University of Verona
Department of Human Sciences
Ph.D. School of Humanities
Ph.D in Human Sciences
XXXIV Cycle / 2018

Vytautas Magnus University
Ph.D. in Education Science

Competence-based VET curriculum enactment and its implications for vocational teachers and trainers' practices and competence in Italy and Lithuania

Doctoral Dissertation

S.S.D. M-PED/03

Social sciences, Education science (S 007)

Tutors:

prof. Chiara Sità (University of Verona)

prof. Vidmantas Tūtlys (Vytautas Magnus University)

Ph.D. candidate: Lina Vaitkutė

2023

Competence-based VET curriculum enactment and its implications for vocational teachers and trainers' practices and competence in Italy and Lithuania

Lina Vaitkutė, Tesi di Dottorato
Verona, 2023

Competence-based VET curriculum enactment and its implications for vocational teachers and trainers' practices and competence in Italy and Lithuania

Lina Vaitkutė, Doctoral thesis
Verona, 2023

Abstract

Building on Lithuanian and Italian vocational education and training (VET) curriculum enactment cases the thesis offers fresh perspective on contemporality and relevance of competence-based (CB) curriculum for VET practice and VET learners, its' defining elements and possible variations at theoretical-conceptual and governing-regulatory levels. CB curriculum model is applied in many countries' education systems and is considered to be particularly relevant in VET systems. By playing its role in developing 'competent' graduates in line with labor market needs, VET establishes itself as an increasingly important part of skill formation system. At the same time, the 'competence' term and, consequently, approaches to CB education are challenged by scholars and practitioners, who also question the value of the approach. Transformation of competence construct and its fluctuation between orientation at concrete narrow work tasks and broader holistic competence, need to be acknowledged too.

In this context, the research aims at revealing and comparing the processes of competence-based VET curriculum enactment and its problematic areas in the VET systems of Lithuania and Italy. The research also explores changes in the work of vocational teachers and trainers brought by implementation of the competence-based VET curricula and illuminates personal implications of these changes for vocational teachers and trainers' identity and competence needs. This comparative research focuses on school-based systems which may struggle to provide rich and meaningful workplace curriculum being crucial for learners' competence development.

To explore the educational phenomenon in a natural setting qualitative research paradigm was applied. The research was structured in three stages: comparative analysis of competence-based VET curriculum reforms and vocational teachers and trainers training institutional framework, comparative empirical research of CB curriculum enactment and identification of methodological and institutional factors necessary for professional development of vocational teachers and trainers. The research data was drawn from three main sources: academic literature review, analysis of policy, governing and practice level documents and comparative empirical research of CB curriculum enactment. In the latter data was collected using semi-structured interviews and analyzed by applying a qualitative content analysis method. The empirical research is based on 48 interviews with vocational teachers and trainers and administration staff in Lithuania and in Italy.

The research allowed to conceptualize the 'what' and 'how' of CB curriculum enactment processes in the context of overall skill formation system and under influences of external, organizational and individual constraining and facilitating factors. The curriculum enactment has emerged as a relational and dynamic process consisting of a complex pattern of teachers and trainers' activities starting with interpretation and translation of intended curriculum goals and finalizing with assessment of learners' competence achieved with collaborative enactment emerging as the core curriculum principle and transformation. It also uncovered how differently teachers' agency manifests in regard to curriculum enactment.

Sommario

Basandosi su casi di implementazione del curricolo di Istruzione e Formazione Professionale (IeFP) in Lituania e in Italia, la tesi offre una nuova prospettiva sulla contemporaneità e sulla rilevanza del curricolo basato sulle competenze (*competence-based curriculum)* per la pratica della IeFP e per gli studenti, sui suoi elementi definitori e sulle possibili variazioni a livello teorico-concettuale e normativo-governativo. Il modello di curricolo basato sulle competenze è applicato nei sistemi educativi di molti Paesi ed è considerato particolarmente rilevante nei sistemi di IeFP. Svolgendo il proprio ruolo nello sviluppo di qualificati e diplomati "competenti" in linea con le esigenze del mercato del lavoro, l'IeFP si afferma come parte sempre più importante del sistema di formazione delle abilità (*skill formation system)*. Allo stesso tempo, il termine "competenza" e, di conseguenza, gli approcci all'educazione basati sulle competenze sono messi in discussione da accademici e professionisti, che ne mettono in dubbio anche il valore. È necessario riconoscere anche la trasformazione del costrutto di competenza e la sua fluttuazione tra l'orientamento a compiti lavorativi concreti e ristretti e un'idea olistica, di raggio più ampio, di competenza.

In questo contesto, la ricerca mira a far emergere e mettere a confronto i processi dell'attuazione (*enactment)* del curricolo IeFP basato sulle competenze e le sue aree di problematicità nei sistemi IeFP di Lituania e Italia. La ricerca prevede anche l'esplorazione dei cambiamenti nel lavoro degli insegnanti e dei formatori professionali legati all'implementazione dei curricula IeFP basati sulle competenze, rivelando le implicazioni di questi cambiamenti per l'identità e le necessità di competenza degli insegnanti e dei formatori. Questa ricerca comparativa si concentra sui sistemi scolastici che possono avere difficoltà a fornire un curricolo ricco e significativo sul posto di lavoro, aspetto fondamentale per lo sviluppo delle competenze degli studenti.

Per esplorare il fenomeno educativo in un contesto naturale è stato usato un paradigma di ricerca qualitativa. La ricerca è stata strutturata in tre fasi: 1. analisi comparativa delle riforme del curricolo IeFP basato sulle competenze e del quadro istituzionale della formazione degli insegnanti e dei formatori professionali; 2. ricerca empirica comparativa della messa in atto del curricolo IeFP; 3. identificazione dei fattori metodologici e istituzionali necessari per lo sviluppo professionale degli insegnanti e dei formatori professionali.

I dati della ricerca sono stati ricavati da tre fonti principali: la revisione della letteratura scientifica, l'analisi di documenti di orientamento politico e normativo, documenti di livello amministrativo e di livello pratico e la ricerca empirica comparativa sull'attuazione del curricolo basato sulle competenze. In quest'ultima i dati sono stati raccolti utilizzando interviste semi-strutturate e analizzati applicando il metodo dell'analisi qualitativa del contenuto *(qualitative content analysis).* La ricerca empirica si basa su 48 interviste a insegnanti e formatori professionali e al personale amministrativo in Lituania e in Italia.

La ricerca ha permesso di concettualizzare il "cosa" e il "come" dei processi di attuazione del curricolo basato sulle competenze nel contesto del sistema complessivo di

formazione delle competenze, nonchè l'influenza di fattori esterni, organizzativi e individuali che limitano e facilitano questa attuazione.

L'attuazione del curricolo è emersa come un processo relazionale e dinamico che consiste in un complesso schema di attività da parte di insegnanti e formatori che inizia con l'interpretazione e la traduzione degli obiettivi curricolari previsti e termina con la valutazione delle competenze degli studenti e con l'attuazione collaborativa che emerge come principio e trasformazione centrale del curricolo stesso.

La ricerca ha infine rivelato come l' agentività degli insegnanti si manifesti in modo diverso in relazione all'attuazione del curricolo.

Santrauka

Remiantis profesinio mokymo turinio įveiklinimo Lietuvoje ir Italijoje atvejais, disertacijoje siūloma nauja perspektyva į kompetencijomis grindžiamo mokymo turinio šiuolaikiškumą ir aktualumą profesinio mokymo praktikai ir mokiniams, jo esminius elementus teoriniu-konceptualiuoju ir reglamentavimo lygiais bei galimus variantus. Kompetencijomis grindžiamo mokymo turinio modelis taikomas daugelio šalių švietimo sistemose, o profesinio mokymo sistemoms šis modelis laikomas ypatingai tinkamu. Ruošdamas „kompetentingus“, pagal darbo rinkos poreikius, absolventus, profesinis mokymas įsitvirtina kaip vis svarbesnė įgūdžių formavimo sistemos dalis. Tuo pačiu metu, akademikai ir praktikai kvestionuoja kompetencijomis grindžiamo mokymo modelius bei kelia abejones dėl jų vertingumo. Reikia pripažinti ir kompetencijos konstrukto transformaciją bei jos svyravimus tarp orientacijos į konkrečias siauras darbo užduotis ir platesnės holistinės kompetencijos.

Šiame kontekste tyrimu siekiama atskleisti ir palyginti kompetencijomis grindžiamo mokymo turinio įveiklinimo procesus bei jo probleminius laukus Lietuvos ir Italijos profesinio mokymo sistemose. Tyrime taip pat nagrinėjami profesijos mokytojų darbo pokyčiai, atsirandantys įgyvendinant kompetencijomis grindžiamą mokymo turinį, bei atskleidžiamos šių pokyčių implikacijos profesijos mokytojų identitetui ir kompetencijoms. Lyginamasis tyrimas sutelktas ties mokyklinėmis sistemomis, kurioms gali kilti sunkumų užtikrinant turiningą ir prasmingą darbo vietos *curriculum,* turintį didelės reikšmės mokinių kompetencijų ugdymui.

Siekiant ištirti švietimo fenomeną natūralioje aplinkoje buvo taikoma kokybinio tyrimo paradigma. Tyrimą sudarė trys etapai: lyginamoji kompetencijomis grindžiamo mokymo turinio reformų ir profesijos mokytojų rengimo institucinės sąrangos Italijoje ir Lietuvoje analizė, lyginamasis empirinis kompetencijomis grindžiamo mokymo turinio įveiklinimo tyrimas ir profesijos mokytojų kompetencijoms plėtoti būtinų metodologinių ir institucinių faktorių nustatymas. Duomenims surinkti naudoti trys pagrindiniai šaltiniai: mokslinių šaltinių analizė, politikos, mokymo turinį reglamentuojančių ir praktikos dokumentų analizė ir lyginamasis empirinis mokymo turinio įveiklinimo tyrimas. Empirinio tyrimo duomenys surinkti pusiau-struktūruotų interviu pagalba ir analizuoti taikant kokybinę turinio analizę. Empirinio tyrimo pagrindas – 48 interviu su profesijos mokytojais ir administracijos atstovais Lietuvoje ir Italijoje.

Tyrimas leido konceptualizuoti kompetencijomis grindžiamo mokymo turinio įveiklinimo objektą – „ką“ - ir procesus – „kaip“ – bendrosios įgūdžių formavimo sistemos kontekste, veikiant varžantiems ir paremiantiems išoriniams, organizaciniams ir asmeniniams faktoriams. Mokymo turinio įveiklinimas iškilo kaip sąryšinis ir dinamiškas procesas, kompleksiška profesijos mokytojų veiklų struktūra, apimanti įvairias veiklas, pradedant numatyto mokymo turinio tikslų interpretavimu ir vertimu ir baigiant mokinių įgytų kompetencijų vertinimu. Kolegialus įveiklinimas atsiskleidė kaip esminis kompetencijomis grindžiamo mokymo turinio įveiklinimo principas ir transformacija. Taip pat, išryškėjo, kaip skirtingai mokymo turinio procesuose gali būti patiriama mokytojų veikmė.

Table of contents

List of tables

List of figures

List of boxes

INTRODUCTION

Research problem and background

To date there are diverse views on the foundation and organizing principles of vocational education and training (VET) curriculum. One of the most widespread approaches is competence-based (CB) curriculum model. The concept of competence is applied not only in VET curriculum, it is also employed in higher education and general education sectors. However, the concept and CB education approach are highly contested with academic debate targeting manifold aspects of competence: the term and its definition, dimensions, methodology and, not the least, the value of CB education.

Although CB education has been in the focus of research and academic and political discussions for many years, theoretical concepts and practical application of competence and CB education / curriculum are still subject to many interpretations and disagreements (Mulder, 2017). It has to be acknowledged that despite the fact that CB education has been and still is extensively studied, these analyses are more of a theoretical nature and often ignore practice level (Cedefop, 2022; Wesselink & Zitter, 2017). They frequently omit the idea of curriculum which is oriented at competence development and call for completely different, 'non-instrumental', 'situational' epistemological perspective (Bagnall & Hodge, 2017). Critics (Lum, 1999; Wheelahan, 2016) often confine themselves to the discourse of neglecting any possibilities of progressive evolution of CB education.

Yet, the competence and its narrower variant competency (competencies) are legitimated and broadly used concepts in European countries' education, human resources, labor market policy and practice, moreover, learning outcomes approach is promoted in qualifications and curriculum within European and national education policies. The latter approach is closely associated with CB education. It is common that various standards and frameworks, developed by educational and labor market actors, govern VET curriculum in terms of taught content, learning outcomes to be achieved and curriculum frames and structure. At the same time, other references and guidelines about demanded learners' competencies which are non-binding but still powerful due to their object (a vision of learner) or authorship (for instance, designed by a supranational organizations) are circulating and have a discursive effect on teachers and trainers, who must find their ways how to integrate all these ideas into their pedagogical practice.

Researchers acknowledge the lack of research about situated teaching and learning processes, teachers in CB education (Cedefop, 2022; Mulder, 2017, p. 1091), empirical

evidence about CB education effects (Mulder, 2017; Wesselink, de Jong, et al., 2010), and invite to research actual practices of CB curriculum enactment to support effectiveness of academic critique (Edwards, 2016, p. 254).

The idea of the thesis was also driven by author's personal experience of more than fifteen years of work with European and national VET policy initiatives, insider participation and observation of development of national qualification standards and VET curriculum. The interest in the research topic is grounded on the idea that competence is a socially constructed communication medium supposed to facilitate communication of society, labor market and education system about skills demands. Using competence as the foundation of training programme educationalists try to make training more targeted, responsive and valuable to learners by generating assets for their career and wellbeing. This approach requires careful consideration of how the competence is conceptualized and operationalized. But the key question is does it work or maybe there are better alternatives? How is competence discursively and socially constructed and then enacted?

Thus, the thesis addresses the need to show the reality around CB education enactment and to give an account of enactment practices of CB curriculum. By employing a qualitative model of enquiry, it attempts to illuminate the perspective of VET practitioners and their challenges in contributing to learners' competence development and skill formation in general. It is also relevant to explore how teachers experience agency in dealing with written curriculum, what are their decisions and actions to enact it, how they feel in interacting with others, what are agency enabling and constraining factors and how teachers overcome them. The thesis aims to clarify the core aspects of CB curriculum enactment in school-based systems and to contribute to the academic debate on the relevance of CB education and, at the same time, on the future of VET curriculum. To underline a relationality of CB education, a holistic approach to CB education consisting of macro (policy), meso (VET and labor market institutions) and micro (learner) levels has been chosen.

The need for comparative research of locally situated VET processes has been noted (Evans, 2020). Referring to the fact that holistic research on realization of competence-driven curriculum in Lithuania and in Italy is scarce (Ronchetti, 2017; Tūtlys & Aarna, 2017) it is a belief of the author that comparative research on CB curriculum enactment is particularly relevant. Constant labor market, technological and societal transformations call for regular revision and dynamic change of school-level curriculum. The VET systems of Italy and Lithuania are institutionally based on the dominant role of VET institutions in the provision of training. This institutional model presents specific challenges in implementing CB curricula.

Comparative research in Italy and Lithuania will provide knowledge and ideas for both policy learning and generating new methodological approaches in fostering of vocational teachers training and competence development.

The goal of research

to reveal the processes of competence-based VET curriculum enactment and its problematic areas in Lithuanian and Italian school-based VET systems, while assessing related transformations in the work of vocational teachers and trainers and their implications for vocational teachers and trainers' competence needs.

Research questions

1) How does implementation of competence-based education change VET processes and systems in Italy and Lithuania?
2) How do vocational teachers and trainers enact competence-based curriculum?
3) What are the implications of the implementation of competence-based curricula for vocational teachers and trainers' activities and competence?

Methodology of research

Due to the explorative nature of research the qualitative research paradigm is applied. Qualitative research enables to explore the educational phenomena in a natural setting. The research data is drawn from three main sources: literature review, comparative analysis of curriculum reforms, policy documents and vocational teachers and trainers training institutional framework and comparative empirical research of CB curriculum enactment in Lithuania and in Italy. In the latter data was collected using semi-structured interviews and analyzed by applying a qualitative content analysis method (Mayring, 2014; Schreier, 2012; Žydžiūnaitė & Sabaliauskas, 2017).

Presentation of research

Articles / publications

- Tūtlys, V., Vaitkutė, L., Bukantaitė, D. (2022). Development of Competencies and Qualifications of the VET Teachers and Trainers in Lithuania. In: Bünning, F., Spöttl, G., Stolte, H. (eds) Technical and Vocational Teacher Education and Training in International and Development Co-Operation. Technical and Vocational Education and Training: Issues, Concerns and Prospects, vol 34. Springer, Singapore. https://doi.org/10.1007/978-981-16-6474-8_21
- Tutlys, V., & Vaitkute, L. (2022). Knowledge formation practices in the context of the VET curriculum reform in Lithuania. Journal of Vocational Education & Training, 74(1), 126–145. https://doi.org/10.1080/13636820.2021.1956998

- Vaitkute, L., Perini, M., Tacconi, G. (2019). Implications of competence/learning outcomes based VET curriculum reforms for the vocational teachers and trainers in Italy and Lithuania. In B. E. Stalder & C. Nägele (Eds.), Trends in vocational education and training research, Vol. II. Proceedings of the European Conference on Educational Research (ECER), Vocational Education and Training Network (VETNET) (pp. 405–413). https://doi.org/10.5281/zenodo.3371607
- Vaitkute, L. (2019). Modelli di istruzione e formazione professionale in Europa e cambiamenti pre-visti. In Rassegna CNOS Problemi Esperienze Prospettive per l'istruzione a la Formazione Professionale. Anno 35 - N. 1 Gennaio-Aprile 2019 (pp. 93-108)

Presentation in conferences

- Lina Vaitkute and Vidmantas Tūtlys. 'Enactment of competence-based curriculum in school-based VET systems: contemporary implications, changing roles and responsibilities of VET teachers and trainers'. ECER 2022 'Education in a Changing World: The impact of global realities on the prospects and experiences of educational research', 25-08-2022, Yerevan, Armenia
- Lina Vaitkute. 'Connection of theory and practice in school-based VET: the case of VET curriculum modularization reform in Lithuania'. NordYrk (Nordic research network on vocational education and training) conference, 07-06-2021, Linköping University, Sweden
- Lina Vaitkute and Marco Perini. 'Vocational teachers' experiences in enacting of competence-based curricula in Lithuania and Italy'. 4th International VET Conference 'Crossing Boundaries', 09-04-2021, Basel / Muttenz, Switzerland
- Lina Vaitkute. 'Change of vocational teachers activities in implementing modern competence-based curriculum'. IVth conference of Lithuanian Educational Research Association (LETA) and IVth conference of doctoral students, 09-09-2020, Vilnius, Lithuania (online conference)
- Lina Vaitkute, Marco Perini and Giuseppe Tacconi. 'Implications of competence/learning outcomes- based VET curriculum reforms for the vocational teachers and trainers in Italy and Lithuania'. ECER European Conference of Educational Research 'Education in an Era of Risk – the Role of Educational Research for the Future', 03-09-2019, Hamburg, Germany

Structure of the thesis

This thesis consists of the following chapters: Literature review and conceptual framework; Methodology; Comparative analysis of CB curriculum reforms and vocational teachers and trainers training institutional framework in Lithuania and in Italy; Findings of empirical research of CB curriculum enactment in Lithuania and in Italy; Discussion; Conclusions and Recommendations.

Glossary of used terms

Competence - the generic, integrated and internalized capability to deliver sustainable effective (worthy) performance (including problem solving, realizing innovation, and creating transformation) in a certain professional domain, job, role, organizational context, and task situation (Mulder, 2014).

Competency - a coherent cluster of knowledge, skills and attitudes which can be utilized in real performance contexts (ibid). Competency is a part of generic competence. In the context of this research by competencies we also mean a textual representation of education intentions in terms of intended competencies prescriptively expressed in standards, qualification profiles, competence frameworks and similar.

Competence-based education (CB education) - educational model, under which competence and competencies are the starting point of curriculum development, instructional activities and assessment practices (Mulder & Winterton, 2017, p. 20).

Vocational education and training (VET) - education and training which aims to equip people with competencies, knowledge, know-how, skills and attitudes in particular occupation or more broadly on the labor market (adapted from Cedefop, 2014).

Qualification - a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved competencies (learning outcomes) to given standards (adapted from The Council of the European Union, 2017),

Vocational teachers and trainers - training personnel responsible for implementing VET curriculum. In the context of this thesis teachers working in Lithuanian VET institutions are called 'vocational teachers', whereas vocational training professionals in VET centers in Italy are referred to as 'vocational trainers'.

Curriculum - the inventory of activities implemented to design, organize and plan educational actions, including the definition of learning objectives, content, methods (including assessment) and materials (Cedefop, 2010). In this thesis the term curriculum covers educational actions' intentions as a reference and training process governing texts, planning and implementation of these intentions and experiences of learners (Billett, 2011).

Competence-based curriculum (CB curriculum) - curriculum oriented at development of learners' competence. Depending on CB curriculum model, competence and competencies can become its organizing units or may be treated merely as implicit goals of teaching and learning. Curriculum design is informed by standards, qualification profiles, competence frameworks and similar.

Curriculum enactment - the totality of actions for putting intended curriculum into practice.

Abbreviations

CB – competence based

CEDEFOP – European Centre for Development of Vocational Training

CPD – continuing professional development

EQF – European Qualification Framework for Lifelong Learning

ESCO - European Classification of Skills, Competences and Occupations

IeFP – istruzione e formazione professionale (vocational education and training in Italy)

IVET – initial vocational education and training

NQF – national qualifications framework

OECD – Organisation for Economic Co-operation and Development

QCA – qualitative content analysis

VET – vocational education and training

CHAPTER I. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Competence-based (CB) education has become a world-wide phenomenon throughout years of the 'competence movement' (Mulder, 2017). CB education origins are traced to the societal developments in USA in the middle of the last century, when it was pressured to strengthen technological and economic performance (Barrick, 2017; Hodge, 2007). By concentrating curriculum design on clearly defined and communicated educational goals in terms of learners' competence instead of knowledge to be conveyed, CB education was believed to provide educational system with a solution for improving its relevance and responsiveness to the labor market needs in changing contexts and facilitate faster graduates' employability (Biemans et al., 2009; Wesselink & Zitter, 2017). It evolved under influences of diverse, often clashing, theoretical frameworks, such as behaviorism, social constructivism, systems theory, scientific management and mastery learning (Barrick, 2017; Hodge, 2007).

From today's perspective, CB education remains a dominating paradigm for VET curriculum models based on standardization of qualifications. Its' on-going expansion is strongly related to the introduction of national qualification frameworks inspired by the Anglo-Saxon countries' models, a declared need for more transparent qualification systems and more flexible approaches to qualifications and learning, skill formation policy agendas, in particular, of neo-liberal orientation, oriented at satisfying economic goals, human capital development necessities and powerful narratives of employers regarding mismatch of education system and their needs, accountability and assessment culture in education, and influences of international organizations agendas, policy recommendations and tools.

With this literature review the author aims to explore different theoretical perspectives on CB education as an educational paradigm, its place in vocational education and training (VET) policy and practice and practical implications of CB education for teachers' work and competence.

