversely affects curriculum implementation. The cited studies point to the inadequacy of many facilities in TVET institutions. On the contrary, Simiyu (2009) established that Kaiboi Technical Training Institute had adequate facilities – namely workshops, laboratory space and machines. Moreover, Messah and Mucai (2011) posit a positive correlation between the adequacy of an institution’s finances and the provisions of that institution’s physical facilities, a position supported by Hicks, Kremer, Mbiti and Miguel (2011). The inverse correlation, though, would emphasise that inadequate finances and inadequate physical facilities ultimately provide fewer opportunities for students to practice with tools and machines, hence negatively impacting student outcomes.

Second, inadequacy of teaching and learning resources is a constraint to implementation of TVET in public institutions (Hailu, 2011). In particular, a lack of standard workshops and modern instructional materials affects the teaching of TVET (Bandele & Faremi, 2012). A corollary effect is the low acquisition of practical skills among students due to ineffective instructional delivery (Dasman, 2011). In many developing nations, inadequate curriculum resources and outdated equipment hinder effective implementation of training and teaching programs (Maino, 2013). In actual fact, teachers’ utilisation of relevant equipment, materials and tools in teaching facilitates learning and enhances students’ achievements (Umunadi, 2012). However, in most of these nations, instructional materials are inadequate for effective teaching in TVET institutions (Wondaferew, 2012). such institutions may have insufficient equipment and lack specialist rooms for practical teaching (Tshabalala Ncube, 2014). Similarly, in Kenya, inadequacy of teaching and learning resources hinders TVET implementation (Indoshi, et al., 2010). This inadequacy is expressed in terms of obsolete equipment (Hooker et. al, 2011), shortage of material resources (Indoshi, et al., 2010; Mupinga, et al., 2006) and insufficient time allocation (Indoshi, et al., 2010). Automobile engines, sewing machines, computers, computer software, textbooks, stationery and internet access are among the resources that are most often inadequate or unavailable (Mupinga et al., 2006).
Finally, the reviewed studies, except those by Mupinga et al. (2006) and Simiyu (2009), lack specificity regarding the physical facilities or teaching and learning resources that affect curriculum implementation. Neither do they describe the levels of adequacy and utilisation of these facilities and teaching and learning resources in TVET institutions. Moreover, the cited studies have been either purely quantitative or purely qualitative in approach, lacking triangulation of the two approaches. These are the empty spaces that the current study focused on filling.

Figure 1 shows the adopted research framework. The framework presents physical facilities and teaching and learning resources as the inputs in the curriculum implementation process. The inputs interact with content, teaching and learning process, assessment and support services in order to yield the intended educational outputs namely syllabus coverage, employability skills and life-long skills.

As discussed in the foregoing literature (e.g. Bandele & Faremi, 2012; Umunadi, 2012; Tshabalala & Ncube, 2014), relevant equipment, materials and tools such as workshops laboratories, lecture rooms course and reference texts are required in the teaching and learning process to yield the intended educational outputs. For instance, the textbooks are useful in development of instructional content and the rooms (workshops, laboratories and lecture rooms) provide supported environment in which learners interact with the content to achieve the intended educational outputs namely syllabus coverage, acquisition of employability skills and life-long skills. The framework holds that both the physical facilities and the teaching and learning resources mutually act together to influence the quality of curriculum implementation. Further, the framework views curriculum implementation as an interplay of content, teaching and learning process, provision of support services, and monitoring and feedback activities in order to achieve the intended educational outputs (Ebenehi, Rashid, & Bakar, 2016). Therefore, the Utilisation of these
physical facilities and teaching and learning resources in the curriculum implementation process eventually determines the kind of outputs of the educational process.

3 Methods and Instruments

This section presents the design adopted for the study, description of the research participants, the administration and validation of research instruments, and data analysis and ethical considerations that guided the study.

3.1 Design

The study adopted mixed methods research design. Data were gathered through cross-sectional survey design. Survey research design was used to describe, explain or explore the existing status of and relationships between variables at a given time.

3.2 Participants

The target population comprised 331 students, 25 teachers and four directors of the community colleges. The teachers were full-time staff with at least six month’s stay in the community colleges. Proportional stratified random sampling was used to select students and teachers from each of the four community colleges. All four directors of community colleges were purposively included in the sample since they were believed to have in-depth understanding of the operations of community colleges. Bartlett, Kotrlik, and Higgins (2001) recommend sample sizes of 169 and 196 for populations of 300 and 400 respectively at margin of error of 0.05. However, since oversampling is recommended to make up for shortfalls between the expected and actual sample size reached, the study sampled 194 participants: 172 students, 18 teachers and four directors of community colleges sampled for the study.

The students’ sample comprised 53.4% and 46.6% of male and female students respectively, relative to their enrolment in courses in the sampled community colleges. Out of the sampled teachers, 55.6% were male and the remaining 44.4% were female teachers. In terms of age, 89.7% of both male students and female students were in 16-25 age bracket. Although there was mean age parity for male students and female students, more age variations existed among female students (M = 21.4; SD = 4.1) than male students (M = 21.4; SD = 3.8).

The mean age of 21.4 is considered normal since students completing secondary education in Kenya usually transit to post-secondary institutions at ages slightly above 18. The teachers were generally youthful (70.0% male teachers and 62.5% female teachers were in 20-35 age bracket) but with fairly large age gaps (M = 33.3, SD = 8.3). This implies that on average, the teachers were at various career growth stages hence likely to bring on board their new and existing knowledge and experiences to create a versatile teaching force for effective implementation of Artisan and Craft courses.
3.3 Instrument Administration and Validation

Questionnaires and in-depth interview guides were used to collect data. Instrument triangulation strengthened the study by compensating for weaknesses of either instrument (Punch, 2009). Other than questions seeking demographic information and open-ended questions in the questionnaire, all other questions were in form of three-point or five-point rating scales. Both teachers’ and students’ questionnaires solicited background information, information on adequacy of physical facilities, and teaching and learning resources, and how they influenced implementation of Artisan and Craft curriculum. The interviews sought detailed information from each director.

The questionnaires were piloted to 28 students and five teachers in three community colleges within Nairobi region. The instruments were content-and face-validated by subjecting them to thorough scrutiny from experts in curriculum studies and specialists in Artisan and Craft courses. The instruments had an acceptable internal consistency (Cronbach’s alpha statistic of 0.72 and 0.73 for teachers’ questionnaire and students’ questionnaires respectively).

3.4 Data Analysis and Ethical Considerations

Quantitative data were analyzed using descriptive statistics such as frequencies, percentages, means and standard deviations. Qualitative data were carefully transcribed as soon as they were recorded from the field, edited, ambiguities removed, and coded into themes that emerged from the responses. The transcribed data were cross-checked against the audio recordings before undertaking a preliminary analysis of key issues emerging from the interviews. Analyzed data were then presented in form of narratives and excerpts. The study adapted the acceptable research ethics; the researchers obtained a research permit from the National Council of Science and Technology (Kenya), sought consent of the directors of the community colleges, teachers and students and assured them that the confidentiality of data, anonymity, their privacy and safety would be observed and maintained.

4 Findings and Discussion

This section presents and discusses the findings of the study based on the two research questions of the study.

4.1 Utilisation of Physical Facilities in Curriculum Implementation

In order to determine the Utilisation levels of physical facilities in the community colleges, students first rated this adequacy as very inadequate (1), inadequate (2), moderately adequate (3), adequate (4) and very adequate (5). Upon computing mean ratings, the facilities were rated as very inadequate (1.0 ≤ M ≤ 1.7), inadequate (1.8 ≤ M ≤ 2.5), moderately adequate (2.6 ≤ 3.3), adequate (3.4 ≤ M ≤ 4.1) and very adequate (4.2 ≤ 5.0). The results are presented in Table 1.
Table 1: Students’ Ratings of Adequacy of Physical Facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>VA f</th>
<th>A f</th>
<th>MA f</th>
<th>I f</th>
<th>VI f</th>
<th>M %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f %</td>
<td>%</td>
<td>f %</td>
<td>%</td>
<td>f %</td>
<td>%</td>
</tr>
<tr>
<td>Workshops</td>
<td>46</td>
<td>31.5</td>
<td>24</td>
<td>16.4</td>
<td>40</td>
<td>27.4</td>
</tr>
<tr>
<td>Equipment</td>
<td>46</td>
<td>31.5</td>
<td>35</td>
<td>24.0</td>
<td>26</td>
<td>17.8</td>
</tr>
<tr>
<td>Lecture rooms</td>
<td>31</td>
<td>21.2</td>
<td>32</td>
<td>21.9</td>
<td>21</td>
<td>14.4</td>
</tr>
<tr>
<td>Laboratories</td>
<td>15</td>
<td>12.5</td>
<td>35</td>
<td>29.2</td>
<td>12</td>
<td>10.0</td>
</tr>
<tr>
<td>Sports grounds</td>
<td>25</td>
<td>17.1</td>
<td>17</td>
<td>11.6</td>
<td>16</td>
<td>11.0</td>
</tr>
<tr>
<td>Libraries</td>
<td>13</td>
<td>8.9</td>
<td>13</td>
<td>8.9</td>
<td>26</td>
<td>17.8</td>
</tr>
</tbody>
</table>