1.1. Defining features of CB education

The core of the CB education is the competence which can be diversely operationalized and it is the scope of this thesis to explore this construct with its constituting elements and to trace its enactment in school-based VET settings by vocational teachers and trainers. In the academic literature the term 'competence-based education' is often mixed or interchangeably used with terms 'competency-based education/ training' (Winterton, 2009). Some authors treat terms 'competence' and 'competency' as equivalents (Anderson-Levitt & Gardinier, 2021), whereas

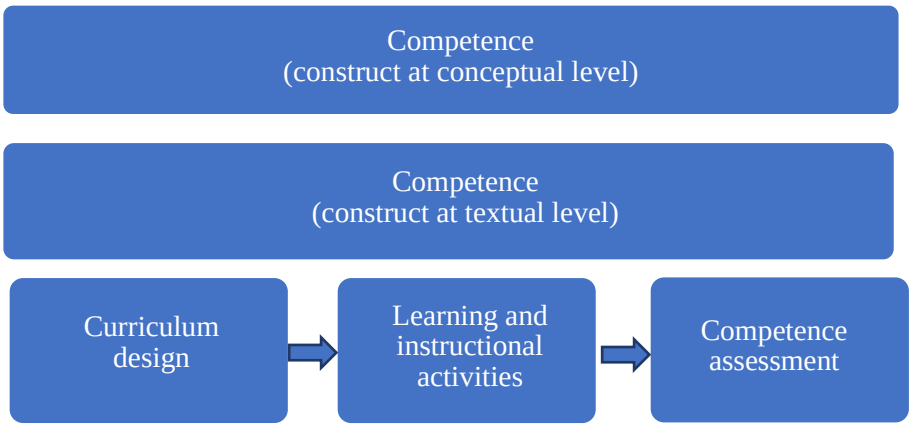
Mulder (2017, p. 236) in the comprehensive volume dedicated to 'competence-based' education phenomenon, while admitting its interchangeability, relates 'competence' to '*generic capability of people to perform tasks adequately*' and treats 'competency' as '*an element of competence*'.[1] A rather common conceptualization is defining competencies as attributes necessary for the performance and linking competence with performance and attributes manifestation in it (Winterton, 2009). Mulder and Winterton (2017, p. 12) argue against using plural competences, although they admit that this form is used in European competences frameworks, whereas on the contrary Spöttl et al. refer to plural competences to underline their broadness (Spöttl et al., 2020). A number of authors, in particular from Anglo-Saxon countries (Hodge et al., 2020; Wheelahan et al., 2018), favor using 'competency-based education' over 'competence-based education'. It should be also noted that in research literature and policy documents along with the term 'competence-based education' / 'competency-based education' terms '(learning) outcomes-based education / training', 'performance-based education / training', 'competence-oriented education / training', 'competence approach' are also used what contributes to further confusion about the concept.

In this thesis we interpret CB education along with definition provided by Mulder and Winterton (2017, p. 20): in CB education '*competence and competencies are the starting point of curriculum development, instructional activities and assessment practices. Occupational profiles and competence frameworks tend to define curriculum development, and from this, core occupational tasks or themes can be identified which can become the organizing units within the whole curriculum*'. Building on this and along with Hodge and colleagues (2020), CB education incorporates the following elements – competence construct at conceptual level, its textual representation in the form of standards, competence profiles, etc. specifying particular competencies, curriculum design, learning and instruction, and competence assessment (figure 1 below).

[1] Such a logic of 'competence' which manifests through meaningfully enacted 'set of competencies' is applied in this thesis. When referring to competence a generic notion of competence as a prerequisite and manifestation of competent action is stressed, whereas with competencies we mean a specific and concrete ability to take action. It follows that the goal of learning is through the development of particular learner's competencies to develop and achieve learner's competence.

Figure 1

Elements of CB education



Based on Hodge et al., 2020

'Competence' and, in particular, 'competencies' as terms for many have a common sense, however efforts to reach common understanding at policy, academic and practice levels lead to confusion. Concept of competence as such is one of the main sources of criticism of overall CB education approach (Edwards, 2016; Lum, 1999). The term is referred as ambiguous, 'polysemic' and 'hybrid' (Anderson-Levitt & Gardinier, 2021) with conceptual differences among countries (Brockmann et al., 2008; Le Deist & Winterton, 2005; Mulder et al., 2007). Behavioral (USA tradition), functional (United Kingdom tradition) and multidimensional (France, Germany and Austria tradition) traditions are found in approaches to competence (Le Deist & Winterton, 2005). Multidimensionality manifests in integration of practical and theoretical knowledge, personal and social qualities whereas in behavioral-functional approaches role of knowledge is marginal and competencies are defined from the perspective of work tasks. Similarly, Mulder (Mulder, 2014) has classified approaches to competence into three groups: functional behaviorism, integrated occupationalism and situated professionalism. The last two reflect holistic approach to competence.

Holistic approach to competence is founded on multidimensionality and integrative character of competence and competent performance. Mulder defines (professional) competence as '*the generic, integrated and internalized capability to deliver sustainable effective (worthy) performance (including problem solving, realizing innovation, and creating transformation) in a certain professional domain, job, role, organizational context, and task situation*' (Mulder, 2014, p. 111). Hager, who according to Lum, is a 'firm advocate' of CB education (Lum, 2013, p. 1193), supports a wealthier understanding of competence through

integrated, contextualized and holistic view of competence and defines it as '*contextualized capability involving integration of assorted practitioner attributes*' (Hager, 2017, p. 206). He notes multidimensionality of these attributes (cognitive skills, interpersonal skills, affective attributes, technical psychomotoric skills), stresses holism of professional performance, a relation between professional tasks (context) and attributes and importance of professional judgment.

Divergence of concept is explained by different contexts of their development and application as well as by different ontological and epistemological underpinnings (Winterton, 2012). There have been numerous trials to devise generalized typologies of competence and its constituent elements. For example, Winterton (2009) has proposed an integrative model of meta-competence, cognitive, functional and social competences. The model draws on previous works of Cheetham and Chivers on holistic professional competence (Cheetham & Chivers, 1996, 1998). In the latter model authors conceptualized professional competence as consisting of four components: cognitive competence, functional competence, personal competence ('behavioral competence' on knowing how to behave) and ethical competence (values and judgment), which are aided by overarching meta-competencies / trans-competencies (communication, learning/ self-development, creativity, analysis, mental agility, problem solving and reflection). A model of 'future-oriented competence' by Mulder (2019) stresses five components, namely, integrative learning competence (being at the center of competent, future-driven, action), disciplinary and interdisciplinary competence (as a foundation for performance and for future learning), self-management and career competence (important for autonomous actions and career decision making) and, finally, personal and social professional competences (personal and inter-personal dimensions of professionalism).

One of the recent international trials to reconceptualize competence is the one of International Bureau of Education of UNESCO (IBE-UNESCO) who has defined competence as *the developmental capacity to interactively mobilize and ethically use information, data, knowledge, skills, values, attitudes, and technology to engage effectively and act across diverse 21st century contexts to attain individual, collective, and global good* (Marope et al., 2019, p. 27). In addition to multidimensionality of competence, in this definition the emphasis is put on multiple contexts of performance, meaningful outcomes and self-agency of learners.

Holistic competence models are found not only at theoretical level, but also have been legitimated and realized in practice. French, German and Austrian models are among the examples (Le Deist & Winterton, 2005). The author of the thesis finds a German model in particular well-elaborated and stimulating. The model has been referred to in many studies on

holistic and integrated competence or vocational expertise (Addis & Winch, 2018; Brockmann et al., 2009; Le Deist & Winterton, 2005; Winch, 2010; Winterton, 2009, 2012; Winterton et al., 2005). What makes it distinctive is a dynamic orientation towards persons' 'willingness and ability' to act and its holism and integration of all elements. To summarize the model, the goal of VET curriculum is a vocational action competence (*Handlungskompetenz*), which is a multi-layered construct incorporating domain competence, personal competence and social competence, which also include cognitive and functional competence and are supported by methodological, learning and communication competences.

Another confusion is the conflation between competence (competencies), learning outcomes and skills. On the European VET policy level, in the recommendations on establishment of European Qualifications Framework (EQF) of 2008 and 2017, the competence is defined as '*the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development*' (European Parliament and Council of the European Union, 2008; The Council of the European Union, 2017). It is interesting to observe how the conceptualization of competence in this recommendation has shifted in 2017 as compared to 2008. In 2008, the competence was described in terms of responsibility and autonomy, and competence level descriptions were positioned next to knowledge and skills descriptions, hence complicating the relationship between skills, knowledge and competence (European Parliament and Council of the European Union, 2008, p. 5). In a version of 2017 this was no longer the case, however such a classification (knowledge, skills, competence) is still present in European classifications. For instance, ESCO, a multilingual classification of European Skills, Competences, Qualifications and Occupations, describes occupations through the knowledge, skills and competences and entitles these descriptions as 'skills' (European Commission, 2019). Explanation is given that 'skills' refer to '*the use of methods or instruments in a particular setting and in relation to defined tasks*' and that 'competence' is a broader term indicating '*the ability of a person, facing new situations and unforeseen challenges, to use and apply knowledge and skills in an independent and self-directed way*' (20 p.).

OECD in the context of the OECD Skills Strategy and PIAAC (Programme for the International Assessment of Adult Competencies) treats the term 'competence' / 'competency' as equivalent to 'skill'. By these terms they mean '*the bundle of knowledge, attributes and capacities that enables an individual to successfully and consistently perform an activity or task, whether broadly or narrowly conceived, and can be built upon and extended through learning*' (OECD, 2011, p. 7). Similar definition of skills is given by EQF recommendation

where '*skills means the ability to apply knowledge and use know-how to complete tasks and solve problems*' (The Council of the European Union, 2017, p. 20).

What regards another related term of learning outcomes, the latter are defined as the statements regarding what a learner knows, understands and is able to do upon completion of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy (The Council of the European Union, 2017, p. 20). Sometimes 'learning outcomes' and 'competences' / 'competencies' are used interchangeably, though according to Barabasch learning outcomes are limited to curriculum level, the product of translation of competencies into curriculum and do not have direct links with practices in the real world (Barabasch, 2017, p. 653). Similarly Spöttl does not see advantage of using learning outcomes in curriculum over 'outcome oriented' definition of competence (Spöttl, 2020, p. 120). On the contrary, Markowitsch and Luomi-Messerer (Markowitsch & Luomi-Messerer, 2008, p. 41) claim that 'learning outcomes are more comprehensive than competences' and propose to use learning outcomes as 'an umbrella term for competences'. Indeed, in European policy documents and studies published by Cedefop a preference of a term 'learning outcomes' may be observed, consequently positioning 'learning outcomes' as political instrument in education system (Cedefop, 2012, 2017b; European Parliament and Council of the European Union, 2008; The Council of the European Union, 2017; Ure, 2019; Winterton, 2009). In EQF, it is learning outcomes which are defined through dimensions of knowledge, skills, autonomy and responsibility (prior to 2017 – competence).

Some authors advocate for the term '*capabilities'* which has been proposed by Nobel laureate, economist and philosopher, Amartya Sen and the philosopher Martha Nussbaum (Nussbaum, 2000; Sen, 1999). It is seen by researchers as an alternative, a more holistic term for 'competency' and an alternative foundation for construction of VET qualifications (Wheelahan, 2016, p. 192). The capabilities approach stresses freedoms and liberties of person to choose actions and socio-economic, political and cultural environment that permits to exercise and develop person's capabilities. The term 'capability' has different foundations and mixed meanings for researchers as summarized by Mulder (2019). Mulder (2019) contends that a comprehensive, integrative approach to competence collides with the 'capability'.

In CB education another important building block is competence texts (standards, occupation / qualification / competence profiles), where competence and its constituent parts (competencies) are described and codified (Hodge et al., 2020; Mulder, 2012). Cedefop distinguishes four types of standards: the occupational standard, the qualification / evaluation standard, the education / curriculum standard and the training standard (programme) (Cedefop,

2012). Hager advocates that similarly as in the case of the competence, standards should be used holistically (Hager, 2017). 'Holistic standards' are characterized by strategic selection and integration of key aspects of holistic and rich occupational practice.

Tūtlys and Spöttl (2017) differentiate two approaches to standards development in line with views of other authors on behavioral-functional and multidimensional approaches to competence. Anglo-Saxon approach focuses on functional analysis of work tasks typical for standard workplaces whereas work-process approach aims at deeper insight into all dimensions of work processes and its socioeconomic and organizational context and work-process knowledge. In this approach competence is defined on the basis of core work tasks and technological, organizational and other requirements of work-process.

The provided analysis illustrates the conceptual confusions in defining competence and in inter-relation of it with other terms 'learning outcomes', 'skills' and 'capabilities'. Although for many, especially educational practitioners and labor market actors, competence (and 'competencies') are the terms that have a common sense, their meaning is much more complicated and their operationalization in textual and practical-pedagogical dimensions cannot be conceived as a straightforward process. Competence-competencies tension in national and international context cannot be neglected too. Direct orientation of VET curriculum to competencies as attributes of competence risks in treating competence narrowly and fragmentally. On the other hand, standards and similar purpose texts have limits in textualizing holistic and integrated competence and holistically representing professional, social practice and attitudes / values dimensions.

1.2. Problematization of CB education

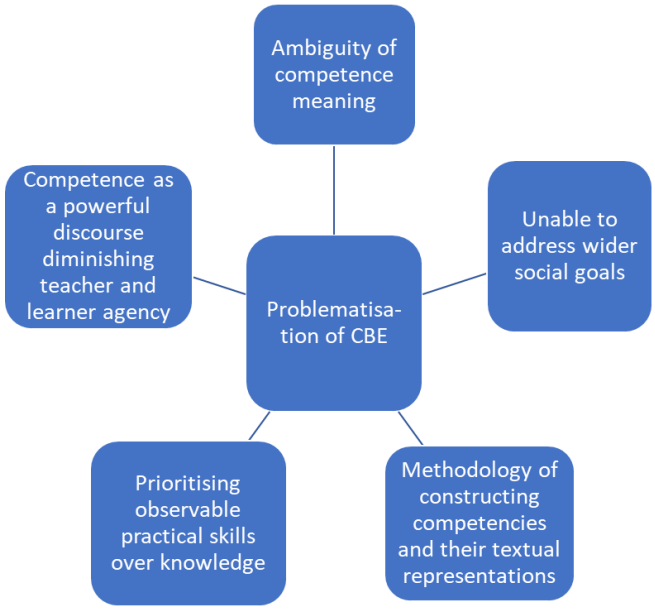
CB education has been subject to multiple criticisms by multinational authors since its early introduction (Edwards & Usher, 1994). Edwards (2016) summarizes that critical positions towards CB education stem into three directions: the notion of competence, CB education quality and credibility and potential of CB education to enhance skilled labor. Gamble (Gamble, 2016, p. 225) doubts if competence can provide an adequate basis for curriculum. Preston is in particular critical towards CB education model, calls it 'existential threat' and argues that competence is caging us and our minds and 'impoverishes our humanity' (Preston, 2017).

According to Wheelahan (2009), CB training emerged in the context of neo-liberal reforms influence for education system and has developed by 'selection, augmentation, blending and incorporation' of ideas from diverse and sometimes opposing theories and

approaches, such as constructivism, progressivism, student-centered education. Looking from post-modern perspective, appropriated progressive liberal humanist ideas make a discourse on competence 'powerful' (Edwards & Usher, 1994). Hyland (2006) also criticizes CB education and training models to be 'ill-founded' and to provide fast solutions of profound problems. However, he is supportive of German and French approaches offering knowledge and value and workplace learning-rich curricula (p.12).

Figure 2

Areas problematized in CB education



Generalized problematic aspects of CB education are presented in Figure 2. In addition to conceptual ambiguity explored in previous chapter, the other core points of criticism of CB education tend to be its behavioristic foundation and reductionistic nature of CB education methodology (Hodge et al., 2016; Oates, 2005). Some critics claim that in CB education only observable task-based behavior is valued and narrow focus on desired technical proficiency and human actions meaningful solely to workplaces is preserved. According to them, the aim to explain human actions leads to segmentation of elements constituting competent behavior and, consequently, to the reduction of competence to units, atomization of skills and knowledge and neglect of some important elements, such as values or attitudes.

Next, credibility of competence constructs and competence texts as their representations is questioned (Oates, 2005; Hodge et al. 2020). Lum (1999), looking at the competence from ontological and epistemological position, criticizes the assumptions that it is

possible to describe ontologically subjective/ epistemologically objective features of the world 'unequivocally, accurately and sufficiently' (Lum, 1999, p. 409). He problematizes methodological foundation of CB education which according to him has 'naïve assumptions about language' and disregards 'metaphysical complexity of human action' (Lum, 1999, p. 417). According to Hodge et al. (2020, p. 31), the goal of *competency* approaches are reproduction of valued social practice and its dissemination for the educational purpose through documents. He questions exactly this documenting practice for disarticulation of social practice and codification of the observable and assessable competence. Others (Avis, 2014; Edwards et al., 2009; Edwards & Usher, 1994; Hodge, 2016) regard these competence documents to be authoritative, powerful documents which direct teachers' interpretation and pedagogical actions. Hager (2017) agrees that standards which define competent performance have certain limitations in capturing full occupational activity. By following such standards VET schools can produce only workplace ready graduates (and not 'competent'). Contrary to the claims that CB education and competency standards impoverish curricula, Hager proposes to treat standards holistically, with appropriate judgement, as guidance and as a starting point for educational practice design (p. 216).

One of the most problematic areas of CB education according to researchers (Hordern, 2014; Hyland, 2006; Lum, 2015; Wheelahan, 2009, 2016; Young, 2004, 2008) is the role and place of knowledge in VET curriculum. Knowledge in VET curriculum has different layers and can be categorized under the headings of theoretical academic disciplinary knowledge (representing formal, explicit, codified, declarative, propositional, principled knowledge) and occupationally contextualized knowledge (representing specialized, situated, work process, workplace, procedural, practical knowledge) (Heusdens et al., 2016; Schaap et al., 2009; Wheelahan, 2009). Curriculum designers need to be careful in recontextualizing different types of knowledge for curriculum and should take into account possible dilemmas of teachers pedagogical recontextualization of knowledge in prescribed curricula (Hordern, 2014). There are views, that by restricting the type of knowledge to be acquired, CB education potentially contributes to academic-vocational divide in educational system and, further on, in the society (Nylund et al., 2017; Unwin, 2004). Wheelahan claims that due to the focus of learning on specific occupational workplace context students are denied access to disciplinary theoretical knowledge (Wheelahan, 2016, pp. 186-187). As a result, students do not develop a full base of knowledge needed for their future, have problems in controlling of their knowledge, in creatively and diversely applying knowledge in new contexts and in connecting theoretical knowledge with everyday knowledge. A powerful 'knowledge-based', 'knowledge rich' VET

curriculum is suggested to address this problem (Young, 2008, 2013). According to Young, vocational curriculum needs to provide students with access to both, disciplinary knowledge and job-specific skills and knowledge, however the centrality of knowledge needs to be retained (Young, 2008, pp. 170-171).

Additionally, a significant portion of criticism (Wolf, 2001) stems from reductional character of CB education when educational process is reduced to the act of competence assessment. This branch of CB education is characteristic to British tradition (Hyland, 2006), however, in a more holistic CB education model advocated by Mulder and Winterton (2017) competence and competencies are the thread aligning training and assessment process. Thus, the most pressing issue becomes holistic or behavioristic nature of competence and the richness and relevance of training enabling a learner formation.

There are also views that CB education may undermine teachers' and learners' autonomy, fail to address learners as active seekers and develop their critical thinking, reflexivity and problem solving (Bagnall & Hodge, 2017; Billett, 2016; Cedefop, 2017b; Day, 2017; Preston, 2017).

Finally, with a limited evidence on effects of CB education, a group of researchers (Lassnigg, 2017; Matlay, 2000; Wesselink, de Jong, et al., 2010) question its contribution to achieving positive learning outcomes that are taken for granted by CB education proponents. According to Lassnigg (2012), there is some evidence from large scale economic assessment pointing to the improvement of learning when standardization and pedagogical autonomy are combined. However, at the same time there is a lack of empirical evidence to prove the same. For example, Bagnall and Hodge (2017), based on research of Hodge (2010, 2011, 2014), note that transformative learning happened despite CB education and not necessarily because of it. However, a recent analysis of van Griethuijsen et al. (2020) has revealed an impact of CB education on student satisfaction with interpersonal skills and with quality of training and teachers guidance (van Griethuijsen et al., 2020).

1.3. What is appealing in CB education for VET curriculum reforms

Academic papers and reports by European Centre for Development of Vocational Training (Cedefop) on VET reforms in EU member countries point to a tight relationship between national VET policies and initiatives that are born due to European cooperation of EU member states in VET (Bohlinger, 2019; Brockmann et al., 2008; Rekkor et al., 2013). The European cooperation in the form of Open Method of Cooperation has been guided by European tools for VET agreed in European Council and Parliament recommendations, such as European

Qualifications Framework (EQF) and European Quality Assurance Reference Framework for VET (EQAVET). The underlying principles of these tools is the notion of learning outcomes orientation in qualifications and curriculum and a call for shift from input to outcomes in learning. As a result, many European countries move their VET curricula towards unitization / modularization (Cedefop, 2015b). Although countries have differently operationalized learning-outcomes principle (Ure, 2019), general political context has created favorable conditions for further reinforcement of CB education paradigm in VET systems.

On the European level, European Commission acknowledges the potential of learning outcomes / CB approaches in better linking education and employment (Cedefop, 2010, 2012; European Commission, 2010, 2015). Such approaches are related to the emergence of European and national qualifications frameworks, the need for comparability of qualifications, globalization and influence of international organizations and policy learning (Allais et al., 2009; Bohlinger, 2019; Cedefop, 2010; Lassnigg, 2012; Tūtlys & Spöttl, 2017). Qualifications frameworks are regarded to be a strong political governance instrument having a particular impact on competence and learning outcomes orientation (Lassnigg, 2012; Ure, 2019), although at the same time the researchers claim that the impact of national and European qualifications frameworks has been less than expected, that they best serve the purpose of translation and understanding of qualifications from different contexts and communication about the system of qualifications (Allais, 2017; Allais et al., 2009; Bohlinger, 2019; Lassnigg, 2012).

Similarly, in the light of transition to knowledge and technology driven growth and the Fourth Industrial Revolution (Industry 4.0) IBE-UNESCO strongly advocates for orienting formal and non-formal curriculum at all education levels towards competences and sees the need for global CB reference point for curriculum development (Marope, 2019; Marope et al., 2019). Their competence framework refers to such competences as lifelong learning, self-agency, interacting, multi-literateness, transdisciplinarity. For European Training Foundation, application of occupational standards in education and assessment, definition of curriculum on the basis of qualifications and modularization of curriculum are characteristics of modern VET systems (Deij, 2021).

Application of competence approach in VET curriculum is the way of bringing in the industry voice about training needs in curriculum design processes (Billett, 2016; Tūtlys & Spöttl, 2017). According to Cedefop, since the beginning of this century all European countries have implemented some kind of outcome-based reform of the curriculum in VET (Cedefop, 2012). A shift to outcome-based curriculum is related to the introduction of European and

national qualifications frameworks, introduction of systems for the validation of non-formal and informal learning, need for modularization of training and rationalization of VET offer.

In the context of curriculum reforms, four broad objectives for CB education can be distinguished: (1) transition to learner-centered instruction, (2) improving correspondence of education to labor market needs through orientation to work processes, (3) increasing access to qualifications by making their acquisition more flexible, (4) facilitation of learners mobility through increased comparability of learning outcomes (Cedefop, 2020b). Additionally, the trend of strengthening of standard setting control with regional / local autonomy and decentralization of responsibilities for curriculum making and implementation to schools level is acknowledged (Cedefop, 2012; Deij, 2021; Ermenc & Mažgon, 2015; Rekkor et al., 2013 Cedefop, 2020c). Indeed, the Council Recommendation of 24 November 2020 on vocational education and training for sustainable competitiveness, social fairness and resilience (The Council of the European Union, 2020) also promotes autonomy and flexibility of VET providers in adapting their training to the skill needs affecting teachers' role and agentic capacity in curriculum making.

Importantly, to explore the expansion of CB education Bagnall and Hodge (2017) have distinguished disciplinary, constructivist, emancipatory and instrumental epistemologies from the perspectives of knowledge conception, contribution to human well-being, educational focus, assessment, educator knowledge and educational approaches. They conclude that in CB education instrumental epistemology dominates under the influence of global performativity context and claim that alternative paradigms to CB education grounded in disciplinary, constructivist, emancipatory epistemological perspectives are incompatible with its instrumental nature and cannot be hybridized. However, they admit the possibility of transformation of instrumental epistemology and emergence of new 'situational' epistemology (p. 139). These insights have been challenged by Mulder (2017, p. 1095) who disagrees that CB curriculum model is confined to instrumental epistemology. He underlines the 'hybridity' of diverse approaches used in contemporary models of CB education and the importance of teachers' choice of personal professional epistemologies.

1.4. Implications of CB education for vocational teachers in enacting CB curriculum

Up to now, this review focused on conceptual aspects of CB education. Further on, the research on the nature of implementation of CB curriculum will be presented.

Encounter with competence texts and prescribed curricula

In CB education prescribed competence texts (standards, qualification profiles, etc.) inform curriculum design and implementation in terms of competencies to be achieved, content of learning, tasks and working processes to be arranged and experienced (Sturing et al., 2011; Billett, 2011). Teachers play a major role in interpreting and (re)contextualized prescribed curriculum into instructional practices, tasks and assessment criteria. However, the role of interpretation of competence texts ('second hermeneutic dimension' by Hodge et al. (2020)) together with related implications is underestimated (Hodge, 2018; Hodge et al., 2020). According to Hodge (2018), teachers interpret 'the code' of competence which may be distinct from work and social practice reality. Overreliance on prescribed competence texts is one of the pitfalls in CB education, since learning strength lies in context embeddedness and reflection of actual work practices (Biemans et al., 2004). According to Hager and Smith, there will always be a gap between standards and actual workplace competence (Hager & Smith, 2004). Moreover, situated knowledge and learning outcomes of more transversal nature, such as job routine, learning to learn, tend not to be covered in prescribed competence statements.

The success of operationalization of competence depends on an interpretation-translation approach chosen by teachers (Biemans et al., 2004). Risks associated with interpretation and translation of prescribed curricula by teachers are related to the failure to grasp the meaning of competence, narrowing down and over-specification of competencies (Biemans et al., 2004; Cedefop, 2015b; Runhaar, 2017). According to numerous authors (Barabasch, 2017; Billett, 2016; Cedefop, 2012; Hodge, 2018) teachers need to be able to professionally judge and creatively interpret competence specifications together with descriptions of required knowledge, learning outcomes and performance and exercise sufficient autonomy in designing training content (Baumeler, 2019; Boldrini et al., 2019; Edwards et al., 2009). A certain freedom and autonomy of teachers in translating competence texts serves also as a motivation measure to overcome resistance associated with curriculum reforms.

Hodge (2018), while comparing teachers curricular work within *Didaktik* tradition (European) and Anglo-American tradition, advocates that teachers in European educational tradition are seen as professionals who in a 'complex, circuitous and creative' way interpret curriculum documents and approach students' occupational formation. He criticizes situations when teachers become 'implementers of curriculum' without necessity of 'exercising professional judgement' and draws to the conclusion that curriculum 'places complex hermeneutic demands' upon VET teachers (p. 39). He explains that in curricular work teachers

equip different interpretative strategies and hermeneutic circles, however their competence in interpreting curricula receives insufficient attention. Teachers have doubts already while reading and interpreting competence texts when they attempt to grasp texts' structure and understand competence statements.

In relation to this Young (Young, 2013) proposes that prescribed curricula should be limited to key concepts ensuring common knowledge base for all students and schools and individual teachers should be autonomous to address their resources, histories and contexts. This line of argument is supported by other studies (Ryan et al., 2017), claiming that detailed and highly structured content pressures teachers to follow curricula as prescribed and undermines teachers' inclusive and experiential instructional approaches.

Design and organization of theoretical and practical learning

According to comprehensive CB education design principles, proposed by Dutch researchers (Sturing et al., 2011; Wesselink, Dekker-Groen, et al., 2010), holistic competence development implies balanced coordination of theory and practice and integration of human attitudes dimension in training. It is acknowledged that this can be achieved when learning is organized in diverse, powerful and authentic environments (de Bruijn, 2012; Placklé et al., 2020). Such environments offer complex learning situations which enable construction of learners' holistic capability to act and use knowledge and skills to solve work situations, explore alternative solutions and demonstrate personal and work-related attitudes. These situations contribute to learners' growth, promote their self-reflection and development of more transversal competences (Billett, 2016; Cremers et al., 2016; Jossberger et al., 2010; Placklé et al., 2020; Wijnia et al., 2016). Additionally, learning in authentic and diverse environment facilitates development of professional identity of students (Billett, 2016; Placklé et al., 2020).

Since work environment cannot be fully reconstructed at school, workplace experience is integrated through internship, practical placement, apprenticeship periods and similar. This type of learning organization allows at least partially compensating a gap between skills development in IVET and workplace competence (Hager & Smith, 2004; Hordern, 2019). On the other hand, simulated environments allow experimentation with authentic work tasks in a safe and stable environment and different roles that support integration of knowledge, occupational and generic skills (Jossberger et al., 2010). Another solution is hybrid learning environments having characteristics of both, school learning and work practice (Cremer et al., 2016), where students accomplish authentic learning assignments and serve real external customers.

Billett, building on literature about mediation of social and physical world, explains the importance of integration of school and workplace learning experiences when crossing their boundaries for work competence (Billett, 2014). According to him, both physical and social environments have their learning purposes, offer different kinds of actions, produce and help learners to construct different kinds of knowledge, and it is the aim of enacted curriculum and teachers to sequence and to use them adequately. Limitations of one setting can be remedied in other. However, it is precisely in the workplace where students using their agentic capacity make meaning and judge, link, negotiate, associate and reconcile these different experiences. Similarly, Hordern (2019) stresses the importance of 'workplace curriculum' which presents both the space for new workplace knowledge and for contextualization of the theoretical 'school-based' knowledge (Hordern, 2019). Then, an issue is the structuring and sequencing of the knowledge base for curriculum and the extent to which pedagogic and workplace recontextualization of knowledge (and curriculum) are coherent and relate to each other (Hordern, 2014).

James and Mulcany point to the quality and authenticity of CB education and training programmes implemented in companies (James, 2002; James & Mulcahy, 2000). According to them, in workplace learning context and process should dominate over prescribed learning outcomes, trainers should facilitate productive participation of learners in learning situations that incorporate integration of knowledge, skills and professional attitudes, engage into reflective practices, action research or similar practices. Similarly, Cremer et al. (2016, p. 314) point to the importance of balancing cognitive-constructivist and socio-cultural perspectives in connecting classroom learning and workplace learning environments.

Available research (Baartman & de Bruijn, 2011; Wesselink, de Jong, et al., 2010) suggests that teachers face different challenges in guaranteeing authenticity of learning and in connecting learning at school and at workplace. Creation of appropriate effective learning environment implies teachers to engage into learning design, diagnostic, evaluative and organizational activities, to diversify assessment, design learning materials and tools for stimulation of students' self-directed learning and reflexivity on learning contexts and situations, to cooperate and network with stakeholders and other teachers.

Knowledge construction in VET

As already mentioned, knowledge in VET curriculum includes theoretical academic disciplinary knowledge and occupationally contextualized vocational knowledge (Schaap et al., 2009; Wheelahan, 2009; Heusdens et al., 2015). German authors (Spöttl et al., 2020)

referring to ‘work-process knowledge’ in curriculum, which encompasses practical, implicit, and theoretical knowledge, agree that at a greater extent it is acquired at workplace. A group of authors (Billett, 2014, 2016; Hordern, 2019) notice the importance of workplace knowledge, its tension with school-curriculum as well as importance of its structuring and sequencing.

Billett (2017, p. 50) distinguishes among three domains of occupational knowledge: (1) canonical, (2) situational and (3) personal and states that all these domains should be considered in instruction processes. Personal domain brings together all these elements and is central to what constitutes competent performance. Billett claims that it is more common to provide learning experiences that result in canonical knowledge, thus, using analogy of ‘boundary crossing’ (Bakker & Akkerman, 2014), in instruction teachers should apply pedagogical practices that help learners to realize the difference between canonical and situational knowledge and that can help to develop personal occupational knowledge (p. 60).

Heusdens and colleagues (Heusdens et al., 2016, 2018, 2019) have sought to explore the nature of vocational knowledge and the processes of its formation in VET programmes. They claim that vocational knowledge is shaped through cognitive activity of meaning making incorporating judging and taking action in appropriate situation. In this way through reasoning activities of conceptualizing and concretizing the knowledge is connected to taking actions – understanding and fitting together interdisciplinary bodies of knowledge and different concepts and deciding on their use for particular context-dependent situation (Heusdens et al., 2016, 2018, 2019). Pedagogical strategies and workplace learning strategies enable practitioner recontextualize the applied knowledge through its particularization, generalization and awareness raising of learners on the different kinds of knowledge and their part-whole relationship (Hordern, 2014). Hordern (2014), based on works of Muller and Young, claims that awareness of distinction between different types of knowledge and its recontextualization are crucial for vocational knowledge and VET curriculum.

To guide instructional practices and knowledge construction Hodge with colleagues (2016) has advocated for using model of threshold concepts. Following this model, educators and experts together with learners should determine the most important (threshold) concepts and threshold practices in the occupational area.

Development of holistic competence - integration of knowledge, skills and attitudes

The idea of holistic competence calls for learning situations that mobilize application of knowledge, skills and attitudes in an integrative manner. Such an approach has many implications for teachers in terms of creation of learning situations, professional and social

practice assignments and assessment tools that facilitate this integration, boundary-crossing between different learning settings, cooperation among teachers at school and trainers at workplace and interdisciplinary cooperation at school level.

Baartman and de Bruijn (Baartman & de Bruijn, 2011) have explored integration processes of 'building relationships between pieces of knowledge, skills and attitudes' (p.128). They distinguish three types of integration process. In the first one (called 'low-road integration') knowledge and skills are connected towards automatic performance, where learner performs tasks automatically, based on implicit knowledge and skills without providing rationale for actions. In this type of integration, basic attitudes necessary for professionals are automatically developed and integrated with knowledge and skills. In the 'high road integration' reflection in and on action is essential, and a learner, based on reflection on task and his knowledge and skills is able to perform tasks in new situations while developing new knowledge and skills. Attitudes are developed similarly on the basis of reflection about a certain type of attitude helping his performance. In addition, there is a third type of integration, 'transformative integration', when through critical reflection not only possessed knowledge and skills are transformed, but also a persons' own identity transforms. Researchers relate this type of integration with learners' participation in workplace cultures. They also stress that to facilitate a higher-level integration it is important to motivate learners to get engaged into reflection through ill-defined non-standardized tasks.

Instructional methods

According to Wesselink and Zitter (2017) CB education demands a balance between standardization of competencies and individualization of learning by translating of CB learning goals into the learners' context. Additionally, de Bruijn and Leeman (2011) and de Bruijn (2012) raise the importance of teachers' flexibility and capacity to adapt in choosing and applying instructional methods and balancing between proven, more traditional methods and experimental ones directed at supporting, coaching and supervising self-directive learning. Various researchers point to the use of project-based learning, modeling, coaching, scaffolding, articulation, reflection and exploration as an appropriate teaching methods for CB education (Bohne et al., 2017; de Bruijn & Leeman, 2011; Khaled et al., 2016; Seezink et al., 2010). Thus, CB education is associated with flexibility of didactical processes and flexibility of content of learning (Tillema et al., 2000; Wesselink & Zitter, 2017). From a learner perspective, flexibility is also closely related with adaptability, meaning that it enables learning of student at his own level and pace (Jossberger et al., 2010). For realization of the latter, learner-centered

pedagogical approaches and stimulation of self-reflection and self-steering of learners are crucial.

Self-reflection and self-directed learning are believed to be preconditions for developing an occupational competence (Baartman & de Bruijn, 2011; Cheetham & Chivers, 1998; Jossberger et al., 2010; Spöttl et al., 2020). Therefore, CB education presupposes greater self-regulation, self-responsibility and self-initiative from the learners (Biemans et al., 2013; Bohne et al., 2017; Khaled et al., 2016; Sturing et al., 2011). Self-reflection in the context of CB education is explained as active and critical engagement into the questioning of own motivation and capacities (Ryan et al., 2017), whereas self-directed learning (Jossberger et al., 2010; Cremer et al., 2016) is described as pro-active and autonomous learning where students set their learning goals, plan learning activities, monitor and evaluate them.

Increasing students' engagement into self and peer-assessment also are attributed to self-directed learning (Sluijsmans et al., 2008; Tillema et al., 2000). According to Jossberger et al. (2010) the crucial activities for teachers are giving feedback, direct instruction and gradual transfer of responsibility for learning to student. It follows, that active coaching and dialogic methods are needed for facilitating and encouraging learners' occupational competence (de Bruijn, 2012; de Bruijn & Leeman, 2011; Sturing et al., 2011). Stimulation of learners' self-directed learning presupposes coaching tasks for teachers at all three stages, forethought, performance control and self-reflection, with forethought and self-reflection phases being rather challenging (de Bruijn and Leeman, 2011; Khaled et al., 2016; Ryan, 2017). Researchers also acknowledge the relation between teachers' coaching and students' professional identity learning and formation (de Bruijn, 2012).

Attention to key competences

Many authors claim that modern VET should go beyond occupation-specific competencies and should also equip learners with more general and transversal 'key competences', also referred to as 21st century competences (skills), core, generic, foundation skills, basic skills (Cedefop, 2020c).[2]

Unwin in her essay about the United Kingdom curricula on the borderline of 20th and 21st centuries has criticized the direction that national vocational qualifications took. She

[2] In the context of this research general personal competences are referred to as key competences. In line with Council recommendation of 22 May 2018 on key competences for lifelong learning, we define key competences (in plural form) as those needed for personal fulfilment and development, employability, social inclusion, sustainable lifestyle, successful life in peaceful societies, health-conscious life management and active citizenship.

claimed that if oriented solely at employers' needs, VET contributes to academic-vocational divide in the society (Unwin, 2004). Paraphrasing her words, VET should also enable learners to participate in democratic learning society' and should embrace its social, cultural and economic relevance (p. 195). Presently the need to develop general key competences throughout VET programmes does not raise any doubt and is often directly or indirectly legitimated and prioritized in policy documents (Cedefop, 2020c). Yet empirical research about development of these competences is scarce.

CB education is aimed at preparing graduates who would take initiative for their own career (Biemans et al., 2004). Career education from the perspective of CB education has been researched by Dutch authors (Mittendorff, 2010; Mittendorff et al., 2012; Winters et al., 2012). These research studies focused on career reflection, career shaping and networking competencies and revealed that under-development of the latter two is defined by the lack of pedagogical practices that would stimulate tailored learner self-direction (Mittendorff et al., 2012).

A study of Eizagirre Sagardia et al. (2018) analyzed the contextual factors and instructional practices of Spanish VET teachers in developing cross-curricular competences with the focus on learning to learn and career competences. They found out that in developing general competences it is beneficial to construct instructional practice for whole training course by engaging a team of teachers. Such a training addresses a more holistic attitude of learner. Still the analysis revealed that instructional practices limited to individual teacher / competence level were dominant and planning of generic competences instructional practices at institutional level (i.e., materials, resources, conditions needed) was very rare.

To develop key competences teachers apply active, learner-centered and teachers team-work based methods, such as project-based learning, problem-based learning, inquiry-based learning, simulations, cooperative learning and arrange challenging authentic learning situations similar to those of professional life that would foster problem-solving capabilities (Eizagirre Sagardia et al., 2018; Morselli, 2018). An issue for consideration is the role which key competences play in the assessment. For example, a study by Morselli (2018) has showed that in Italy (Lombardia region) sense of initiative and entrepreneurship is not assessed.

Assessment of achieved competence

A number of authors (Billett, 2016; Mulder et al., 2007; Mulder & Winterton, 2017; Ryan et al., 2017) underline that in CB education the emphasis should not be put on the assessment and that such a direction by neglecting the learning potential may lead to the failure of approach.

Balanced and effective assessment throughout learning process, placed among the core design principles for comprehensive CB education, is believed to stimulate learners' learning motivation (Sturing et al., 2011). It is stressed that competence assessment needs to accommodate assessment of various domains of competence, with competence assessment criteria oriented towards work-process rather than narrow individual tasks and incorporating sufficient level of learners cognitive capacity (Fastré et al., 2010, 2014; Spöttl et al., 2020). Research studies showcase that assessment of competence is still problematic (Eizagirre Sagardia et al., 2018) and that compared to traditional forms of assessment, assessment of competence very much relies on teachers' competence (Gulikers et al., 2010).

Based on academic papers on CB education and research dealing with assessment in CB education (Biemans et al., 2009; de Bruijn & Leeman, 2011; Fastré et al., 2010, 2014; Gulikers et al., 2008, 2010; Tillema et al., 2000; van der Vleuten et al., 2017) there can be distinguished the following preconditions for successful assessment in CB education:

- Authentic assessment with strong representation of professional practice, job situations and dilemmas (Gulikers et al., 2008). Gulikers and her colleagues have offered five criteria for assuring authenticity: (authentic) task of assessment, (authentic) physical context for assessment, social context, appropriate assessment form and performance assessment criteria. Additionally, assessment should be designed from a learner perspective and considering his future professional practice (Gulikers et al., 2008).
- Assessment strategy should incorporate a threefold purpose of assessment: assessment of learning (i.e. summative assessment), assessment for learning (formative assessment) and assessment as learning (self-assessment and self-reflection, self-directed learning) and should foresee assessment quality control measures (Van der Vleuten et al., 2017).
- Assessment should generate scaffolded feedback for students to support their development and curricula improvements.
- Assessment strategy needs to take into account carefully developed assessment criteria (Fastré et al., 2010, 2014). The research evidence points to the fact that clear, performance-based, criteria are more appropriate to novice students whereas more broadly defined CB criteria, fostering integration of various domains of competence and incorporating more generic attitudes and personal qualities, are appropriate at a later stage of learning.
- Assessment should accommodate a mix of appropriate assessment methods and tools and portfolio in particular for assessing competence and its separate components and include learners reflections.

- Employers and students should play their role in assessment design, implementation and evaluation of it.

CB assessment has been subject of criticism as well. Wolf (2001) states that the problems lie in unclear and ambiguous specifications of competences or learning outcomes and in limitations of assessors' professional judgement (see also Lum, 2013; van der Vleuten et al., 2017, p. 615;), what, again, points to the competence and professional judgement of teachers to interpret and translate competence texts into the assessment tasks and criteria.

Organizational factors for CB education enactment

Various studies (Gulikers et al., 2010; Runhaar et al., 2016; Tillema et al., 2000; Truijen et al., 2013; Wijnia et al., 2016) demonstrate the importance of teachers' cooperation in implementing CB curriculum. Implementation of CB education is strongly associated with information processing at team level (i.e. information sharing, collaborative interpretation, negotiation and discussion which extends beyond information collection, storage and retrieval) (van Griethuijsen et al., 2020; Wijnia et al., 2016). Based on data of study of Wijnia et al. (2016) van Griethuijsen et al. (2020) confirmed positive association of implementation of CB education and teachers teams' information processing and information storage and retrieval activities both at the individual and team level. Team learning is especially relevant in the context of the need for interdisciplinary teams of teachers, formed for integration of general education and occupational disciplines, theory and practice, classroom and workplace learning. Another research on factors of effective teamwork in VET (Truijen et al., 2013) showed that team viability (commitment) and innovativeness are important criteria for team effectiveness and that teams having members from different backgrounds are likely to be more innovative.

CB education requires cooperative arrangements with the workplaces which can be supported by establishing learning communities at school and workplace, tuning learning and working environments, related partnerships and networks (Cremer et al., 2016). Gulikers et al. (2010) have analyzed the role of teachers' teamwork from the point of view of CB assessment and have found that group work facilitates unfolding of meaning of CB assessment goals and procedures and prevents from related confusions, for example, in terms of authenticity of training. Literature review also points at the effect of teachers' engagement into professional networks and communities (Rekkor et al., 2013).

Other researchers (Seezink & Poell, 2010; Eizagirre Sagardia et al., 2018) note possible tensions between individual learning of teachers engaged in CB education and organizational learning of their institutions. In turn, all this implies that VET institutions' managers need to

put efforts for facilitating interaction and collaboration of VET teachers in integrating their teaching practices and disciplines, arrange a working environment that stimulates team-working, promote team learning and realize means to increase learning-goal orientation and group occupational self-efficacy (Edwards et al., 2009; Eizagirre Sagardia et al., 2018; Nissila, 2015; Truijen et al., 2013; Wijnia et al., 2016).

Teachers' agentic attitudes to CB curriculum reforms and related competence needs

Construction of VET qualifications and curriculum on the basis of competencies and learning outcomes is associated with strong framing and classification of teaching and learning processes (Kemmis & Green, 2013) and following Boldrini et al. (2019, p. 138) teachers see curricular reforms as a 'top-down process of standardization of contents' pressing them to sacrifice their personal pedagogical approaches in a call to meet labor market needs. Potential resistance of teachers towards CB education curriculum reforms has been noted by different authors (Edwards et al., 2009; Rekkor et al., 2013; Boldrini et al., 2019).

Windschitl (2002) describes four types of dilemmas that teachers face during implementation of an educational reform: (1) conceptual dilemmas (understanding of the underpinnings of CB education), (2) pedagogical dilemmas (arising from the more complex approaches to designing curriculum and fashioning learning experiences that CB education demands), (3) cultural dilemmas (roles and expectations of teachers and students) and (4) political dilemmas (resistance from various stakeholders) (cited in Sturing et al., 2011). Rekkor et al. (2013) in a study about curricula reform adoption by vocational teachers concludes that it is necessary to have in mind how vocational teachers make-sense of VET reforms. Curriculum reforms are implemented at different speed depending on teachers' attitude towards reforms and there will always be teachers who are not motivated or ignorant of them.

This brings to consideration of what opportunities for professional agency teachers have in CB curriculum models in terms of influences, choices, stances on their work and/ or their professional identities (Eteläpelto et al., 2013, p. 17). Priestley and colleagues (2012) illuminated how differently teachers approach, interpret and translate prescribed curriculum. The approaches range from 'getting through' the prescribed programme content, applying 'tried and tested' methods, drawing on exam tasks or opting for more experimental approaches by probing and stimulating learners to think. The agentic behavior acts out in having and proactively expressing concerns about curricular requirements, own work and learners' prospects, search for and experimenting with different teaching and learning strategies, broadening scope of learners' educational experiences and taking risks for curricular decisions.

The value of having agentic teachers is seen in questioning policies, selecting from wide repertoire of action maneuvers and enriching and challenging school curriculum discourses (Priestley et al., 2012, pp. 210–211). The authors illustrate how agency draws on the past and is oriented at future and how it may be limited by present context and social and material resources at disposition.