Note: VA = Very Adequate; A = Adequate; MA = Moderately Adequate; I = Inadequate; VI = Very Inadequate; M = Mean

The findings in Table 1 show that workshops and equipment were adequate (M = 3.52 and M = 3.51 respectively). Lecture rooms and laboratories (M = 2.69) were moderately adequate (M = 3.03 and M = 2.49 respectively) whereas sports grounds and libraries were inadequate (M = 2.49 and M = 2.23 respectively). When interviewed, one of the community college directors clarified that physical facilities were adequate relative to student enrolment. The college pegged enrolment on available facilities as echoed in the following excerpt:

“We have equipped our college with modern facilities and equipment to prepare our students adequately for the job market. We do not therefore admit more students than our facilities can accommodate. We invest in facilities to produce graduates that are highly marketable.”

Similarly, directors from other community colleges opined that workshops and equipment for training were adequate. The foregoing contradicts the TVET baseline survey finding (Hooker et al., 2011) that equipment in TVET institutions in Kenya are inadequate and obsolete.

The interviews further revealed that community colleges collaborated with local firms to enable students interact with latest technology in the industry. A director emphasised that the college arranged visits to neighboring firms where students would have hand-on experience with latest equipment particularly in electrical installation and dress-making. Another strategy emphatically advanced by the directors was through signing agreements with some workshops and public institutions. This strategy facilitated not only efficient Utilisation of existing physical facilities (such as sports grounds) but also ensured that students had practical sessions for courses with inadequate facilities.

Moreover, the interviews revealed that community colleges co-shared facilities and equipment. This is not only an innovative strategy in overcoming inadequacy of facilities, but also an effective way to stay up-to-date with technology and share costs of
facilities among institutions involved. However, the co-sharing strategy may not provide students with sufficient time to interact with the facilities thereby hindering their optimal acquisition of practical skills.

Table 2 shows divergent viewpoints of students and teachers with regard to influence of physical facilities on implementation of Artisan and Craft curriculum.

Table 2: Students’ and Teachers’ Views on Influence Physical Facilities on Curriculum Implementation

<table>
<thead>
<tr>
<th>Respondent</th>
<th>High Influence</th>
<th>Low Influence</th>
<th>No Influence</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Students</td>
<td>44</td>
<td>30.1</td>
<td>70</td>
<td>47.9</td>
</tr>
<tr>
<td>Teachers</td>
<td>11</td>
<td>61.1</td>
<td>3</td>
<td>16.7</td>
</tr>
</tbody>
</table>

Whereas more students (47.9%) rated the influence of physical facilities on implementation of curriculum as low, a large proportion of teachers (61.1%) rated it as high. This shows that teachers place high importance on the role of physical facilities in effective implementation to availability of physical facilities than students do, a position supported by the directors who emphasised that adequacy of physical facilities enhanced effective teaching and learning of Artisan and Craft courses.

4.2 Utilisation of Teaching and Learning Resources in Curriculum Implementation

The adequacy levels of teaching and learning resources in community colleges were rated by students as shown in Table 3.

Table 3: Students’ Rating of Adequacy of Teaching and Learning Resources

<table>
<thead>
<tr>
<th>Resource type</th>
<th>VA</th>
<th>A</th>
<th>MA</th>
<th>I</th>
<th>VI</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
</tr>
<tr>
<td>Raw materials for</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>practical</td>
<td>51</td>
<td>34.9</td>
<td>27</td>
<td>18.5</td>
<td>22</td>
<td>15.1</td>
</tr>
<tr>
<td>Reference books</td>
<td>15</td>
<td>10.3</td>
<td>20</td>
<td>13.7</td>
<td>47</td>
<td>32.2</td>
</tr>
<tr>
<td>Course textbooks</td>
<td>14</td>
<td>9.6</td>
<td>14</td>
<td>9.6</td>
<td>43</td>
<td>29.5</td>
</tr>
</tbody>
</table>