Another research of Goodson and Ümarik (Goodson & Ümarik, 2019) demonstrates that teachers can experience diverse degree of agency towards the same reform of curriculum standardization and that the reasons for these differences rest on direct engagement with the reform, personal histories and attributes, keeping connections with a professional field and schools' affordances for experiencing agency.

Literature review has illustrated how CB approach to curriculum design, teaching and assessment impacts actual teachers' practices. As already mentioned, in CB education the need for teachers' teamwork, team learning and engagement into professional networks and communities increases, however teaching historically has been performed individually and teachers in CB education programmes may want to preserve individual teaching goals even in integrated curriculum (Nissila et al. 2015; Wijnia et al., 2016). Moreover, changes in approach to teaching, issues of learners' motivation, importance of effective theory-practice connection strategies and their alignment with holistic work processes change the role of teachers (Tacconi et al., 2020). De Bruijn (de Bruijn, 2012) has conducted an empirical research on teachers competence in CB vocational education in the Netherlands and presented findings about expansion of teachers tasks, and related teachers' competences in terms of adaptivity, flexible use of instructional methods, stimulating students' identity learning and self-regulation. She noted that design of powerful learning environments and supporting learners' identity formation were the areas where teachers needed support the most.

1.5. Conceptual framework

Maxwell (2013, p. 39) refers to conceptual framework as the system of concepts, assumptions, expectations, beliefs and theories, a tentative theory of the phenomena studied, supporting and informing research. It is a model of what is 'out there' and 'what is going with these things', an outline of investigated concepts, processes and their interconnections (Miles at al., 2014). Design of conceptual framework is informed by paradigms and theories, other research and own experience, and not found (Maxwell, 2013, p. 41). This thesis aims to explore how vocational teachers enact the idea of competence and constructs of competencies from their textual representation (i.e. statements found in official texts, such as standards, profiles and

curriculum) in the school-setting. The research is informed by a combination of perspectives and theories (Lincoln et al., 2011; Maxwell, 2013) and is guided by social constructionism, social and critical realism, theory of skill formation systems, policy enactment theory and teacher agency theory.

Construction of meaning and representations of competence

The lens of social constructionism helps to illuminate the foundations, the process of emergence and 'institutionalization' of 'competence' and 'CB education' projects. Social constructionism is premised on the idea that reality in its total sense is not given, but is socially constructed by individuals (Berger & Luckman, 1966; Crotty, 1998; Endreß, 2016), that what seems natural to many is instead social, intentionally planned and manipulatively created (Alvesson & Sköldberg, 2009, p. 36).

Berger and Luckman (1966) were primarily interested in how social processes shape knowledge and had remarkably contributed to the development of sociology of knowledge, however, their thoughts also illuminate structural analysis of social world. According to these authors, the reality is constructed by humans through the processes of externalization, objectification and internationalization. Through externalization humans turn subjective meanings into human activity and, consequently, into social order which confines stability. All the human activity can be habitualized – defined as a pattern and later reproduced. Next, typification of habitualized actions results in institutionalization of these actions and their actors in order to preserve social control (Berger & Luckman, 1966, p. 76). It is precisely this institutionalized world – objectivated human activity - which is perceived and internalized as objective reality. To sustain such world and to transmit it, it has to be legitimated - explained and justified. Legitimation 'explains' the institutional order by ascribing cognitive validity to its objectivated meanings (p. 111). Thus, social constructionists refrain from questioning 'what is reality' and 'what is real' – their interest is established, institutionalized and legitimated definitions of reality (Endreß, 2016). Language is a central element in constructing reality. It allows to objectify and typify experience and anonymize it. Through language we communicate meanings and construct the reality, through typification and objectivizations we transform human experiences into the object of knowledge, integrate it into tradition, education and transmit to other contexts and through time.

Ideas of social constructionism can be applied at macro and micro level analysis (Cunliffe, 2008). At macro level, they allow to interpret the competence and competencies as a shared assumption, a product of social construction, a meaning which was socially

constructed through interaction and mediation of individuals, based on agreements of social actors – 'stakeholders' - through political influences and ideas coming from research and practice in particular cultural and societal context (Vonken, 2017). It exposes the educational goals (and ends) in terms of competence and competencies as social constructs – typified, objectivated and legitimated (also in terms of textual representation) (Alvesson & Sköldberg, 2009; Hodge et al., 2020). Social constructionism perspective at macro level implies that educational and curriculum reforms are the result of negotiations and social agreements of social actors and institutions and subject to interests and power conflicts.

Micro-level focus shifts attention to the process of producing the meaning of a competent graduate and construction of curriculum and instruction in schools settings under various influences, in particular socio-cultural context and in the communities of practice (Billett, 1995). It helps to understand the teachers position towards curriculum enactment – that the meaning they give to competence, the way they construct and enact their own curriculum goals is a negotiated process, but at the same time it is affected by pre-existing definitions and social, cultural, historic context in and beyond school. The latter perspective in the research is supplemented with the theory of enactment described below. Social constructionism explains that competence of learners is developed in confrontation and social interrelation between a teacher and a learner, enactment of curriculum goals from this point of view is exactly socially constructed.

Critical realism and social realism

Social constructionist approach is challenged by critical realists. If social constructionists focus on empirical level of reality, critical realists turn to objective deep structures and mechanisms and define reality through empirical, actual and real domains (Alvesson & Sköldberg, 2009; Wheelahan, 2010). Reality in the view of critical realists consists of different dimensions, such as material, ideational, artefactual and social (Fleetwood, 2005; Wheelahan, 2010). Critical realists are interested in explaining the real: that, what has a causal effect for material objects, ideas, discourses, human actions, structures and (generative) mechanisms or causal powers (Wheelahan, 2010). Critical realist position also has certain implications for curriculum: curriculum needs to be constructed so that it would allow learners to understand 'the real', and teaching should go beyond 'empirical' and should engage in 'real' and 'actual' (Wheelahan, 2012). It is hardly achievable if curriculum focuses only on experiential, problem-based methods (Wheelahan, 2010).

A shared stance in defending the existence of objective knowledge is adopted by social realism, among representatives of which are Young, Muller, Moore, Maton (Karl Maton & Moore, 2012; Moore, 2013; Wheelahan, 2010; Young, 2008). According to Moore (2013), social realism completes social constructionism project by 'securing a strong epistemological foundation for its claims about the ways in which the construction of knowledge is inevitably entwined with other social forces; relations of inequality and power' (p. 350). In line with the premises of social constructionism it is argued that knowledge can be regarded as objective exactly because of networks of social relations, institutions and codes of practice built by knowledge producers (Moore & Young, 2012). Social realists compromise with the claim about social basis of knowledge but advocate for the separation of objective concepts from practical subjective reality.

Social realists advocate for strengthening the position of knowledge in curriculum through the 'powerful knowledge' (Wheelahan, 2007; Young, 2013). Such a claim has implications to VET curriculum which usually prioritizes practice-related, contextualized knowledge over theoretical. Powerful knowledge is positioned on vertical discourse of Bernstein classification and by providing access to 'the system of meaning in disciplinary knowledge' it enables individuals to encounter new possibilities, search for truth, develop critical stance and participate in democracy (Unwin, 2004; Wheelahan, 2015). Proponents of this perspective insist that powerful theoretical knowledge in the form of disciplines should not be collided with everyday knowledge. Students need both types of knowledge and would benefit from encountering and recognizing their boundaries (Wheelahan, 2007; Young, 2013). It was decided to add critical and social realism perspective to the research conceptual framework in order to probe the grounds of competence constructs.

Development of competence from the point of view of skill formation system

VET systems are a part of skill formation policies and should be examined in broad political, societal and social context. Existing models of skill formation explain the processes, the actors and the contexts of skills development and deployment. Positioning constructs of competence, its texts and enactment through curriculum inside of these models illuminates a multi-level perspective at CB education. Important to note that in skill formation systems the term 'skills' is prioritized over the terms 'competence / competencies' so as to incorporate labor market and education dimensions (see the discussion about terminology in section 1.1.).

There have been numerous trials to analyze skill formation through 'skill formation regimes' which explain patterns of skill formation systems. The regimes are defined by the role

of state and market (employers) in skill formation, stakeholders' cooperation arrangements and skills development institutionalization (school-based or work-based). There are diverse classifications of skill formation regimes. For example, Busemeyer and Trampusch (2012), referring to various degrees of involvement of employers in VET and public commitment for VET issues, have distinguished liberal, statist, segmentalist and collective skill formation regimes (Busemeyer & Trampusch, 2012), while Ashtong, Suny and Turbin (2000) differentiate between market, corporatist, developmental state and neo-market models (cited in Wheelahan & Moodie, 2017). Another related concept is skills ecosystems specified as clustered interrelated bottom-up skill formation practices within which demands for skills are negotiated and defined. Finegold (1999) draws an analogy between skills ecosystems and a general ecosystem definition: both need a catalyst or a trigger to develop, nourishment and support (Wheelahan & Moodie, 2017). Greater balance between skills supply and demand is achieved in skill formation systems compatible with the ecosystems approach (ibid).

Returning back to theorization of the skill formation system model in this thesis, in order to explain the emergence of CB VET curriculum and its enactment process we refer to the skill formation model proposed by Tūtlys, Markowitsch, Winterton and Pavlin (Tūtlys, Markowitsch, et al., 2022). This model illuminates the macro, meso and micro level contexts and factors for skill formation and helps to capture political and economic reasons behind CB education. Within the model, skill formation system is perceived as a complex framework encompassing macro, meso and micro level actors. At macro and meso levels these actors design and implement skill formation and related employment, economy and social welfare policies whereas micro level actors are engaged in skill formation and deployment at practice level. Skill formation system is impacted by external environment changes and top-down influences via policy and institutions, individual and corporate perceptions of these changes and bottom-up influences (via individual behaviors and micro level skill formation). Building on the activity theory (Engeström, 1999), macro, meso and micro levels of skill formation systems are activity systems on their own in a network of relations to the other level skill formation systems.

Enactment of CB curriculum

The main focus of the thesis is the 'travel' of competence and competencies as constructed in competence texts to educational practice, i.e. the author tries to understand how, through which objects and artefacts the constructs and their textual representations are enacted by teachers in

learning (Engeström, 1999). Understanding of this ‘travel’ is informed by theoretical insights on curriculum enactment, curriculum theory and activity theory.

When considering enactment process it is important to differentiate between different curriculum layers as explicated by many scholars and to see their interaction (Table 1). There are different views on curriculum representations, the most common one is a distinction of three layers (intended / prescribed; implemented / enacted and experienced / attained).

Table 1

Layers of curriculum

<table>
<tr><th>Goodlad et al., 1979</th><th>Schmidt et al., 1996</th><th colspan="2">Remillard and Heck, 2014</th><th>Billett, 2011</th><th colspan="2">Van den Akker et al., 2013</th></tr>
<tr><td>Ideal</td><td></td><td colspan="2"></td><td></td><td rowspan="4">Intended</td><td>Ideal</td></tr>
<tr><td rowspan="3">Formal</td><td rowspan="3">Intended</td><td rowspan="3">Official</td><td>Curricular aims and objectives</td><td rowspan="3">Intended</td><td rowspan="3">Formal</td></tr>
<tr><td>Content of assessments</td></tr>
<tr><td>Designated curriculum</td></tr>
<tr><td>Instructional</td><td rowspan="2">Implemented</td><td rowspan="3">Opera-tional</td><td>Teacher intended</td><td rowspan="2">Enacted*</td><td rowspan="2">Implemented</td><td>Perceived</td></tr>
<tr><td>Operational</td><td>Enacted</td><td>Operational</td></tr>
<tr><td rowspan="2">Experiential</td><td rowspan="2">Attained</td><td rowspan="2">Student outcomes</td><td rowspan="2">Experienced</td><td rowspan="2">Attained</td><td>Experiential</td></tr>
<tr><td>Learned</td></tr>
</table>

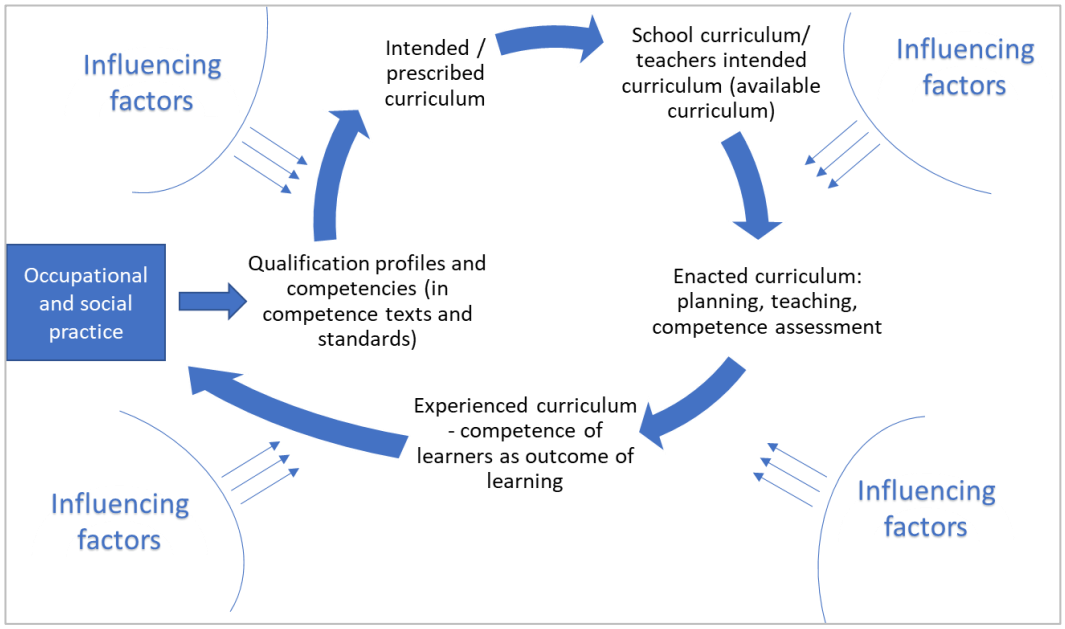
* Can be distinguished into ‘available’ under present resources and implemented curriculum, also may include ‘hidden curriculum’

Sources: (Billett, 2011; Remillard & Heck, 2014; van den Akker et al., 2013)

Qualifications, competence constructs, intended, enacted and experienced curriculum are in a circular relation. A relation between occupational and social practice and this circular movement, influenced by diverse factors, is illustrated in the Figure below.

Figure 3

Circular relation of qualifications, competence constructs and curriculum



Intended curriculum reflects interests of stakeholders (such as ministerial and other governing bodies, labor market, trade unions, international organizations, etc.), specifies expected outcomes and content of curriculum in terms of competencies or other type learning outcomes (Billett, 2011). It may also specify methods and assessment. Enacted curriculum is the one which is actually put into operation in instruction and assessment activities by teachers. It is very dynamic and relational: it is impacted by 'circumstantial', institutional and individual factors, available resources, teachers experiences and preferences, it is the result of teachers translation and interpretation, collaborative mediation and meaning making (Billett, 2019; Edwards et al., 2009; Hodge et al., 2020). Teachers get familiar with intended curriculum, make meaning of it and translate it into own documentation (Remillard and Heck (2014) name it 'teacher's intended curriculum') and pedagogical activities (enacted curricula) in varying and multiple ways. Thus, intended curriculum is not instrumentally 'implemented', it is rather 'recreated', 'transformed', 'decoded and recoded', 'interpreted, understood and translated' (Apple, 2008; Ball et al., 2012; Billett, 2019).

Although producers of intended curriculum might expect uniformity and fidelity from teachers in implementing curriculum, in practice teachers make sense of curriculum in different ways (Billett, 2011; Priestley et al., 2012). For instance, Apple (Apple, 2008, p. 26) in teachers' curriculum acceptance models distinguished dominant receiving, negotiated receiving and oppositional receiving. Ball et al. (2012) based on analysis of policy enactments in secondary

schools differentiate the policy (curriculum) 'enactors' roles into narrators, entrepreneurs, outsiders, transactors, enthusiasts, translators, receivers and critics (p. 49). Billett (2011, 2019) argues that the difference between intended and enacted curriculum to a large extent is due to the lack of teachers' involvement in intended curriculum making processes and advocates for school-based curriculum development model rather than top-down approach to curriculum. Miller et al. (2010) makes the point that the transition from intended to enacted curriculum should not be simplified and that differences in enacted curriculum are due to a range of factors impacting curriculum making process and teachers mediations.

Thus, enactment of curriculum depends on teachers meaning making of intended curriculum and taking decisions regarding the selection of learning content, integration of theory and practice, integration of school and workplace curricula, sequencing of learning content, teaching and assessing strategies, alignment of curriculum decisions with learners' needs and resources available (Billett, 2011; Hodge et al., 2020; Hordern, 2019; Sturing et al., 2011; Wesselink, Dekker-Groen, et al., 2010). At the same time, the level of curriculum prescription is questioned by many (Billett, 2011; Hodge et al., 2020; Young, 2013), while admitting that competence texts are authoritative, powerful documents, which tend to direct teachers' interpretation, thus, leaving out important aspects of social practice. It is also claimed that over-emphasis of 'assessable' learning outcomes, a risk of CB education, narrows the enacted curriculum (Miller et al., 2010, p. 241).

Experienced curriculum is the outcome of learning as perceived, constructed and experienced by learners. Due to transformations in enacted curriculum, organizational and individual factors, learners prior experience, personal interests, capacities and decisions, there will always be a gap between intended aims of curriculum, its enactment and students' learning experiences. In relation to this, Billett argues that understanding learners' needs should drive curriculum enactment (Billett, 2011).

The paragraphs above focus on 'what' of curriculum enactment (intended, enacted and experienced curriculum). The thesis is centered on intended and enacted curriculum and the in-between these layers, i.e. what meanings teachers give to this type of curriculum and what are the strategies for its 'enactment'. Building on theorizations of layers of curriculum (Table 1), the author is interested in how intended CB curriculum is operationalized and put into pedagogical actions. The understanding of the dynamic of curriculum as a policy text enactment is enriched by the theory of enactment of education sociologist Stephen Ball and colleagues (Ball et al., 2012), who ground their theory on Foucault's work on discourse and

governmentality, actor-network theory, critical discourse analysis and policy implementation analysis.

CB curriculum as a policy may be seen as a discursive formation which carries the meaning of competence (and a vision of a competent learner) from policy to school practice (Ball et al., 2012, p. 123). Indeed, representatives of post-modern tradition in education research, Usher and Edwards (1994), have analyzed the discourse of (occupational) competence and according to them, 'competence constructs and reflects a new technology of power…' (p. 117). Ball and colleagues see the enactment as a 'creative process of interpretation and recontextualization' of the text and its translation into action, in relation to history and to context, with the resources available (p. 3). For them, the enactment involves agency, discourse and power (p. 8). Enactments are 'collective, creative and constrained', they 'bring together contextual, historic, and psychosocial dynamics into a relation with texts and imperatives to produce action and activities that are policy' (p. 71). Policy 'speaks' to teachers through curriculum and pedagogy, thus the question is how teachers make sense of policies and their representation (including curriculum), does it affect change in organization and pedagogy, or is the response 'fabricated' for the purpose of accountability and audit (p.10).

In the enactment, two stages of the process are important: an interpretation covering reading and making sense of (prescribed) texts (cf Hodge, 2018; Rekkor et al., 2013) and a translation of these texts into institutional texts and putting them into practice (the latter area is less elaborated by Ball et al.). Building on Ball et al. (2012), teachers are 'meaning makers' with their way of creative and (or) committed understanding and construction of curriculum enactment process, but the discourses that make up CB curriculum policy and discourses around it (policy discourses and 'master discourses') also play out on teachers and impact their interpretations and translations. The enactment of curriculum is tightly impacted by contexts of school and a variety of other factors: teachers and students individual factors, teachers professional identity, organizational factors (material, history, micro-political, cultural), curriculum (level of prescriptiveness, writerly vs readerly texts) and external factors (policy, funding, contributions of external actors, external pressures and demands) (Ball et al., 2012; Billett, 2011; Edwards et al., 2009; Miller et al., 2010; Vähäsantanen & Eteläpelto, 2011). Moreover, Ball and colleagues argue that schools' artefacts and other material resources produced by senior staff or teachers themselves, staff meetings, in-service training serve as micro-technologies in policy enactment (Ball et al. 2011; Ball et al. 2012; Ball, 2015; Perryman et al., 2017). Similarly, from the activity theory position (Engeström, 1999), when analyzing any activity system, one should consider historical and cultural context, objects at which

activity is oriented, tools (artefacts), rules, community and labor division which affect and mediate actions of a subject.

The curriculum enactment analysis would be partial without considering how teacher agency is exercised in these processes. Teacher professional agency is defined as the teachers' capability to judge, to influence, to make choices and to act. According to Biesta and Tedder (Biesta & Tedder, 2007, p. 135) agency is 'the ability to exert control over and give direction to one's life'. Vähäsantanen et al. (2017, p. 253) part from attributing professional agency to individual's capacity and define it as an action-based phenomenon. Eteläpelto et al. propose that professional agency is 'exercised when professional subjects and/or communities influence, make choices, and take stances on their work and professional identities' (Eteläpelto et al., 2013, p. 61). For Vähäsantanen (Vähäsantanen, 2015), teacher agency manifests in terms of influence on own work, position and actions towards change (reform) and the nature of professional identity.

Biesta and Tedder (2007, p. 137) advocate for ecological view at teacher agency in which the agency results in 'interplay of individual efforts, available resources and contextual and structural factors' (Biesta & Tedder, 2007, p. 137). The importance of availability of cultural, material and relational resources of school and community within particular ecology for achieving agency is stressed. Various researchers also bring out a temporal element of agency through its relation to the past experiences, possibilities of present and future projections (Priestley et al., 2012) and its' different manifestations in particular moments and situations (e.g. at the start of the reform) (Goodson & Ümarik, 2019; Vähäsantanen, 2015).

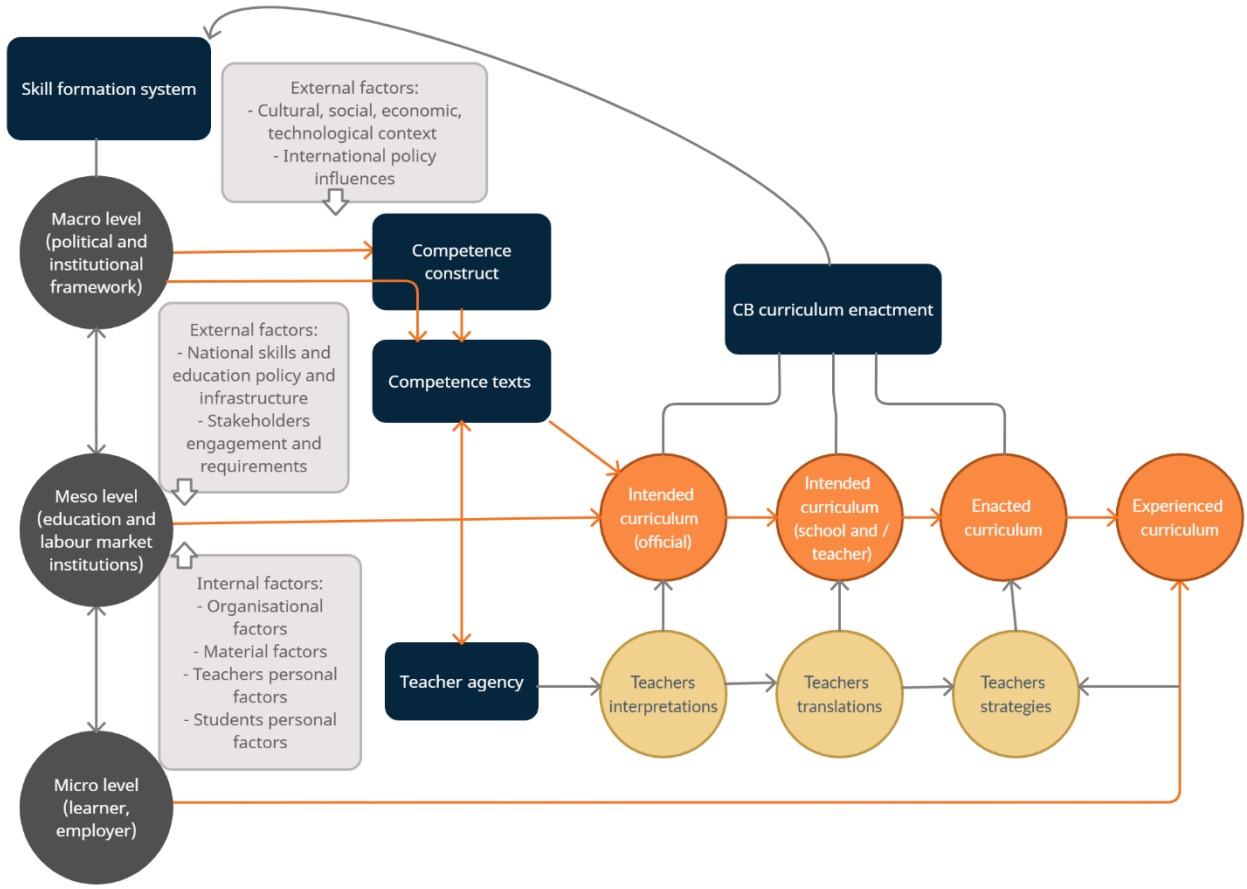
Agency can be experienced differently: it can exercise either an active, innovative response resulting in creation of something new, a passive acceptance, tolerance and preservation of current situation, or a stance not to act, a protest. Priestley et al. (2012) based on conceptualizations of a teacher agency by Emirbayer and Mische (1998) through iterational, practical-evaluative and projective elements link different teachers agency manifestations with personal teachers histories, their attitudes and values, proactive and projective work engagement and school contexts (Priestley et al., 2012). Similarly Vähäsantanen (2015) based on empirical research of vocational teacher agency in VET reform contexts in Finland and research studies' meta-analysis observed instances of weak and strong agency in terms of influence on own work and diverse engagements with reforms ranging from active participation (refinement of organizational practices), professional development, balancing act, withdrawal and passive accommodation.

Policy reforms often claim to be in favor of teachers as autonomous curriculum-makers but it was already noted that competence texts have an authoritative power. Moreover, they frame teaching processes, what can be regarded as a threat to teacher agency. The permissiveness of curriculum as any other policy may be expected to result in a wider manifestation of teacher agency, however, there are observations that some teachers may, although with given autonomy, continue former curriculum practices. Indeed, Priestley at al. (2016) notice that 'strategic' compliance with new curricular policy is a frequently observed phenomenon. Similarly, Vähäsantanen (2015) revealed how top-down instrumental measures and strong managerial control constrain vocational teacher's agency and, at the same time, achieve fast transformation of educational practice. Goodson and Ümarik relate diminishing sense of agency to neo-liberal policy (Goodson & Ümarik, 2019, p. 600). On the other hand, even without opportunities to influence wider level reform concepts, teachers do manifest their capacity to work in a new way and bring change at practice level (Goodson & Ümarik, 2019; Vähäsantanen, 2015).

To summarize, this conceptual framework (Figure 4) suggests that for analyzing the ways in which teachers enact CB curriculum we need to consider how teachers make sense of competence concept and CB curriculum, the interactions (interpretations and translations) between intended and enacted curriculum and strategies that teachers use to enact curriculum and 'competence' in general sense. It is also important to consider how skill formation system, as a network of activity systems, legitimates and institutionalizes competence: how competences are constructed in prescribed texts (such as profiles and standards), how they are recontextualized and represented in intended official curriculum. Finally, from the point of view of dynamics of enactment processes, it is necessary to explore which contexts and factors play out on CB curriculum design and on teachers' decisions regarding curriculum enactment strategies and how teacher agency is exercised in these processes.

Figure 4

Conceptual framework of CB curriculum enactment



CHAPTER II. METHODOLOGY

2.1. Research design

Due to the explorative nature of the research a qualitative research paradigm was applied. Qualitative research is better suitable for holistic analysis of the processes in the entirety of investigated cases. Qualitative research enables to explore the educational phenomena in a natural setting, it has an emergent design and is flexible, it enables incorporating various sources of data, it is inductive and oriented at participants meanings about issues of research. In qualitative research the researcher is a key instrument of the research who constructs data together with research participants (Creswell, 2009; Schreier, 2012).

The research aims to reveal the processes of CB curriculum enactment and its problematic areas in Lithuanian and Italian school-based VET systems, while assessing related transformations in the work of vocational teachers and trainers and their implications for vocational teachers and trainers' competence needs. On broad terms, the aim of the research is to understand and reconstruct the reality of CB curriculum in school-based VET systems from the position of the main actors of the processes, vocational teachers and trainers, and explore the implications of these processes for them. Thus, the research is based around constructivist / interpretativist theoretical perspective which accommodates 'a bricolage' of theories of social constructionism, social and critical realism, theory of skill formation system, policy enactment theory and teacher agency theory (Denzin & Lincoln, 2017, p. 219). We're interested in how the reality around competence phenomenon is constructed and co-created on macro, meso and micro levels, for and within VET system, and in meaning making activities of CB curriculum enactors – how do they understand modern curriculum and its relation to occupational and social practice, textual representations and instructional practices and which choices they make to enact it.

Research questions:

(1) How does implementation of CB education change the VET processes and systems in Italy and Lithuania?
(2) How do vocational teachers and trainers enact CB curriculum?
(3) What are the implications of the implementation of CB curricula for vocational teachers and trainers' activities and competence?

The research is composed of three parts which complement each other.

Box 1

Research design

Research stages	Stage I. Comparative analysis of competence-based VET curriculum reforms and vocational teachers and trainers training institutional framework in Lithuania and in Italy	Stage II. Comparative empirical research of competence-based curriculum enactment in Lithuania and in Italy	Stage III. Identification of methodological and institutional factors necessary for professional development of vocational teachers and trainers in the context of implementation competence-based curriculum in school-based systems
Data sources	• Interviews • Policy documents • Policy analysis, academic and methodological papers • Qualification profiles and qualification standards	• Official curriculum • School level documents • Teacher level documents	
Phenomena analyzed	Competence-based curriculum Competence-based curriculum enactment Vocational teacher activities and competence		

2.2. Rationale for doing research in Italy and in Lithuania

Comparative research helps to better understand the phenomenon and its multi-level nature by identifying and examining similarities and differences of the phenomenon in different national, historic and cultural contexts and exploring social processes behind it (Evans, 2020; Landman & Carvalho, 2016). Comparative perspective is also valuable in exploring and comparing present or possible implications of different models for practice.

The present research contributes to the body of knowledge on CB VET curriculum design and enactment theories and the controversies related to adoption of this type of curriculum in EU countries by applying 'the most different systems design' (Landman, 2003). On one hand, the VET systems of Italy and Lithuania are institutionally based on the dominant role of schools in the provision of training, however if Lithuania can be attributed to countries with state-regulated school-based model (Tūtlys, Gedvilienė, et al., 2022), Italy would belong to the group of countries with market-led school based VET (Winterton, 2007). Parallels can be drawn into how CB curricula was introduced, with both countries' qualification standards specifying competencies, and how countries are striving to introduce apprenticeships and strengthen work-based learning elements in VET (Ronchetti, 2017; Tacconi et al., 2020; Tūtlys & Aarna, 2017). However, there are some rather important differences in the socio-institutional models and in the historical pathways of skill formation in these countries: Italy represents the

state-led neocorporate model of skill formation, which has been significantly influenced by the development of the European welfare state model, whereas skill formation institutional model in Lithuania is defined as transitional and is marked with the post-socialist institutional transition and important role of the EU integration, involving intensive policy borrowing and policy learning in institutional and methodological approaches. According to Cedefop (Cedefop, 2020d), Italy has more characteristics of Visegrád countries cluster, than that of Southern Europe countries, and Lithuania together with other Baltic countries is positioned in another group of neoliberal model of skill formation, although with such specificities as strong involvement of the state and domination of school-based VET.

School-based VET systems face particular challenges in implementing CB curriculum and in enabling teachers and trainers to work with it (Tacconi et al., 2020). Comparative research in Italy and in Lithuania allows deeper understanding and explanation of phenomena by examining two countries' contemporary CB education models, understanding similarities and differences in teachers' pedagogical approaches in the light of CB education 'from inside', understanding and comparing teachers' dilemmas, issues and challenges (Miles et al., 2014, Evans, 2020). The research will provide knowledge and ideas for both policy learning and new methodological approaches in designing and enacting curriculum as well as fostering of VET teachers training and competence development. Systemic comparative studies on VET curriculum development and related pedagogical approaches are missing (Cedefop, 2022; Evans, 2020), thus comparative perspective of analysis of changes invoked by CB curriculum and their implications to vocational teachers and trainers work and competences in Italy and Lithuania will strengthen the applicability of research findings.

2.3. Comparative analysis of competence-based VET curriculum reforms and vocational teachers and trainers' training institutional framework in Lithuania and in Italy

According to Bray et al., in comparative studies it is necessary to understand the contexts in which educational systems are positioned (Bray et al. 2007), thus the aim of this study was to explore contexts, institutional framework and processes of curriculum reform as well as vocational teachers' preparation in two countries.

Comparative research can have two perspectives: a-priori perspective when comparative research is defined from the beginning and a posteriori perspective, when comparative perspective is applied after the empirical research (Palmberger & Gingrich, 2014). In this research study a-priori perspective is applied. The research follows the comparative

research phases (Frommberger & Krichewsky, 2012; Palmberger & Gingrich, 2014; Pilz & Li, 2020):

- defining the research question;
- defining the units of comparison, criterion for comparison (*the tertium comparationis*) and their features;
- determining the research method;
- applying comparison criteria for country analysis;
- systemic comparison and interpretation.

The research question which guided the comparative research was 'How does CB education change the VET processes and systems in Italy and Lithuania?'. Units of comparison and their criteria defined for the purposes of comparative analysis are presented in table 2.

Table 2

Units of comparison

Units of comparison	Criteria for comparison
Context of VET systems	- Labor market, economic, industrial relations and other factors having impact on VET and CB education processes - Social and demographic factors having impact on VET and CB education processes
Institutional framework (macro, meso, micro levels of skill formation system)	- Division of responsibilities for the design and implementation of curriculum - Stakeholder engagement and social dialogue
Policy intentions and reforms	- Skill formation - Qualification system - CB education related reforms
Vocational teachers and trainers competence and training	- Vocational teachers and trainers training system - Vocational teachers and trainers activities changes related to CB education introduction - Vocational teachers and trainers' competence needs in relation to CB education
VET curriculum	- Conceptions of VET curriculum and their ideologies / Purpose and perspective (intentions) (Adamson & Morris, 2007; Schiro, 2012): - Manifestation of competence construct - Curriculum planning, development, implementation system - Intended and enacted curriculum manifestations* o Outcome oriented vs input oriented: representation of competence and learning outcomes o Flexibility of curriculum for teacher: prescriptiveness vs open curriculum o Flexibility of curriculum for learner: learner needs and preferences driven vs supply driven o Learner-centered curriculum vs teacher centered curriculum

	○ Powerful knowledge vs contextualized vocational knowledge ○ Occupational competence vs key competence ○ School-work boundary crossing situations *Adapted from Dietmar Frommberger and Léna Krichewsky (Frommberger & Krichewsky, 2012)

This study is grounded on documents analysis, defined as a research method, which helps to understand the context, track developments and verify the findings when combined with other methods (Bowen, 2009). In order to understand the context of VET curriculum, the author relied on international and national reports of VET systems. Another source was policy documents, administrative level (governing) documents (standards and qualification profiles), practice level documents (official curriculum, school level intended curriculum, teacher level intended curriculum). When selecting documents, the criteria of authenticity, credibility, representativeness and meaning as distinguished by Scott were applied (1990) (cited in Bryman, 2015, p. 546). Documents need to be treated as 'a social fact', i.e. produced, disseminated, shared, interpreted and translated constructions, texts authored and read by someone, with implied claims and implied readers (Atkinson & Coffey, 2004). Important to note that when documents are produced with the aim of governing and guiding teaching practices (such as curriculum or standards), they not only describe the intentions of education, they also create, inscribe subjects, their performance and outcomes (Ball et al. 2012). Thus, analysis of documents is highly relevant for analyzing curriculum enactment processes.

The documents analysis encompasses processes of content analysis and a kind of thematic analysis (Bowen, 2009). The former method is used to reduce the focus of data analysis whereas the latter – in discovering common patterns among the documents. Such method corresponds to qualitative content analysis. The overall data analysis in the comparative study was performed by applying the four stages model (Pilz, 2012):

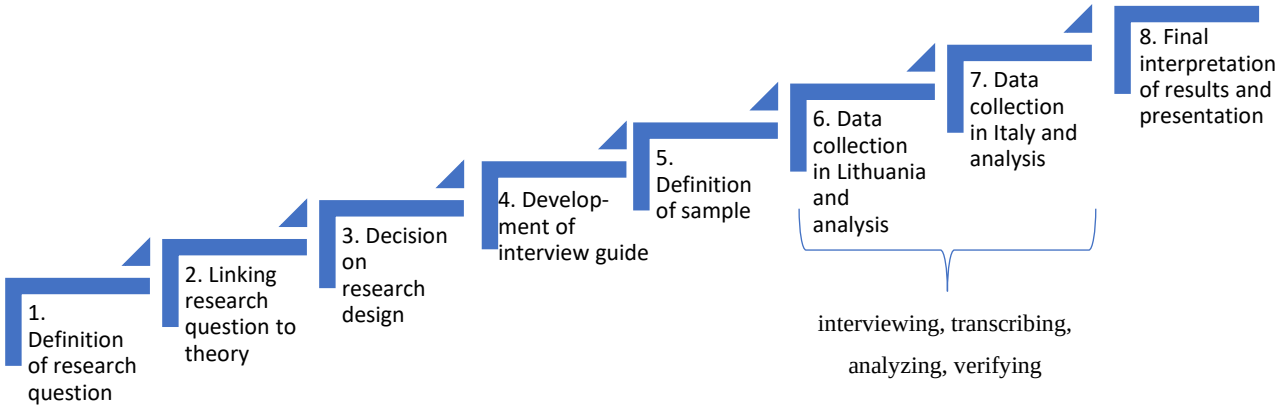
- the descriptive stage focused on description without theoretical justification;
- the explanatory stage aimed at explaining and understanding;
- juxtaposition stage was the first stage of one country data comparison against the criteria set;
- comparative stage involved systematic comparison of countries with reference to their contexts, exploring their relations and drawing of conclusions.

2.4. Empirical research of competence-based curriculum enactment in Lithuania and in Italy

With the aim to explore the enactment of CB curriculum from the perspective of vocational teachers / trainers, we have defined the research question as follows: 'How does competence-based curriculum change every-day vocational teachers / trainers' practices and what experiences of teachers / trainers enact it?'. The research logic is presented in the figure below.

Figure 5

Stages of research



Since the research aimed to explore the enactment of CB curriculum from the perspective of vocational teachers / trainers, research data was collected using semi-structured interviews. Interview is a data collection method which helps to access opinions, insights, attitudes and experiences of interviewees. Qualitative interview is the process where a researcher works with interview participants to produce interview data together, and the production of interview data continues from the start of interview to the final interpretation of its results (Brinkmann & Kvale, 2015). Interviews which are built on phenomenology and grounded theory tradition focus on understanding the 'what' of the lived experience, whereas another type of interviews under discourse analysis and conversation analysis tradition would seek at capturing 'how' of interview as a social practice (Brinkmann & Kvale, 2015). At the same time, Brinkman and Kvale claim that interviews can balance between these two extremes and interviews within this research were led by such an orientation – understanding both, *what* and *how* of curriculum enactment processes.

The interview guide (presented in Annex 1) was constructed taking into consideration the concepts about curriculum enactment derived from literature review. The interview questions were formulated departing from the position of research question and addressed meanings of intended competence texts for teachers, their strategies for organization of

learning, instruction and competence assessment. Interview guide started with introductory questions about the changes felt in relation to curriculum implementation, then moved around the circle of curriculum enactment: interpretation of competence texts, organization of learning, learning and instruction and competence assessment. According to situation, questions from the interview guide were supplemented with follow-up, probing, specifying and interpreting questions (Brinkmann & Kvale, 2015). This way, questions were targeted at sense-making activities and at enactment processual activities, the author was also interested at participants tensions and challenges (Blossing et al., 2019). In line with the idea of qualitative interviews, the questions invited for descriptions and reflections on curriculum related changes, concrete examples of teachers' actions and methods used to help learners to construct knowledge and develop skills, reflections on personal and organization challenges in planning and implementing training and teachers' competence-related challenges. The aim was to access specific events and actions, particular experiences of teachers' and to produce justified and trustworthy descriptions and narratives of teachers everyday-experiences in enacting CB curriculum (Brinkmann & Kvale, 2015; Maxwell, 2013). A draft of interview guide was piloted with Italian and Lithuanian interviewees and after the pilot, a few questions were re-formulated.

2.4.1. Research participants in Lithuania

Throughout the research 28 qualitative individual semi-structured interviews were performed with vocational teachers and administration staff. In order to gain in-depth insights into how CB curriculum is enacted, a purposeful sampling strategy was applied. Due to a recent introduction of modularized VET curricula it was decided to analyze enactment of the most popular VET programmes in construction (decorators, N=6), personal-services (hairdressers and cooks, N=14) and engineering areas (car mechanics, mechatronics and welders, N=8) at upper-secondary education level (ISCED 3, EQF 4). For conducting interviews, schools having the largest number of students and experience in delivering modularized VET curricula for at least three years were selected. To maintain a representation of different regions the research involved schools from five largest regions (Vilnius, Kaunas, Klaipėda, Panevėžys and Šiauliai). The interviews (see Table 3) were conducted with 14 vocational teachers working with modularized curricula and 14 representatives of administration (deputy directors responsible for teaching affairs or heads of departments / curriculum units). Majority of respondents were between 45 and 64 years (N=19). Six respondents were males. Absolute majority of teachers had a longer than 11 years teaching experience whereas half of administration staff representatives had been working in schools for 31 and more years.

Table 3

Respondents by age, work position and work experience, Lithuania

Age of respondents	Vocational teacher*	Deputy director**	Head of department / curriculum unit***
25-34	1	1	
35-44	3		1
45-54	2	2	3
55-64	6	4	2
65 and more	2		1
Total	14	7	7
Work experience	Vocational teacher	Deputy director	Head of department / curriculum unit
1-10	1	1	0
11-20	7	0	2
21-30	3	2	2
31 and more	3	4	3

* Participants: LT-R1, LT-R2, LT-R3, LT-R4, LT-R6, LT-R8, LT-R10, LT-R11, LT-R14, LT-R16, LT-R18, LT-R20, LT-R22, LT-R24

** Participants: LT-R5, LT-R7, LT-R9, LT-R12, LT-R13, LT-R15, LT-R23, R25, LT-R28

*** Participants: LT-R17, LT-R19, LT-R21, LT-R26, LT-R27

2.4.2. Research participants in Italy

Research in Italy coincided with the COVID-19 pandemic, thus it was decided to carry out online interviews via zoom platform. Throughout the research 20 interviews were performed with Italian respondents who acted as vocational teachers (trainers) and / or took various managerial positions. The research focused on regional sub-system of VET, since it deals directly with implementing VET curriculum based on qualification profiles. National system of VET (*istituti professionali*) is in the phase of connecting its' programmes with the national and regional system of qualifications (*susidiarità complementare, susidiarità integrativa*), thus *istituti professionali* were not included into the research. Distribution of respondents by age and their work position is presented in the table below.

COVID-19 pandemic has complicated availability and motivation of potential research participants, thus it was decided to apply a convenient sampling strategy, when e-mails with invitation for interviews were sent to organizations uniting VET centers and individual VET centers. After receiving a confirmation of interest, a time for online interview was agreed. The choice of strategy did allow reaching information-rich participants from different types of VET centers, disciplines and occupational sectors (hospitality, electricity, electronics, informatics, industrial design, mechanics). Interviewees also represented diverse regions: nine were from

Lombardia, six were from Veneto, two were from Trentino-Alto Adige and three respondents were from Sicily, Lazio and Piemonte regions.

Table 4

Respondents by age, work position and work experience, Italy

	Vocational teacher*	Administration staff**
Age of respondents		
25-34	2	
35-44	5	1
45-54	5	3
55-64	2	1
65 and more		1
Work experience		
6-10	5	
11-20	5	1
21-30	2	
31 and more	2	5
Total	14	6

* Participants: IT-R2, IT-R3, IT-R4, IT-R5, IT-R7, IT-R9, IT-R10, IT-R11, IT-R13, IT-R15, IT-R16, IT-R18, IT-R19, IT-R20

** Participants: IT-R1, IT-R6, IT-R8, IT-R12, IT-R14, IT-R17

2.4.3. Data analysis

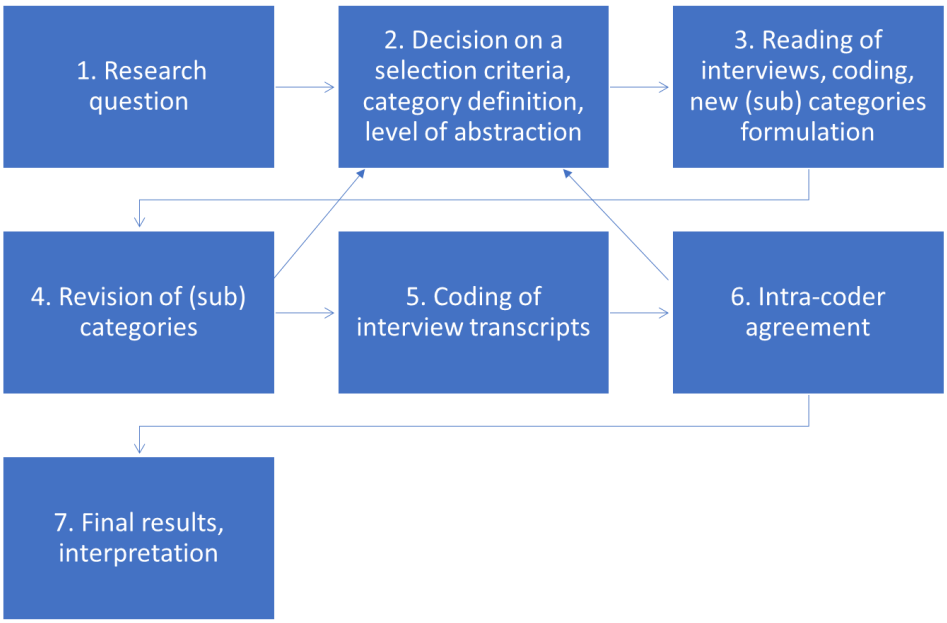
Interviews were transcribed verbatim and analyzed by applying a qualitative content analysis method. Qualitative content analysis (QCA) is distinguished as a qualitative research method for systematic description of qualitative data (Mayring, 2014; Schreier, 2012; Žydžiūnaitė & Sabaliauskas, 2017). Its key defining features are a systemic approach to data, reduction of data to parts meaningful for the research and a flexibility of the method. QCA is centered around interpretation of symbolic material and interpretation of personal and social meanings. Lindgren and colleagues argue that abstraction and interpretation are the central methodological tools in QCA methodology (Lindgren et al., 2020). According to them, QCA is a non-linear work with materials defined by de-contextualization and re-contextualization of data when interview participants statements about their experiences are separated from the context and then combined into new patterns to allow in-depth understanding of phenomena studied (p. 2). De-contextualization embraces the decisions about selection of meaningful units for coding, condensing meaningful units and their coding (including decisions about their level of abstraction), whereas re-contextualization incorporates interpretative decisions about sorting

codes into subcategories (subthemes in latent content analysis), final decisions about names and messages withing categories / subcategories (themes / subthemes), and decisions about the relation between them.