Note: VA = Very Adequate; A = Adequate; MA = Moderately Adequate; I = Inadequate; VI = Very Inadequate; M= Mean
The students’ mean ratings revealed that raw materials used in practical training were adequate ($M = 3.44$). Reference books and laboratories were moderately adequate ($M = 2.74$ and $M = 2.69$ respectively). However, course textbooks were inadequate ($M = 2.51$) in community colleges. The implication of this finding is that quality teaching and learning in community colleges is compromised by these inadequacies. Eventually, the low quality training affects student academic achievement hence limits prospects of self-reliance and productivity in the labour market (Onsomu et al., 2009; Yara et al., 2010; Moochi, 2012).

In support of this finding, a director lamented that most textbooks were outdated relative to the changing technology:

“We have a problem with providing current textbooks to students. The textbooks we have were purchased ten years ago. So our students do not get new knowledge from reading them.”

This finding corroborates Indosh, et al. (2010) and Mupinga, et al. (2006) findings that TVET institutions lack adequate teaching and learning resources including textbooks and stationery which hinder effective teaching and learning. On the contrary, other directors opined that the teaching and learning resources were underutilised. For instance, a director said that despite adequate provision of raw materials, some teachers spent more time on teaching theory at the expense of practical content. Another reason fronted for underutilisation of resources was low student enrolment especially in courses for which facilities were provided such as masonry. Whereas underutilisation of resources due to low student enrolment may not have direct effect, deliberate underutilisation by teachers is likely to negatively affect the implementation of the Artisan and Craft curriculum. This is because students are eventually exposed to too much theory at expense of practical sessions hence become deficient in application of the theoretical knowledge after graduating.

Table 4 shows divergent viewpoints from students and teachers on influence of teaching and learning resources on implementation of Artisan and Craft curriculum. Both students and teachers rated highly the influence of teaching and learning resources on implementation of curriculum (56.8% and 66.7% of students and teachers respectively). This corroborates other documented knowledge that lack of teaching and learning resources hinder the teaching and learning of vocational courses (Mupinga et al., 2006; Daudau, 2010; Bandele & Faremi, 2012; Hailu, 2011; Hooker et al., 2011; Mupinga, Indoshi et al., 2010). This finding implies that students attribute effective curriculum implementation to teaching and learning resources more than to physical facilities.
Table 4: Students’ and Teachers’ Views on Influence Teaching and Learning Resources on Curriculum Implementation

<table>
<thead>
<tr>
<th>Respondent</th>
<th>High Influence</th>
<th>Low Influence</th>
<th>No Influence</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Students</td>
<td>83</td>
<td>56.8</td>
<td>48</td>
<td>32.9</td>
</tr>
<tr>
<td>Teachers</td>
<td>12</td>
<td>66.7</td>
<td>3</td>
<td>16.7</td>
</tr>
</tbody>
</table>

5 Conclusions and Discussion

Based on the findings, the study concludes that, while some physical facilities and teaching and learning resources are adequate, their underutilisation and the inadequacy of other core facilities and resources, such as libraries and course textbooks, hinder effective teaching and learning. Although the sharing of facilities and resources with peer institutions and local firms is a commendable strategy, its gains are short-lived. Effective teaching and learning may be hampered by a disrupted learning environment and the anxiety that accompanies such an environment. When the quality of teaching and learning is affected, syllabus coverage is compromised, and students graduate with insufficient mastery of the desired knowledge and competencies. Thus, for effective curriculum implementation, community colleges should not only provide adequate physical facilities and resources, but also optimise the utilisation of these facilities and resources. Finally, a quantitative study on the ratios of facilities and resources to students enrolled in the various courses offered in community colleges may generate a deeper understanding of resource utilisation levels in community colleges.

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Dr Winston Jumba Akala is the Dean, School of Education, of the University of Nairobi, Kenya. He is a Fulbright Scholar and Associate Professor of research and statistics in education. He has vast experience in research and training, higher education curriculum design, and teacher education.
Book Review: Vocational Education and Training in Times of Economic Crisis

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Book Review


The book was published in the series Technical and Vocational Education and Training: Issues, Concerns and Prospects. Series Editor-in-Chief is Rupert MacLean. Editor of the volume is Matthias Pilz, professor and holder of the chair of Economic and Business Education and director of the German Research Center for Comparative Vocational Education and Training (G.R.E.A.T) at the University of Cologne in Germany.