QCA can be targeted at analyzing manifest or latent content and this research was targeted at the former. There are also several versions of QCA depending on category / subcategory development procedure (Mayring, 2014). For developing of subcategories and categories of Lithuanian research data we applied the inductive category formation method. All the coding procedures are reflected in the figure below (Mayring, 2014).

Figure 6

Category development



At the beginning the author carefully read interviews and built inductively a system of subcategories and categories which would help to understand the process of enactment of CB curricula by vocational teachers. The smallest component of the text to which a category was formulated was a meaningful sentence or a short narrative. Subcategories were formulated from data with open coding and augmented further as interview material was coded. Such coding strategy mirrored the grounded theory approach in coding, open coding and selective coding (Schreier, 2014, p. 89). After careful reading of transcripts, the emerging codes were assigned to describe participants statements. In searching for ways how to approach data, different coding strategies were considered (Bogdan & Bilken, 2007; Miles et al., 2014; Saldana, 2009). The author examined the data from different angles and while coding considered internal and external context, participants definitions of situation, participants perspectives, participants

curriculum enactment strategies, effects and implications of curriculum enactment as seen by participants, etc. To make decisions about the categories system, the coding system undergone several rounds of abstraction and interpretation. After open-coding categories were grouped and broader higher-order categories were assigned (Elo & Kyngäs, 2008). This, again, involved processes of abstraction and interpretation.

Until the creation of a stable category system it was revised several times. According to Mayring (2014) and Schreier (2012) at a point when a coding frame appears to be complete, it is important to revise a coding frame in terms of its correspondence to research question and level of generalization. This was performed after coding a half of interviews. After this, a coding procedure was repeated from the beginning. As recommended, to carry out intra-coder check, a coding procedure was repeated. No substantial changes to coding frame were performed. The coding process was assisted by the NVivo software (Bazeley & Jackson, 2014).

The procedure for analyzing the Italian part of the empirical research data followed the same steps. To facilitate comparison, the final framework of category system was compared and harmonized with system of categories and subcategories developed from Lithuanian part of research by considering and noting differences and supplementing the framework with emerged categories.

2.4.4. Reliability, validity and trustworthiness of research

Lincoln and Cuba (1985) claim that in qualitative research instead of typical criteria for quantitative research, such as, reliability, validity and objectivity, a criterion of trustworthiness should be applied for judging the quality of research (cited in Denzin & Lincoln, 2017). According to them, the trustworthiness encompasses credibility, dependability, transferability, and confirmability.

Still, Brinkmann & Kvale (2015) claim that in interview research it is important to look at interview knowledge from the perspective of objectivity in a sense that the researcher in interviews should be cautious of biases and accommodate a reflexive stance at interview data and its interpretations. Thus, reflexivity in terms of attentiveness to own prejudices and subjectivity and attentiveness to phenomenon under investigation and its contexts was an overarching principle for all research stages. This was achieved through filling a research journal and writing research memos as well as peer-debriefing and member-checking. The self-reflection focused on admitting plurality of data interpretation, noting surprising revelations, careful self-reflection and examination of data interpretations and their comparison with

dominating interpretations, openness to other interpretations, attention to issues of authority and discursive formations (Alvesson & Sköldberg, 2009).

Similarly, the authors of QCA theory advocate for applying the criteria of reliability and validity for coding frame. They also propagate using the criteria for trustworthiness at all stages of analysis process. Building on this, the research included measures for securing reliability and validity of coding frame as well as measures for trustworthiness of data analysis and reporting as proposed by Elo and colleagues (Elo et al., 2014; Schreier, 2012).

For attaining reliability of coding frame, the author wrote memos about coding process and applied a re-test criteria, when after initial round of coding for the purpose of intra-coder agreement the coding process was repeated to check the credibility and consistency of coding frame (Schreier, 2012). For coding frame validity 'face validity' is a primal concern, i.e. the instrument should give the impression of measuring the intended things (Schreier, 2012). In this respect it was checked if categories developed reflect the meaning of materials and if distribution of coded segments among subcategories is balanced.

From the viewpoint of trustworthiness of data analysis, the researcher applied a constant comparison technique in terms of comprehensive data analysis and attention to negative cases. This was meant for careful analysis and interpretation of patterns which fell out of general track and trying to grasp explanatory causes or factors (Gibbs, 2007). The researcher was involved in regular peer-debriefing during which the category development, data coding and interpretation processes were discussed and, additionally, external member check was performed after completing analysis.

To ensure trustworthiness of reporting of research results the author reported the analysis process and its results in systematic and understandable manner, used quotations to represent participants experiences and opinions and to illustrate how results and data connect. Trustworthiness of reporting relates to judgements of readers about transferability of results (Elo et al., 2014, p. 6) and, to address it, recommendations to support transfer of the results to other settings have been provided in the concluding section.

2.4.5. Research ethics

The author has gained an approval for research and interview guide from the ethical committee of Verona university (protocol Verbale della Riunione del 27/11/2019 del Comitato Etico del Dipartimento di Scienze Umane Dell'Università degli Studi di Verona). The consent of participation in research (Modulo per la firma del consenso / Consent signing form) permitted

the researcher to perform an interview, to record and transcribe it and to use summary interview content or direct quotations from the interview in academic publications in anonymized way.

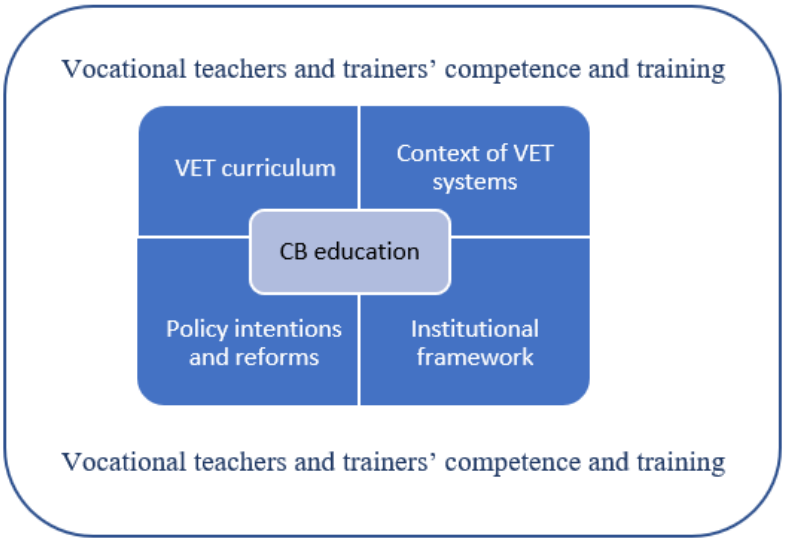
During interviews the following research ethics principles were kept: respect for research participants, maintaining confidentiality and anonymity, beneficence of participants (Brinkmann & Kvale, 2015; Seidman, 2006; Žydžiūnaitė & Sabaliauskas, 2017). Participation in interviews was voluntary, participants have received information about the goals of the research before the interview and at the beginning of interview researcher repeated this information, interviews were recorded only with permission of participants. The researcher followed the principle of respect for human dignity of research participants and demonstrated respect for their opinions. The relationship with participants was consciously observed so that to balance an empathic, sensitive, fair and professional attitude in interview situation and in relationship with participants. The researcher has guaranteed confidentiality and privacy of participants. In interview transcripts and related academic publications there are no references or other indications to the names and positions of interviewees, the author has pursued that in the thesis and academic publications it would not be possible to recognize the authors of statements and opinions. Interview records have been protected from access by other persons.

CHAPTER III. COMPARATIVE ANALYSIS OF COMPETENCE-BASED VET CURRICULUM REFORMS AND VOCATIONAL TEACHERS AND TRAINERS' TRAINING INSTITUTIONAL FRAMEWORK IN LITHUANIA AND IN ITALY

Seeking to better understand the context affecting VET curriculum enactment an analysis of related curriculum reforms and institutional framework was performed. To answer the research question 'How does CB education change the VET processes and systems in Italy and Lithuania?' and to guide the analysis and comparison the following units of comparison (Figure 7) were distinguished: context of VET systems, institutional framework, policy intentions and reforms, VET curriculum and vocational teachers and trainers' competence and training. Units of comparison and their criteria have been defined in the Table 2.

Figure 7

Framework of units of comparison



CB education models are characterized by competence construct at conceptual level, its textual representation in the form of qualification standards and competence profiles, curriculum design, learning and instruction, and competence assessment (elaborated in Chapter I). At the same time, the thesis positions CB education in the context of overall skill formation system, shaped by actors and skill formation processes at macro, meso and micro levels. Thus, the comparative analysis went beyond curricular level to include analysis of contextual factors, institutional framework and policies having an impact on curricular models and explaining them. Finally, teachers and trainers are the key factor of curriculum enactment, thus, it was

important to explore changes in their didactic approaches generated by new curricular models, their challenges and emerging competence needs and how teacher training system responds to these changes and challenges.

The sections below are structured referring to units of comparison.

3.1. CB VET curriculum reforms and vocational teachers' training institutional framework in Lithuania

3.1.1. Context of VET system

Criteria of unit of comparison: - Labor market, economic, industrial relations and other factors having impact on VET and CB education processes - Social and demographic factors having impact on VET and CB education processes

Lithuanian VET system has developed in the context of transition from post-communist country to an EU member state and from centrally-planned to a market economy with accompanying demographic, social and economic transformations (Bunning, 2006; ETF, 2002; Laužackas & Danilevičius, 2006; Norkus, 2006). The abandoning of Soviet model of economy and education meant a shift to neoliberal reforms combined with orientation to 'statist welfarism' with a leading role of state in skill formation policy (Tūtlys, Winterton, et al., 2022). The period was followed by labor market restructuring and increased employment in private sector, fluctuations in employment and unemployment due to economic crises in 1999 and in 2009, decreasing demand for low-skilled employees, shifted preferences of students for higher education as compared to VET and subsequent competition of higher education and VET graduates for the same jobs (Strata, 2021; Tūtlys, Gedvilienė, et al., 2022).

One of the most worrying trends is a decrease of population, as the country lost one fourth of its population mainly due to a high level of emigration and of youth in particular and a decreasing birth rate (Strata, 2021). The emigration was directly influenced by socio-economic challenges such as unemployment, skills mismatch and low level of earnings. Although recently emigration has slowed down and return migration and immigration have risen due to Brexit and COVID-19 pandemic, the continuation of this trend is yet in doubt. As a result, two times faster population aging compared to average EU tempo and its implications for skill formation policy is a massive concern in the light of significant economic and technological transformations (KPMPC, 2019c; Strata, 2021).

Lithuanian economy was rather resilient to two economic crisis of 1999 and 2008, however these crises resulted in the increase of youth unemployment. Youth unemployment started to rise again in 2019 and in 2020 reached 13.4 %, a rate similar to situation in 2014 (14.7%). Another concern is a large poverty rate which is one of the highest in EU (26.3% in 2019)[3]. Lithuania's labor productivity, despite its growth, remains below EU average and OECD stresses low demand for and low use of skills in companies (OECD, 2021). One of the main factors behind such situation are low level of skills of population and, in particular, the level of digital and problem-solving skills as evidenced by OECD's PIAAC survey and inadequacy of skills to the requirements of jobs (OECD, 2021; Strata, 2021). Other related factors are the composition of companies and their working practices: majority of Lithuanian companies have less than nine employees, they are less eager or have fewer opportunities to adopt high-performance workplace practices and to digitalize workplaces (OECD, 2021). Consequently, a part of workforce has qualifications or skills exceeding the requirement of their jobs. In addition, OECD (2021) and Strata (2021) stress regional differences in economic development and population's skills with the largest towns being in a more advanced position.

In the Skills strategy for Lithuania prepared by OECD (OECD, 2021) the performance of education system is assessed reservedly by exposing substantial level of skills mismatch and the average level of skills of current 15 years old students and of working-age population, what raises concern about responsiveness of education system. Lithuanian population apparently prefers academic education as evidenced by one of the highest shares of learners in higher education in EU. Although policy documents have set a target of reaching that 50% of learners at upper secondary education would be enrolled in VET programmes by 2020, this target is unlikely to be reached in near future. A share of students in VET fluctuates around 27%. OECD (2021) questions if VET can contribute to sectors of strategic importance, such as ICT and environmental protection, since it focuses on traditional sectors. Thus, no surprise that VET is dominated by male students and is identified as an educational route for academically weak and economically or socially disadvantaged students.

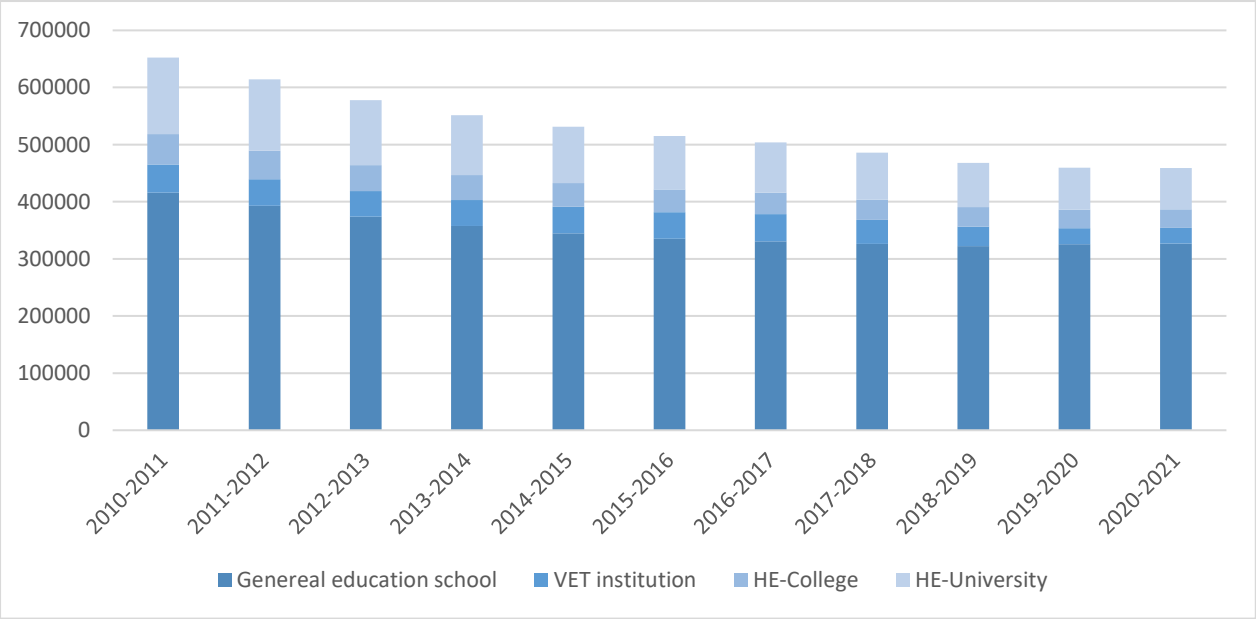
The statistical information shows a worrying negative trend of participation in VET. The number of VET students from 2010 to 2019 has decreased from 49 thous. to 27 thous. (Figure 8). Compared to learners in other education sectors, decrease of VET learners during the decade was one the largest. Although, the most recent data about VET students shows that the speed of decrease has slowed down, it is not certain how VET sector will evolve.

[3] https://ec.europa.eu/eurostat/databrowser/view/t2020_50/default/table?lang=en

The employment success of VET graduates is similar to the EU or OECD countries average levels, although less than that of higher education graduates (Cedefop, 2020a; OECD 2021; Strata, 2020, 2021; Valstybės kontrolė, 2020). As noted in many policy analysis, drop out from VET programmes is much higher compared to general education programmes due to economic, social and personal reasons (Cedefop, 2020a; Daukilas et al., 2016; OECD, 2021; Strata, 2020, 2021; Valstybės kontrolė, 2020).

Figure 8

Students in different types of educational institutions in Lithuania



Source: Statistics Lithuania https://osp.stat.gov.lt/statistiniu-rodikliu-analize?hash=60600ac6-af51-4648-afa2-217215222c65#/

3.1.2. Institutional framework

Criteria of unit of comparison: - Division of responsibilities for the design and implementation of curriculum - Stakeholder engagement and social dialogue

Lithuanian skill formation and VET system is characterized by the involvement of multiple ministries and social partner organizations (see Table 5). The contribution of social partners to VET policy making and implementation was always declared as a priority and stressed in policy documents, legal acts and VET development programmes. Social partners role was expanded in new editions of Law on VET in 2007 and in 2017. Transformations of dedicated

national and sectoral social partnership structures for VET policy, such as VET council, expert lead bodies, central and sectoral professional committees, have undergone through several iterations and currently social dialogue in skill formation is enacted through sectoral professional committees which advice Qualifications and VET Development Centre (KPMPC) on the issues of qualifications system and endorse qualification standards. Social partner organizations and individual employers also contribute directly to standards and curriculum design, VET programmes implementation and competencies assessment (KPMPC, 2019c). The latter area for a long time was regarded as a sole responsibility of social partner organizations, however in recent years the dividing line between VET institutions as VET providers and social partners as assessors of VET outcomes has blurred. The role of trade unions in VET policy formation and implementation is minor and the absence of their strong input to overall skill formation policies at macro, meso and micro level impedes holistic approach to skill formation (Tūtlys, Gedvilienė, et al., 2022; Tūtlys & Kaminskienė, 2008).

OECD in the Lithuanian Skills Strategy (OECD, 2021) concludes that skills policy lacks a holistic vision and inter-institutional coordination and that actors within this system have insufficient capacities to influence policy making. This signals that sustainable engagement of social partners in decision making regarding VET and qualifications policy has not yet been achieved despite the efforts of three decades to activate them by delegating more diverse functions (Andriušaitienė, 2018; ETF, 2002; Tūtlys & Kaminskienė, 2008). Low capacities of social partners to contribute to skill formation policies are cited to be among the reasons for the dominating role of the State in these policies.

Table 5

Actors involved in skill formation and governance of VET in Lithuania

Institution	Roles and responsibilities
Ministry of Education, Science and Sports	National level decision-making regarding VET provision, connection of policies and investment, licensing of VET institutions and VET providers Definition of the requirements for VET programmes and qualifications
Ministry of Economy and Innovations	National level decision-making regarding human resources policy, contribution to VET policy making
Ministry of Social Security and Labor	National level decision making regarding labor market, employment support and youth policies
Other ministries	Contribution to decision-making regarding human resources policy in their area, contribution to qualification standards design and proposals regarding curriculum

Government Strategic Analysis Center (STRATA)	Monitoring of human resources and VET, recommendations regarding qualifications demand and specialists training
Qualifications and Vocational Education and Training Development Centre (KPMPC)	Coordination of qualification standards design and VET curriculum design, approval of standards upon their endorsement by sectoral professional committees Organization of qualifications assessment Participation in VET quality evaluation
National Agency for Education	Coordination of general education curriculum and key competences curriculum design Participation in VET quality evaluation
Regional councils and regional development boards	Proposals regarding regional VET supply Contribution to the governance of individual VET institutions
Municipalities	Contribution to the establishment of network of VET providers Contribution to the governance of individual VET institutions
Social partners, employers	Participation in working groups regarding VET policy Participation in sectoral professional committees Initiation of qualification standards Contribution to qualification standards and VET curriculum design Contribution to VET planning and implementation Contribution to the assessment of VET learners competences Contribution to the governance of individual VET institutions
VET institutions (the main activity is VET) VET providers (the main activity is other than VET)	Planning and delivery of VET programmes (EQF 2-4) for youth and adults Award of qualifications

Source: based on the Law on VET (Lithuanian Parliament, 1997)

Lithuanian VET system represents a strong case of school-based VET system and despite all political efforts to expand apprenticeship, there is no significant progress due to low interest of VET institutions and companies, lack of transparent guidelines, resources and small incentives for companies (Valstybės kontrolė, 2020). As already mentioned, most companies in the country are small and don't expose particular interest in contributing to students training. This lack of interest can be explained by the absence of tradition of contributing to VET traced back to communist regime where VET was associated with planned economy and large state-owned companies (Tūtlys, Winterton, et al., 2022).

Next, it is important to acknowledge the recurring narrative of making VET institutions more autonomous. This narrative is linked to the transformation of VET institutions' status into self-governing institutions and involvement of social partner organizations, regional or local

employers into their governance (Laužackas & Danilevičius, 2006; OECD, 2021). However, autonomy of VET institutions in curriculum making process is restricted. After restoration of independence curriculum making was decentralized, but in 2007 the idea of centralizing curriculum development processes was raised when planning EU support for VET and was gradually implemented.

3.1.3. Policy intentions and reforms

Criteria of unit of comparison: - Skill formation - Qualification system - CB education related reforms

VET in Lithuania is positioned to serve economic and social dimensions, the essence of the last being to 'solve problems of social exclusion, by helping to improve living conditions and smoothly integrate into labor market' (KPMPC, 2019c; Strata, 2018, 2020). VET primarily is considered to be a route for persons having learning problems or for persons from disadvantaged families to acquire both, academic and vocational qualification. The majority of VET learners together with professional qualification complete upper-secondary general education enabling them to study in higher education, although only few do that and the quality and outcomes of general education in VET institutions are criticized (OECD, 2021; Strata, 2018).

It is no surprise that due to low number of participants and failure to increase a share of learners in VET at upper secondary education level, Lithuanian VET policy analysis indicate a double goal for VET future development. On the one hand, it is associated with increasing attractiveness and prestige of the system and attracting more learners, on the other hand, the need to develop the system that would 'respond to the economic development of the state' is acknowledged (Cedefop, 2020a; OECD, 2021; Strata, 2020).

The path of Lithuanian VET system development was clearly influenced by the rush to transform economy to market economy and EU agenda in education and skill formation. The former reason created a favorable context for competence movement to emerge in VET since CB standards were seen as a route for bridging VET and the needs of new economy (Tūtlys & Arna, 2017). Secondly, from restoration of independence in 1990 a Western Europe orientation was driving the VET policy reform with segmented policy borrowing and experience transfer exercises. As a result, to some extent contradicting Anglo-Saxon and German influences are observed in approaches to qualifications and curricula (Tūtlys & Spöttl, 2017). EU pre-

accession support and PHARE programme were used for CB VET standards and curriculum development, teacher training and infrastructure modernization projects (Laužackas & Danilevičius, 2006). After accession to EU, EU support was targeted at creating national qualification system and funding other VET policy initiatives in line with EU Council recommendations and, more recently, developing competencies assessment and validation system. A new system of competencies assessment was launched in autumn 2021 by introducing centrally coordinated online single theoretical test and a practical exam at accredited competence assessment venues.

Qualifications system is an overarching concept encompassing the processes of qualifications formation and management, assessment of competencies and award of qualifications. So far, three major qualification system formation projects were implemented during which methodologies, standards, VET curricula were developed and training and dissemination activities were organized leading to the final institutionalization of CB education. The core of qualification system is an eight-level national qualifications framework (NQF), which was approved by the Government in 2010 and referenced to European qualifications framework in 2012. Introduction of NQF had certain hopes, such as better coordination of education system and labor market and society needs, improved cooperation of stakeholders, more flexible and better quality assured education system, better coherence among qualifications, enhancement of competencies certification and even improvement of status and attractiveness of VET (Tūtlys & Spūdytė, 2011).

Consequently, competence approach has been firmly introduced in qualifications[4] and VET curriculum and now, when modules of VET programmes are directly associated with concrete competencies, curriculum modularization only strengthened it. In addition, the national reform of general education curriculum revived the key competences discourse in general education and it is likely to penetrate into VET sector as well.

It is also important to note a preceding academic discussion regarding terminology, internal components and dimensions of competence. The Lithuanian terminology variants for competence-competencies were analyzed by Pukelis (2009), Pukelis and Smetona (2012), Laužackas et al. (2009), Jovaiša et al. (2008), Jucevičienė and Lepaitė (2000). Pukelis saw the relationship as a ‘whole-part’ relation, and associated competencies with textual constructions in standards (Pukelis, 2009, p. 20) and not as a characteristic of person (it was proposed to refer

[4] Qualification is defined as the entirety of a person’s competences or professional experience and competences necessary for a certain activity, recognised in accordance with the procedure laid down by legal acts of the Republic of Lithuania.

the latter ‘a competence’ – *kompetentingumas*). Pukelis and Smetona (2012) proposed to ‘stop using the term ‘competency’ in scientific English texts’ and ‘*kompetencija’* in Lithuanian texts, since, according to them, ‘competency’ (*kompetencija*) as a term does not signify a phenomenon in reality and is a ‘phantom term’ (Pukelis & Smetona, 2012, p. 66). They defined ‘competence’ as ‘practically tested ability to use acquired knowledge, skills, values or attitudes integrally and purposefully in a variety of work or study situations, as well as to use it for personal and professional development’ and argued that the term ‘competency’ should be replaced with ‘skill’ (*mokėjimas*) - ‘a component of competence that shows one’s ability to perform a particular professional action’. Similar approach was advocated by Jovaiša et al. (2008) proposing to use competence *(kompetentingumas)* when referring to practical actual activity and competency – referring to (vocational) training (Jovaiša et al., 2008). Jucevičienė and Lepaitė (2000), based on Bowden (1997), suggested a four-level hierarchy incorporating competencies and a holistic competence (without using a term ‘*kompetentingumas’)* (Jucevičienė & Lepaitė, 2000). In this hierarchy lower-level competencies are associated with automatic work performance and holistic competence is understood as the ability to act in new situations, to choose relevant tools and integrate disciplinary and vocational knowledge. At practice level the term ‘*kompetentingumas’* did not take root and ‘*kompetencija’* continues to be widely used in policy, qualification standards and curriculum documents. What regards the translation of the term ‘*kompetencija’* into English, there is no established translation tradition and ‘competency’ and ‘competence’ tend to be used interchangeably. In this thesis a decision was taken to translate a word ‘*kompetencija’* as ‘competence’ underlining the intention of developing a broader (work-process oriented) competence and ‘competency’ in a more narrow, specific competence element, sense.

Based on the official definition, the competence can be deconstructed as the ‘ability to act’ on the basis of ‘entirety of knowledge, skills (*įgūdžiai ir mokėjimai)* and values’ *(vertybinės nuostatos)*. This is the official definition, nevertheless, Lithuanian bank of terms includes other definitions of the competence when it is treated as ‘the ability to apply knowledge and skills’ (6 of 43), ‘the (context) cognition and performance’ (5 of 43), ‘the entirety of knowledge, skills and attitudes’ (3 of 43).

What regards components of internal structure of competence (knowledge, skills and values / attitudes), the competence terminology includes three similar terms falling under category of ‘skills’, which can also be translated as ‘ability’ and ‘capacity’ – *įgūdis* (automatic skill), *mokėjimas* (skill) and *gebėjimas* (ability). This creates terminological and practical confusion. Pukelis and Smetona (2012, p. 69) proposed a hierarchy in which *įgūdis (*automatic

skill*)* is the highest level of skill hierarchy, whereas *mokėjimas (*skill) is the ability which is developed (i.e. which becomes a skill) through learning and the *gebėjimas* (ability) is an aptitude developed through socialization. However, in diverse documents these terms are used inconsistently and are often mixed.

In terms of dimensions of competence, the classification of functional (*funkcinės*), cognitive (*pažintinės*) and general *(bendrosios)* competences was proposed when developing national qualification framework, and their descriptions for each qualification level were elaborated (Jovaiša et al., 2008; Laužackas et al., 2009). When analyzing qualification standards, it is obvious that the main focus is put on functional competencies needed to handle work processes and the notion of cognitive and general competencies is implicit. In national curriculum cognitive and general competencies to some extent are represented at learning outcomes level.

To summarize the analysis above, we can notice elements of holistic approach to competence, when competence is understood as a broad 'ability' to act and master work processes based on mobilization of all resources (knowledge, skills and attitudes). The academic discussion about the concept and internal structure of competence (competency) has calmed down signaling that the official definition of competence is acceptable. However, certain conceptual and terminological / semantic dilemmas and contradictions remain unsolved.

When it comes to the operationalization of CB education principle, the country was moving towards it gradually, first, by starting to develop VET standards from 1997 and, based on them, VET curriculum, then by introducing qualifications standards and, finally, by turning to full-scale modularization of VET curriculum (KPMPC, 2019c). VET standards had only a partial impact for VET curriculum design and implementation (Laužackas & Danilevičius, 2006; Tūtlys & Spöttl, 2017) since having autonomy in curriculum design teachers dominated in curriculum preparation and schools had freedom to select how to relate subjects with competence frameworks. Thus, at that time tuning of school curricula to CB approach did not result in in-depth change of the subject-based didactics and teaching practices. Separation remained between theoretical subject-based teaching and practical training in workshops and challenged application of acquired vocational knowledge in practice as well as holistic assessment of competencies.

The launching of qualification standards and modularization of VET curriculum was a turning point in curriculum reform. First of all, the change of methodology of qualifications design by replacing narrow task-based functional analysis with broad work processes permitted

definition of 'holistic competences', where '*competences are directly linked to change at the place of work and do not focus on isolated performances or actions, but rather encompass all dimensions of work-processes*' (Tūtlys & Spöttl, 2017, p. 54). Using this methodological approach qualifications and competence profiles 'encode' prerequisites for openness to changing work contexts, technological advancement and 'mastering' of work processes. For reaching the mission of standards and ensuring their effect for learning and teaching practice a certain methodological and institutional preconditions are necessary, such as committed involvement of experts of work processes and other stakeholders, methodological capacity of experts involved, access to reliable labor market information, timely update of standards and curriculum and teachers readiness to work with new curriculum, correspondence of training to the requirements of work processes and availability of workplace learning (Andriušaitienė, 2018; Tūtlys & Spöttl, 2017). These preconditions were not completely fulfilled when implementing VET standards (Laužackas & Danilevičius, 2006; Tūtlys & Spöttl, 2017).

What regards CB curriculum modularization, this curricular principle was legitimated in the Law on VET (Lithuanian Parliament, 1997) and in the Programme for development of practical VET resources (Ministry of Education and Science, 2007) - the key document which planned the VET system development projects until 2015 supported by EU funds. This programme precisely represents the national discourse of CB curriculum in VET and its modularization (see Box 2 below). It underlined the goal of further alignment of programmes with competencies from standards and curriculum modularization. The latter was believed to make VET more flexible, attractive and accessible. In the programme, country's experience in CB curriculum and the system of VET standards were named as strengths of the system, and the differences among the programmes caused by decentralized curriculum design were regarded to be one of the weaknesses.

Box 2

Discourse of CB curriculum and modularization

Programme for development of practical VET resources (2007) *The current vocational training system is not flexible enough; a student of a VET institution must complete the entire training program to receive a document confirming the acquired competence. VET programmes are based on the subject principle. To increase the attractiveness of the workforce, it is necessary to move to an education system based on flexible programs, and a modular VET system must be developed to ensure higher quality and accessibility of VET services by improving participation in lifelong learning.* *Although the PHARE VET reform program focused on competence-based VET programs and the development of learning tools, no effective mechanisms have been put in place to*

provide the learning process with learning tools. An attempt by the PHARE program to solve this problem by schools has not yielded the expected results. In developing curricula and teaching aids, schools have begun to focus too much on their human and material resources, paying too little attention to the requirements of the VET standards and market needs. Such decentralization of the development of programmes and teaching / learning tools has made it difficult to properly use the achievements of information and communication technologies in the teaching / learning process and to respond promptly to changes in the economy. <…> Therefore, in order to develop the VET system, it is necessary to improve the curricula and tools.

The EU's call for all Member States to develop national qualifications systems and to develop the recognition of learning credits and non-formal and informal learning in vocational training also encourages the modular approach to curriculum transformation.

Law on VET (2007)
The National Qualifications Framework is a system of qualification levels established in the Republic of Lithuania based on the competencies required for a person's activities.

VET programme is a variously formalized educational programme, the content, ways of implementation and methods of which aim to provide the intended competencies.

Qualifications are based on competencies. The competencies required to obtain a qualification are set by a qualification standard.

Procedure for development and legitimation of VET programmes (2010)
The modular programme is developed based on competencies, following the relevant VET or sectoral qualification standard.

After rather long preparatory phase a systemic introduction of modularized curriculum started in 2015. Importantly, modularization of curriculum served as 'window of opportunities' not only to unify initial VET programmes by developing national curricula, but also to bridge initial and continuing training subsystems which previously were governed by different ministries and offered curriculum which at some cases was hardly comparable. As stressed by Cedefop (Cedefop, 2015a), employers also welcomed the idea of modularization and regarded it as a moment of tuning programmes with their realities and needs. The efforts towards modularization of curriculum are acknowledged by OECD (2021) and the idea of modules-based curriculum construction is seen as opportunity for adults learning.

The principles of Lithuanian modular curriculum correspond to the typical characteristics of modular training: modules have a clear start and ending, they are outcomes / competence based, certificates are issued at the end of modules (Pilz et al., 2018). However, contrary to radical modularization model, in Lithuanian model programmes must be implemented only by licensed VET institutions. The Lithuanian concept of modular VET (KPMPC, 2012) identifies flexibility as one of the principles of modular training. In the

Concept, flexibility is associated with more flexible adaptation of training to the needs of the economy and persons seeking qualifications, increased ability of a person to independently construct his / her qualification by acquiring and improving it, shortening the learning time. However, in practice the principle of flexibility in terms of broad choice of modules and flexible construction of programmes was not realized. Programmes' structure is predefined and some level of flexibility is achieved through free-choice modules.

The operational programme cited above confirms a top-down support to CB education and modularization. At the same time, numerous scholars contributed to conceptual and methodological development and academic discussions about the future vision of curriculum. Thus, there is no surprise that the idea was rather well accepted with concerns raised about practical implementation issues. A national institution, Qualifications and VET Development Centre (KPMPC), coordinated VET curriculum reform, mobilized researchers, practitioners and social partners in developing conceptual and methodological documents and curriculum (KPMPC, 2012, 2019a). Transition to sectoral qualification standards was constrained by rigid legal basis and institutional barriers complicating timely update of curricula and their coordination of with standards (Andriušaitienė, 2018; KPMPC, 2019c). Additionally, introduction of qualifications and curriculum based on 'holistic', 'work-process oriented competences' demands alterations in teachers work and attitudes *'in terms of didactics of learning, the assessment of competence and the organization and the equipment of learning environments. It is self-evident that the cross-sectoral implementation of these changes cannot be finalized within just a few years'* (Tūtlys & Spöttl, 2017, p. 63). It is presumed that the transition may last 'around a decade' (ibid).

3.1.4. VET curriculum

Criteria of unit of comparison:

- Conception of VET curriculum and its ideology
- Manifestation of competence construct
- Curriculum planning, development, implementation system
- Intended and enacted curriculum manifestations*:
    - Outcome oriented vs input oriented: representation of competence and learning outcomes
    - Flexibility of curriculum for teacher: prescriptiveness vs open curriculum
    - Flexibility of curriculum for learner: demand driven vs supply driven
    - Learner-centered curriculum vs teacher centered curriculum
    - Powerful knowledge vs contextualized vocational knowledge
    - Occupational competence vs key competence
    - School-work boundary crossing situations

*Adapted from Frommberger & Krichewsky, 2012

Analysis of curriculum policy, governing and methodological documents revealed that VET curriculum in Lithuania is dominated by social and economic efficiency ideology (Adamson & Morris, 2007; Schiro, 2012). The perceived mission of VET is to primarily equip learners with 'functional' competencies in accordance with sectoral qualification standards, however, taught curriculum should also include key competences as understood in the EU Council recommendation on key competences for lifelong learning. At the same time, general education disciplines are part of curricula at EQF level 4 which are also being reformed on the basis of key competences. In 2019 a framework of key competences for general education curriculum was revised by prioritizing communication, cultural, creativity, cognitive, civic and social, emotional and healthy lifestyle competences. These competences should be developed throughout general education curriculum by general education teachers.

Thus, we can see that the general mission of VET is the contribution to economic development of the country. It is admitted that VET has also a social dimension, the essence of which is to solve the problems of social exclusion, i.e., improve the living conditions of persons from disadvantaged groups by helping them to acquire skills and to integrate smoothly into the labor market (Strata, 2018). The discourse of VET for personal development manifests through notions of key competences development and providing opportunities to VET learners to receive matura certificate that allows continuation of learning at a higher level. Yet, personal development axis in VET programmes is more of a tacit nature.

In Skills strategy (OECD, 2021) the concept of 'skills for work and for life' is encoded, however it is too early to predict what implications Skills strategy will have for VET curriculum: *'Skills for work and life' refers to the competencies (knowledge, skills, attitudes and values) that today's students need to thrive in and shape the world, both today and in the future'*. These skills are explained to include *'young people's cognitive skills (e.g. literacy and problem solving), social and emotional skills (e.g. perseverance and teamwork), and technical skills (e.g. in mechatronics and life sciences) <…>'.*

The current representations of competencies in the standards and in VET curricula are based on broad analysis of work processes, which '*changes the approach to competence. It leads to a more holistic approach of defining competence by analyzing requirements of core work tasks and considering wide range of technological, organizational and other requirements of work-processes'* (Tūtlys & Spöttl, 2017, p. 58). Each qualification profile in the standard is described by units of qualification, competencies within each unit and specifications of boundary of competencies (*kompetencijų ribos).* Competence representation in the standards and in curriculum is expressed in performance / accomplishment of work

process, conceived in a broader sense than a specific, narrow work tasks (Tūtlys & Spöttl, 2017). Examples of technical-occupational competencies of a waiter, EQF/NQF 4: *Prepare the workplace; Prepare tableware, tools, cups, tablecloths; Serve tables; Serve meals and drinks; Perform sales accounting; Serve guests of parties and conference participants; Serve hotel guests.* Components of the competencies in terms of knowledge, skills and values are loosely described in the specification of 'boundaries of competence' (KPMPC, 2019b).

Curriculum is developed by expert groups, representing VET institutions and companies, under coordination of national authority, KPMPC (KPMPC, 2019a). Competencies from standards and information on competencies elements is 'translated' into national curriculum's learning outcomes, recommended themes for instruction and assessment criteria. The curriculum needs to correspond to sectoral qualification standard and the correspondence is rather straightforward: qualification units frame the structure of modules and modules need to deliver the competencies specified under qualification unit. Schools and teachers are invited to adjust national curricula to local and learners' needs within limits of 15%. Teachers and trainers interpret the requirements of curriculum and prepare their didactic plans which are officially approved by administration.

The modularization of curriculum allowed completing realization of CB education project, set as a target at early stages of curriculum reform. Examples of obtained intended curricula indicate outcome-based approach in planning of training. Work process, expressed through competence to handle it together with more specific competencies and learning outcomes, are the starting point for selection of knowledge and practical assignments, sequencing of theoretical and practical learning, recommending instructional themes and assessment criteria. Based on the examples of teachers intended curriculum, teachers' approaches vary: there are cases when didactic plan fully represents official curriculum and there are more free interpretations, for example by deepening or expanding recommended instructional themes or assignments or contextualizing assignments for key competences development.

The curriculum in Lithuania is rather prescriptive since, together with other curricular governing documents, it provides clear frames and sequence (in some cases) of modules, specify the length of general education subjects and vocational modules. As mentioned, teachers have opportunity to adjust vocational modules to the local or learner needs in the limits of 15%. However, it should be noted, that National audit is skeptical about openness of curriculum and in their report of VET system evaluation have expressed that '*Auditors are hesitant about the provision, that VET providers can adjust 15% of the training programme*

and after that there is no requirement to re-evaluate it. There is no convincement, that no more than 15% has been adjusted' (Valstybės kontrolė, 2020, p. 37). This signals that VET institutions autonomy and flexibility in curriculum decisions is hindered when the standards are seen as a tool to unify training (this was one of the motives for centralizing curriculum making processes).

Curriculum model can be defined as a supply driven (Frommberger & Krichewsky, 2012) with elements of demand driven curriculum, conditioned by a possibility of curriculum flexibilization / personalization and free-choice modules. The latter represent approximately one tenth of VET programmes. A similar share of flexible curriculum was foreseen in the concept of modularized VET (KPMPC, 2012). The concept promoted a flexible organization of training allowing students to plan training according to their pace and preferred sequence of modules when allowed by curriculum. However, the analysis of curriculum and its governing documents indicates that this flexibility is present only in large VET institutions due to pragmatic reasons when they are forced to change the sequence of some of the modules in order to ensure access to workshops for all students.

Guidance materials clearly point to the orientation at learner-centered instructional approach. Individualization, interdisciplinarity, the link between occupational and key competences, authenticity of learning, formative assessment of students' achievements are stressed (KPMPC, 2012, 2019a; Tūtlys et al., 2015).

In regard to knowledge element, in the case of NQF level IV programmes, where general education curriculum represents up to 35% of curriculum, learners have access to different types of knowledge: disciplinary knowledge of general education curriculum, occupationally contextualized knowledge within vocational modules and work-process knowledge from workplace learning. General education curriculum typically includes disciplines of Lithuanian language and literature, foreign language, social education (history, geography or integrated course), mathematics, science education (biology, physics, chemistry). In the case of NQF level III programmes, students access to disciplinary knowledge is limited, but the offer of these programmes is not large, and these programmes are less popular among young persons. The majority of learners choose programmes at NQF level IV, granting access to higher education.

The modularized curriculum introduced a real change in terms of knowledge position, since previously the curriculum was subject-oriented with separate theoretical subjects combining disciplinary and contextualized vocational knowledge but sometimes failing to (effectively) connect this knowledge to practical skills in practice-oriented subjects. From

methodological point of view, work process analysis permits identification of vocational knowledge by exploring requirements of the work process technologies, work organization, customer needs and societal requirements to the execution of work processes (Tūtlys & Spöttl, 2017). At the same time, Tūtlys and Arna note that *'Modularization contains certain contradictions between the strive to make the learning process more flexible and enhance learner-centered approaches on one side and the possible implications of this approach to the quality of provided knowledge and skills from the other side'* (2017, p. 384).

Legal acts imply that the largest weight in training process is put on practical training. It is interesting to observe how the regulated share of theoretical training in vocational part of curriculum in recent years has decreased: before 2019 it was 30-40% of vocational curriculum, in the period from 2019 to 2021 – 30% and from 2021 – 20%. The calculation methods and preciseness of this ratio can be speculated, nevertheless , it does say that at policy level practical training is considered to be the core of vocational training, although megatrends of digitalization, automation, innovation, by no doubt, influence VET sector and increasingly require higher order thinking skills.

Decisions about what knowledge to convey to students are made primarily by teachers. The main indication and guidance for teachers' choice of knowledge is national curriculum and sectoral qualification standards. More in-depth analysis of curricular documents evidence that choice of knowledge depends on the sector. For example, in construction and hairdressing curriculum contextualized vocational knowledge dominates, whereas in mechatronics curriculum it is possible to trace disciplinary knowledge (basics of physics, electronics).

Policy documents raise the requirements to dedicate at least 10% of curriculum for key competences development and to have an instrumental school plan for their integration into modules. This plan should determine in which modules, which key competences are developed, and a number of hours allocated. This indication has appeared in legal acts in 2017 after the transition to modular curriculum structure implied abolishment of separate subjects for key competences, such as, economics and basics of business, occupational information technologies, aesthetics, Lithuanian language culture and occupational language. Key competences in VET curriculum have a triple meaning:

- the main reference for key competences to be developed in VET programmes is EU Council recommendation on key competences. In national curricula each of the eight key competences is outlined by a list of learning outcomes;
- key competences may be integral with occupational competence;

- in the general education curriculum a list of key competences is slightly modified compared to the one defined in EC recommendation. It is expected that these key competences will be developed through general education subjects and interdisciplinary activities (KPMPC, 2016).

Additionally, tacit references for key competences development are descriptors of qualification levels of the national qualification framework. By defining level of autonomy and independence, underlying level of decision making, communication and cooperation with peers, they serve as a reference for developing standards, curriculum and competence assessment tasks.

What regards workplace learning, Lithuania represents a school-based VET system with a strong practical training part (Cedefop, 2020a; KPMPC, 2012, 2019c, 2019a) taking place both, in training institution laboratories, workshops, sectoral practical training centers and at workplace. Practical training needs to comprise 70% of the training programme and it is recommended that part of training modules would be implemented at sectoral practical training centers (N=42) established in selected schools. Training at workplace mainly is organized in the final module of curriculum, entitled 'Introduction into labor market'. The declared goal of the module is the consolidation of practical skills and preparation for the final exam. The national curriculum is very clear about the space of the module. The module is intended for shaping working skills at real workplace and achieving the following learning outcomes: to self-assess and demonstrate the acquired competences at a real workplace, to get acquainted with the specifics of future work and adapt at the real workplace, to self-assess personal prospects for integration into the labor market. These learning outcomes are more of cognitive and of transversal nature, however, the responsible vocational teachers also prepare a programme of practice with functional / vocational tasks. The module lasts 110 or 220 hours, what is radically less compared prior subject-based programmes, where the time spent at workplaces ranged 320 to 600 hours depending on programme duration. The length of workplace experience is regarded to be brief (OECD, 2021).

Legal acts contradict to the national programmes and permit that practical placement can be performed in a company, and in the absence of these opportunities - in the VET institution's vocational training base (sectoral practical training center). This way sectoral practical training center is seen as an alternative to the real workplace. Progress in apprenticeship is yet slow, however considering political targets and policy support, which manifests through targeted EU funding, it is possible to predict that VET institutions will apply this form more intensively (Cedefop, 2020a; OECD, 2021).

3.1.5. Vocational teachers' competence and training

Criteria of unit of comparison:
- Vocational teachers training system - Vocational teachers' activities changes related to CB education introduction - Vocational teachers' competence needs in relation to CB education

Teachers working in Lithuanian VET institutions fall into the broad categories of general education subject teachers and vocational teachers. In-company trainers are not considered to be a pedagogical staff (i.e. teachers) (Cedefop, 2015a). Vocational teachers must have a relevant professional qualification, at least upper secondary education and corresponding work experience of three years. In addition, vocational teachers must have a pedagogical qualification, or in its absence, they need to undergo a short course of pedagogical-psychological knowledge of 120 contact hours consisting of pedagogy, psychology and didactics modules (Klein et al., 2020). Alternatively, working vocational teachers may choose higher education studies in pedagogy (bachelor, master level or non-degree pedagogical professional studies) in universities, however only one university implements master level studies tailored for vocational teachers and entitled 'Vocational education science'. The requirements for continuing professional development (CPD) are set and participation in in-service training is mandatory. Existing system on the one hand opens up possibilities for attracting practitioners without pedagogical education, but on the other hand, due to lower teacher salaries offered in VET sector, it is difficult to attract and retain teachers and to guarantee that those working part-time would hold a necessary level of pedagogical and psychological competences (Strata, 2018).