Purpose

The comprehensive volume with 26 articles and 43 contributors is structured in four parts: International Comparative Studies (Part I, 11 chapters), Asia - Including India and Excluding China (Part II, 4 chapters), China (Part III, 4 chapters), United States of America (Part IV, 2 chapters), Europe (Part V, 5 chapters), Theoretical/Conceptual (Part VI, 4 chapters). As the sub-title indicates, lessons around the world with different vocational education and training (VET) cultures, systems, policies and practices are incorporated in one volume. The diversity in VET becomes visible, accessible and comparable on two levels: within the articles with specific comparable approaches and across the articles with the composition and selection of the presented articles in one

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volume. This diversity of perspectives is one central strength of the volume. Another central strength is the common factor underlying and joining the different chapters: the focus on the relation between VET and economic crisis with a massive impact on (youth) unemployment, state funding, the role of the companies, reactions of younger and older people and labour migration. Some articles directly address VET in times of economic crisis, others discuss challenges and developments in a more general way, and all articles are carving out the dynamic configuration and development of VET embedded in traditions and culture, present needs and future challenges. The book is starting with a foreword by Shyamal Majumdar, a preface by Matthias Pilz and a series editors introduction by Rupert MacLean.

Content

The first part, *International Comparative Studies*, is introduced by Madhu Singh. Madhu Singh deals with alternative transitions to further learning for young people from less qualified backgrounds in conjunction with pathways established and maintained through National Qualifications Frameworks (NQFs). Evidence is taken from 33 case studies compiled by the UNESCO Institute for Lifelong Learning (UIL) for the Global Inventory of National and Regional Qualifications Frameworks, which are used to highlight whether and how NQFs are actually supporting alternative routes for youth in crisis. Following, Antje Barabasch outlines the challenges of career management without structural support in the context of lifelong learning. Taking the examples of Denmark, France, Italy and Spain, three individuals who followed a vocational calling with different success rates are portrayed and analysed. The findings of the study provide knowledge about the policy’s interest in how different types of learning interact across the lifetime course and how they may facilitate mobility in the labour market. In their literature review, Oscar Valiente and Rosario Scandurra systematise international evidence on some of the challenges and dilemmas that governments in OECD countries face when they want to implement large-scale dual apprenticeship programmes. To make dual apprenticeships attractive to both employers and students is identified as the government’s primary challenge. Valentina Barcucci, Lea Zanola and Michael Axmann focus on the labour market outcomes of young people who have completed secondary or post-secondary VET in seven middle-income countries: Jamaica, Jordan, Peru, Tunisia, Ukraine, Viet Nam and Zambia. Náder Alyani and David Guile geographically concentrate on Tehran, Jeddah, Abu Dhabi and Dubai. Their aim is to explore the learning and upskilling required for innovating in the nascent creative sub-sectors and analyse the in-situ learning episodes within a conceptual model. Marthe Geiben and Philipp Grollmann analyse the induction process of job entrants in two sectors, car mechatronic/car mechanics and nursing occupations, that show great similarity in the tasks to be fulfilled across countries. The comparative study was conducted in Germany, the United Kingdom, Spain and the Republic of Korea. Lorenz Lassnigg undertakes a comparative analysis of Austria, Germany and Switzerland in order to de-
termine how the three countries have retained their low levels of youth unemployment through the economic crisis.

The second part, Asia - Including India and Excluding China, begins with S. Nayana Tara and N. S. Sanath Kumar and their contribution to initiatives in skill upgrading in industrial training institutes in Karnataka, India. Their field study provides insight regarding the success of new initiatives including modernization of centers of excellence with the aim of contributing to India’s transition to a knowledge-based economy that requires a new generation of educated and skilled people. Thomas Schröder provides an overview of the development of RAVTE, an autonomous and independent civil society organization. His contribution is to be regarded as a blueprint for development based on participatory action research and underlying theories. In their case study, Nonthalee Prontadavit and Sirilak Hanvatananukul investigate the policies pertaining to transferable skills in VET and curriculum for VET in Thailand. The findings are discussed with possible recommendations to take required measures at government, institutional and instructor levels. With regard to the government’s attempt to improve the quality of TVET in Bangladesh, Faruque A. Haolader, Khan M. Foysol and Che Kum Clement provide comprehensive insight into the current situation of Bangladesh’s TVET system. Their chapter covers issues such as curricula development, teacher qualification, and current initiatives to enhance the relevance of TVET and promote enrolment and female participation.

The third part, China, begins with a chapter by Zhiqun Zhao, Zhixin Zhang and Felix Rauner. Their study attempts to test and verify the usefulness of the KOMET competence assessment concept, introduced in China in 2008, for VET teachers. Levels and features of the professional competence of VET teachers are determined and the main factors affecting the development of their professional competence are analysed, which provides valuable references for policy making and discussion. Jun Li attains deeper insight into the vocational identity and professional development of vocational school teachers in China. His paper endeavours to offer a basic overview of what Chinese vocational teachers think of their profession and what factors may influence their professional development. The studies’ results offer a basic picture of VET teachers’ reasons for their choice of profession, their selection process and critical self-reflexions. Ni Tang and Weiping Shi provide a comprehensive overview of current challenges in China’s employment crisis. This chapter outlines the VET policies that were implemented by the Chinese government in order to improve high (youth) unemployment rates, mismatches and shortages of skilled labour that are attributable to the structural crisis of the Chinese labour market. Zhen He, Liangcai Xie and Yuzhu Li investigate the current state of school-enterprise cooperation in China through a quantitative and qualitative approach involving higher vocational colleges and enterprises. Institutional complementary theory functions as analytical framework for this study.

The fourth part, United States of America, is introduced by a chapter from Robert I. Lerman that deals with firms’ workforce strategies. He focuses on their apprenticeships, examining the factors that influence firm choices about providing one type of general training-apprenticeships. Christopher Zirkle provides a comprehensive overview of the United States VET system and provides insight into secondary vocational education
and its historical development including curriculum changes. He also outlines pathways, discusses funding and points to actual, as well as future, challenges for the United States’ VET system.

The fifth part, *Europe*, consists of five chapters. In the first contribution, Philipp Gonon emphasises Switzerland’s way to a highly regarded apprenticeship system. He discusses debates on and ways of dealing with quality doubts and shows demands and values that could be integrated into Switzerland’s VET system. Addressing mismatch in Spain, Aurora López Fougés acknowledges the need to assess the relationship amongst education, skills and labour market demand. A human-centred approach is used in order to explore the reasons for mismatches and the consequences to the individual. In the following chapter, Tim Grebe and Stefan Ekert summarize the primary findings of the external evaluation of the pilot programme JOBSTARTER CONNECT in Germany. The focus of the project is on training modules that have been implemented in selected regions in order to increase the quality of qualification measures in prevocational training. The chapter from Franz Kaiser, Silvia Annen and Michael Tiemann is based on the findings of a research project at the German Federal Institute of Vocational Education and Training (BiBB). The project aims at examining the similarities and differences between occupations in the sectors of service and production. In her contribution, Sabrina Berg deals with meritocracy in the German education system. She presents results on the impact of family backgrounds and the perceptions of teachers towards the family backgrounds of pupils; the implications for teachers and teacher training are also discussed.

The sixth and last part, *Theoretical/Conceptual*, begins with a paper from Jim Hordern that focuses on the constitution of vocational knowledge and the development of an analytical framework. The discussion is bolstered with examples of regions and recontextualisation processes taken from recent studies of higher apprenticeships in England. Stefan Wolf outlines the results of the successful transfer project, Water-Energy-Building Training and Transfer (WEB-TT), aiming at the improvement of the highest level of construction workers in an Egyptian context. Theoretical concepts underlying this project are explained and reflected upon. In her paper, Lorna Unwin deals with the question of whether VET research is keeping pace with change and continuity in work. This chapter offers a reflection on the way in which the interplay of change and continuity might require a more substantive and relational approach across the VET landscape. The section closes with a contribution from Matthias Pilz in which he presents an analytical tool that can be used to categorise individual countries in terms of the way VET is perceived and designed within the specific socio-cultural context. He focuses on the actual transfer of all or part of a VET system from one country to another. His *6P strategy* is based on the findings documented in the literature and supplemented with the author’s experience of a range of transfer projects.
Conclusion

The volume encompasses two central messages. First, there is not one best way and/or solution for VET systems in the world. Second, VET is diverse and needs diverse approaches, but this does not imply that this diversity is not accessible or disruptive. The volume enables wide and deep insights by means of country cases, field studies, pure research and policy papers, and it opens the perspective to the richness and value of diversity. Additionally, mutual learning can be stimulated from an international comparative perspective. This volume is therefore valuable for various stakeholders, researchers, practitioners and politicians regardless of their previous orientation whether it is more national or already international.

Biographical Notes

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