Vocational teachers and trainers training system '*lacks maturity and sufficiency of institutional settings and infrastructure of the teachers' training and competence development*' (Klein et al., 2020, 21 p.). In the past there were efforts to institutionalize vocational teachers training system: in 2002 a conception for vocational teacher/ lecturer education and training and a professional standard for vocational teacher / lecturer were developed, vocational teachers training was organized in several universities. However, as admitted by Laužackas and Danilevičius '*vocational teacher preparation has always been one of the most problematic areas of VET*' (Laužackas & Danilevičius, 2006, p. 76). Later national level efforts were directed at supporting CPD oriented primarily at technological competencies development (Ministry of Education and Science, 2007). The efforts to create sustainable national vocational teachers CPD model did not succeed and consequently VET institutions became responsible for organization of their teachers training (Klein et al., 2020). They fund CPD, have their own

documented procedures for CPD organization consisting of training needs analysis, planning of CPD events, monitoring of CPD courses and support for new teachers, however the participation in the courses depends on teachers' initiative and proactiveness in expression of their interest (Daukilas et al., 2016; Vaitkutė, 2016). CPD is largely organized through ESF funded projects that focus on technological / subject competence and technological innovations and often include internship at workplace. The courses on pedagogical innovations and key/transversal competences are also offered, but to a lesser extent (KPMPC, 2019c). OECD (2021) admits the importance of continuing training for vocational teachers in the context of fast technological changes, digitalization, automation and related knowledge advancement, however available statistical data signal that teachers are less eager to dedicate their time for professional development (Strata, 2020).

Teachers' competence framework defined by Description of competence of the teachers' profession (2007)[5] makes a distinction between general, professional, special and cross-cultural competences. Furthermore, in 2019 a standard of qualifications in the sector of education and libraries[6] was approved becoming a second effort to standardize qualifications of vocational teachers and in-company trainers. It proposes a framework of qualifications of vocational teacher (EQF 5 and EQF 6) and trainer (EQF 5). Qualification profiles specify competence in the areas of VET curriculum planning, theoretical and practical training, competencies assessment, learners' guidance, community life and personal professional development (see Table 6 below). It is expected that with adoption of this document vocational teachers will have new systemic and holistic training opportunities for their competence development in higher education institutions (Klein et al., 2020), however, at the time of preparing the thesis the qualifications profiles have not yet been realized in practice.

Table 6

Vocational teacher qualification in Lithuania (level LTQF 6)

Unit of qualification	Competencies
1. VET curriculum and VET process planning	1.1. Identify VET needs 1.2. Evaluate technological and organizational changes in work processes in order to update VET curriculum 1.3. Plan and document VET curriculum and process

[5] https://www.e-tar.lt/portal/lt/legalAct/TAR.CEA71C4AC289
[6] https://www.e-tar.lt/portal/lt/legalAct/c7161630ad1611e98451fa7b5933515d

2. Theoretical and practical VET	2.1. Assess the student's readiness for learning 2.2. Create learning environments 2.3. Convey curriculum 2.4. Individualize VET
3. Assessment of students' learning outcomes and progress	3.1. Prepare assignments for the assessment of students' acquired competencies 3.2. Carry out an assessment of students' competencies 3.3. Analyze students' learning outcomes and progress 3.4. Assess competencies acquired through non-formal or informal learning and / or professional activities
4. Vocational information and counselling	4.1. Inform and advise general education students, teachers and stakeholders regarding the acquisition of qualifications 4.2. Advise students regarding employment and professional career opportunities
5. Continuing professional development	5.1. Develop a personal professional development plan 5.2. Update own special (technological) knowledge, master the latest technologies in the professional field
6. Acting for the school community	6.1. Prepare and participate in national and international projects 6.2. Organize professional activities and other events

Source: Qualification standard of education sector and libraries (2019)

Reflecting on competence areas defined in the standard and their manifestation in teachers activities, a survey of vocational teachers (Tacconi et al., 2020) has shown that vocational teachers do not seem to identify themselves with activities which fall out of the scope of direct teaching processes, signaling that vocational teachers in Lithuania have a rather instrumental perception of their functions. Distinction of professional development area and related competencies in qualification profile is supported by Daukilas and colleagues (2016) who underline that teachers personality development and professional identity formation should be at the core of CPD. They claim that these are the key factors influencing direct pedagogical activities (p. 247). Inclusion of this area into the qualification profile seems to be in line with observations from the survey about the prevalence of individual informal self-learning in continuing professional development with limited offer of in-service training opportunities (Daukilas et al. 2016; Tacconi et al., 2020).

Presently available master level programme for vocational teachers includes a set of themes on CB education planning and implementation. Students are familiarized with VET system concepts: occupation, competence, qualification, structure of competence, professional knowledge, abilities (skills), with methodological framework for design of competence /

learning-outcomes based curriculum and its critique, methodological issues and solutions for VET didactics and assessment of learning outcomes and competencies, methodological characteristics of work-based learning, methodological issues of vocational training processes posed by changes in the world of work (descriptor of the study programme 'Vocational education science' of Vytautas Magnus University).

It must be admitted that a search for documents that would analyze the impact of CB education reforms for teachers work, in particular in the context of modularized curriculum, did not yield many results. The majority of documents focus on early stage of the reform or refer to theoretical assumptions with limited empirical basis (Daukilas et al., 2016; Jocienė, 2014; Laužackas, 2000, 2005; Navikienė & Tūtlys, 2009). Documents, discussing transition to CB approach, point to the need for systemic and holistic teachers training framed on the one side by academically oriented education to develop pedagogical, psychological and didactic competencies and keeping occupational competence up-to-date on the other side (Tacconi et al., 2020).

Researchers express reserved evaluations regarding vocational teachers understanding of the essence of the shift to CB education paradigm (Tūtlys &Arna, 2017). Understanding of training processes seems to be over-standardized and lacks depth, furthermore, training and assessment innovations and their implications are not fully taken into account (Daukilas et al., 2016; Gedvilienė et al., 2010). The curriculum modularization was expected 'to significantly change the work tasks and responsibilities of the teachers', to provide more opportunities for self-realization and self-development, to enable their active contribution to learners' learning outcomes and formation of personality and professional identity, thus making the work of teachers more interesting and meaningful (Daukilas et al., 2016; Jociene, 2014; Tacconi et al., 2020). However, the observations indicate that the reform has encountered certain challenges. The following barriers of teaching paradigm change have been noticed: lack of transparent and clear regulations, lack of relevant learning materials and training events, limited access to training resources needed for development of new competencies, challenges in accessing workplace learning, low pace of introduction of apprenticeship and resistance of teachers for curriculum change (Daukilas et al., 2016; Gedvilienė et al., 2010; Tacconi et al., 2020; Tūtlys & Spöttl, 2017).

Compared to the past, approach to curriculum planning has significantly changed. In the past VET institutions had a freedom of planning their content based on VET standards, resulting in diversity of training content among schools (Ministry of Education and Science, 2007), whereas a present model of curriculum provides frames for training with a possibility

to adjust national training programme or its module to labor market or learners' needs by 'concretizing' recommended parts of curriculum. Having in mind the signals of insufficient 'responsiveness of VET to labor market needs' (OECD, 2021), it follows that in order to realize the goals of curriculum teachers' competence of researching local needs, communicating with enterprises and accommodating those needs into the taught curriculum is essential (Tacconi et al., 2020).

The observed or expected changes in teachers' activities include increased autonomy and responsibility in curriculum development, contribution to national sectoral qualification standards and curriculum development, constant exploration of labor market changes and their implications for curriculum, transition to learner-centered and individualized teaching approaches, individualized competencies assessment strategies, ICT-based teaching strategies, more intensive contribution to organization of work-based learning and collaboration with companies, closer connection of theory and practice, appropriate attention to key competences and provision of broad knowledge (Daukilas et al., 2016; Gedvilienė et al., 2010; Tacconi et al., 2020; Tūtlys & Spöttl, 2017).

Some insights about the teaching methods change caused by curriculum modularization can be retrieved from guidance materials for vocational teachers explaining the development of modular VET programmes (KPMPC, 2012, 2019a). It should be underlined that these documents focus on conceptual and methodological issues and to little extent address teachers' activities and competence. Referring to didactic methods, teachers are recommended to use active methods based on practical learning: formulation of problems, problem solving, case analysis, group and teamwork, project work, etc. (Jociene, 2014; KPMPC, 2012). Teachers need to possess a broad repertoire of training methods for facilitating thinking and comprehension, encouraging students' independence and focused on psychomotoric dimension (Daukilas et al., 2016; Jocienė, 2014; KPMPC, 2012).

One of the dominating themes in documents accessed is the implication of competence approach for integration of diverse components and dimensions of competence in training process and connection of theory and practice (Jocienė, 2014; KPMPC, 2012, 2019a; Navikienė & Tūtlys, 2009; Tūtlys & Aarna, 2017). It is admitted that one of the most disputable issues is integration of professional / functional and key competences (Tūtlys & Navikienė, 2009). VET institutions are challenged to elaborate their own models of integrating diverse competencies ranging from cross-cutting approaches to targeted subjects/modules (Cedefop, 2020a, p. 28).

Vocational teachers also recognize that curriculum should incorporate value-based attitudes and help to develop civic position (Daukilas et al., 2016). This means that vocational teachers need to go beyond their professional expertise area and become responsible for conveying their personal and professional values. VET institutions can promote the value-based approach in curriculum and example of one institutional approach is presented in the box below. It is believed that more individualized coaching-type approaches make training more personalized, furthermore, they aid in addressing students' personal vulnerable situations since many students lack learning motivation or underestimate themselves, sometimes due to their family social background (Daukilas et al., 2016). Jociene (2014) argues that orientation of curriculum towards concrete competencies has potential of changing learners' attitudes, such as proactiveness, autonomy, the feeling of responsibility and empowerment to 'consolidate knowledge and strengthen competence' (p. 93).

Box 3

Incorporating value-based personality development in VET curriculum: excerpt from implementation plan of VET programmes of a VET centre X

The annual plan of programmes implementation approved by the Ministry of Education, Science and Sports requires that vocational teachers should plan the development of values and key competences in thematic plans of modules. Humanity, democracy, responsibility, tolerance, dignity are the selected values to be developed. The institutional approach implies that students are encouraged to be open for dialogue with other persons, to be free to express own opinion, to maintain collegial relations, demonstrate honesty, be accountable for own learning and actions, accept and tolerate every person, be oriented at continuous improvement. In preparing thematic plan of a module or a lesson teachers plan development of values and key competences. For the development of values teachers are advised to use reflective education, discussions, problem solving and other active methods, to design a favorable learning setting as a foundation for organization of value-based learning.

What regards implications of curriculum reform for teachers' work organization some authors claim that the most effective model to connect different components of the competence is to dedicate responsibility for a teaching module to one teacher (Jociene, 2011 cited in Jociene, 2014, p. 92), who '*would be ready in time, in a creative way to connect knowledge from separate subjects and reach effective mastering of functions or works*'. According to Jociene, this model demands from a teacher a possession of extensive repertoire of training techniques, broad knowledge and practical skills, as well as appropriate capacities for organizing training. A different viewpoint is defended by proponents of teachers' cooperation

according to whom, training should benefit from coordinated teachers' cooperation (KPMPC, 2012).

What regards competence assessment, the guidance material for reformed curriculum has a clear reference to CB education paradigm shift. Teachers are advised to approach competence assessment holistically and focus on evaluation of the learner's ability 'to accomplish complicated tasks by incorporating formative and summative assessment of all internal competence components and their interconnection (Tūtlys et al., 2015):

> ' *<…> in theoretical part, assignments should provide an objective proof that learners are capable of applying knowledge and concepts <…> ' (p.20)';*
>
> '*<…> skills assessment requires an authentic, a practical, not just a mental task. For this reason, assignments of the practical part require not only theoretical assessment, identification, calculation, but also performance <…> (p.20);*
>
> *<…> When planning tasks that assess attitudes and values, it is recommended to integrate them with assignments for assessing knowledge and skills. If appropriate, learners can be asked to give evaluation of situations or activities, to make ethical / value-based decisions <…>' (p.20-21).*

3.2. CB VET curriculum reforms and vocational teachers and trainers' training institutional framework in in Italy

3.2.1. Context of VET system

Criteria of unit of comparison: - Labor market, economic, industrial relations and other factors having impact on VET and CB education processes - Social and demographic factors having impact on VET and CB education processes

Italy has been hit by the economic crisis of 2008 resulting in high unemployment levels of youth and population in general (Angotti et al., 2015; OECD, 2017). Based on Eurostat data, the unemployment rate of 15-24 years old in 2008-2016 rose from 21.2% to 37.8% and in 2020, standing at 29.8%, remained among the three largest youth unemployment rates in whole EU. NEETs (young people not in education and employment) rate is the largest among EU countries (23.3% of 15-29 year olds in 2020). Italy's economic performance and productivity of recent years are characterized as 'sluggish' and 'stagnated' (OECD, 2017) and one of the reasons behind it is a low level of skills of population as evidenced by OECD's PIAAC data and weak demand for skills from the labor market side (Angotti, 2018; Vergani & Rossini, 2017),

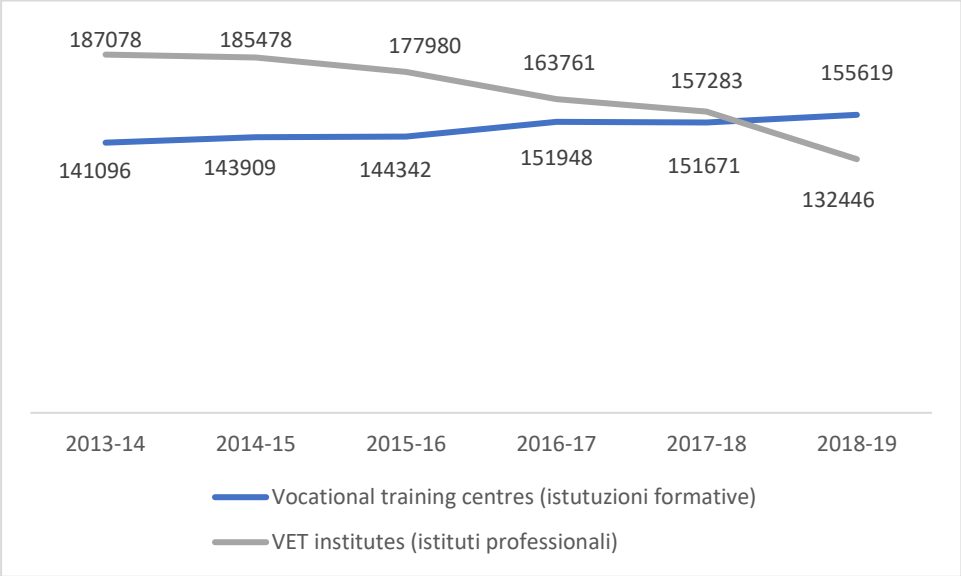
resulting in ‘pervasive’ skills mismatch (OECD, 2017). The phenomenon observed in the skills system is that, compared to OECD countries average, there are more over-skilled and under-skilled workers. OECD (2017) also notes Italy’s trap in low-skills equilibrium defined by a low level of firms’ management and workers skills, particularly in family owned and small businesses, as well as low investments into firms’ productivity and staff training as evidenced by a low share of jobs with high-performance workplace practices. With due acknowledgement of heterogeneity and diversity of firms and sectors, industrial structure of traditionally high number of small firms and low diversification of their production seems to contribute to persistent skills mismatch, low demand for skills and, consequently, lack of innovativeness (OECD, 2017). Additionally, seniority as the main factor for wage increase is noted to demotivate the career and lifelong learning efforts (OECD, 2017).

Youth employment and unemployment data evidence that youth, irrespectively of their educational level, struggle to integrate into the labor market. This is caused by low number of vacancies offered, especially in public sector which in the past generated workplaces for youth. Although universities seem to be disconnected from the labor market, employers do not value VET graduates and prefer higher level qualification (Vergani & Rossini, 2017). Differences in students and employers’ expectations in terms of skills are also noted (ibid). ‘Net brain drain’ is an outcome of such situation, when more high-skilled young persons leave the country than immigrate (OECD, 2017).

It is also important to acknowledge regional variations in terms of employment and unemployment situation, population skills levels and innovation indicators (OECD, 2017; Vergani & Rossini, 2017). The North-South divide is obvious and thus a more nationally coordinated response for improvement outcomes of education, relevant in CB education context, is advocated (OECD, 2017; Zagardo, 2020). Regional differences are also reflected in VET participation trends. VET is fairly popular comparing to general VET participation trends in EU with 53.6% of all students at upper secondary education level are enrolled in VET, compared to EU average of 48.4% (Eurostat data of 2018). The regional VET subsystem enrolls around 54% of all VET learners. A recent data (INAPP, 2021) shows a shift in VET participation when for the first time more learners chose regional VET pathway compared to a national one. Regional pathway is strongly concentrated geographically meaning that VET further matures in the Northern regions with already strong VET systems in place, whereas in Southern regions VET offer is limited or even absent (Vergani & Rossini, 2017). In relation to this, issues of low VET visibility and poor acceptance of non-academic qualifications is raised by OECD (2017).

Figure 9

VET participation trends in Italy



Source: INAPP (2021)

3.2.2. Institutional framework

Criteria of unit of comparison: - Division of responsibilities for the design and implementation of curriculum - Stakeholder engagement and social dialogue

Italian skill formation and VET system governance is characterized by the involvement of multiple actors (see Table 7 below) and '*dichotomy and parallelism*' of national and regional sub-systems of VET (Vergani & Rossini, 2017). The former situation results in the overlap of roles and responsibilities between national level and regional level actors and the latter element of institutionalization produces competition for funding and learners among providers in the national and regional VET subsystems. Regional VET subsystem is positioned as a more flexible and responsive to local labor market and local employers, at the same time, this subsystem is seen as having a poorer image and is pressed for competition with national VET subsystem for the same learners (Cedefop, 2018; Vergani & Rossini, 2017). Providers in the national VET subsystem (*istituti profesionali* - VET institutes) combine VET and general education route and award the same qualifications in subsidiarity scheme (Cedefop, 2018; Frontini & Psifidou, 2015; Ronchetti, 2017).

When analyzing VET institutional framework, it is important to acknowledge the pivotal role of regional level governance bodies and their diversities among regions (Zagardo,

2020). Regions became responsible for skills policies between 1970 and 2001 (OECD, 2017) following the expectation to better address regional and local skill needs and decrease persistent differences between south and north. Presently regional administration bodies have legislative and administrative competence in VET area and plan VET offer taking into consideration regional developmental programmes and territorial needs. They coordinate development of regional qualifications which are later included into the national repertory of regional qualifications. Angotti et al. (2015) notice remaining extensive regional variations in relation to responsiveness of regional governance bodies to local skill needs and external challenges (e.g. economic crises). Depending on whether regional governance systems are holistic and systematic and not sector-specific and whether they organically explore and forecast the business needs, regions may be classified into four groups: North-East regions with systematic response (Piemonte, Veneto, autonomous province of Trento, Lombardia and Emilia-Romagna), North-West regions with hybrid response (Liguria and Toscana), South-West regions characterized by sectoral response (Lazio, Marche and Puglia) and South-East regions with limited response.

There are different views about such a diversification and fragmentation of system. Vergani and Rossini (2017) and Angotti et al. (2015) consider that current division of competence between regional and national level is relevant for shaping and implementing VET policy and addressing skill challenges. However, OECD in Skills strategy diagnostic report (2017) points to the fragmentation of training and skills certification system between regions and very diverse advancement in and quality of policy measures in South and North and thus, in line with stakeholders opinion, calls for better coordination of regional policies and '*a whole-government approach*': '*Stakeholders mentioned that the complex institutional relations between the center and regional governments represent a major obstacle to effective policy action. Skills policies should retain a national dimension to guarantee that regions have the institutional capacity and funds to ensure similar levels of service delivery and strategic support to all citizens, educational institutions and firms to improve skills outcomes throughout the country' (OECD, 2017, p. 218).* In this context NQF, national repertory of qualifications, Atlas of work and qualifications (*Atlante del lavoro e delle qualificazioni*), competence certification system emerge as tools for harmonizing these regional differences and facilitating labor mobility.

Table 7

Actors involved in skill formation and governance of VET in Italy

Institution	Roles and responsibilities
Ministry of Education, Universities and Research (MIUR)	- Setting the minimum standards of VET provision in terms of general and occupational competences - Programming and funding VET offer in national VET subsystem in agreement or in coordination with the regions and autonomous provinces - Programming and funding higher technical education and training pathways (IFTS) in agreement with the Ministry of Labor and Social Policies (MLPS) - Sole responsibility for higher technical education (ITS)
Ministry of Labor and Social Policies (MLPS)	- Distribution of financial resources to the regions for VET provision - Definition of VET framework for IeFP (in agreement with MIUR) for apprenticeship and for public continuing training
National Agency for Active Employment Policies (ANPAL)	- Support to regions in implementation of active labor market policies
National Institute for the Analysis of Public Policies (INAPP)	- Implementation and maintenance of the national repository of qualifications, the allocation of qualifications to NQF levels, referencing of the NQF to the EQF
The Permanent conference for relationships between the State, the regions and the autonomous provinces (State-Regions conference)	- National level decision-making regarding VET provision, connection of policies and investment - Definition of the minimum education and training standards for all regions - Decisions about composition of national repository of qualification profiles (qualifications for EQF 3 and diplomas for EQF 4)
Regions and autonomous provinces	- Regional level decision making about regional IeFP, ITS, IFTS programmes (foreseeing demand, planning, and organization, accreditation of VET providers) - Programming and funding of VET programmes - Definition of additional qualifications or diplomas - Definition of additional specializations ('*indirizzi'*) to the nationally defined qualification profiles (qualifications and diplomas) - Definition and implementation of competence certification system - Design of active labor market policy measures
Social partners	- Contribution to formulation of training policies - Participation in technical working groups (*tavolo tecnico*) developing qualification profiles - Signing cooperation agreements (sectoral, local level) regarding formal training and apprenticeship - Contribution to VET programmes implementation
Regional VET Centers (*centri formativi accreditati*)	- Planning and delivery of VET programmes (EQF 3 and 4, *percorsi triennali e quadriennali di istruzione e formazione professionale)*
VET schools (*istituti professionali*)	- Planning and delivery combined VET (EQF 4) and general education programmes of 5 years duration according to subsidiarity (integrative and complementary) schemes

Source: OECD (2017), Angotti (2018)

3.2.3. Policy intentions and reforms

Criteria of unit of comparison: - Skill formation - Qualification system - CB education related reforms

According to documents analyzed, the primary mission of VET programmes in Italy is to provide alternative route for youngsters' duty to stay in compulsory education (until 16) and a right for further education until 18 years or until a vocational qualification is obtained (Angotti, 2018; Zagardo, 2020). Thus, a primary target group is those at risk of early school leaving or other vulnerable learners and, in this respect, VET centers fulfil a double mission – school-leaving preventive function and preparation of learners for employment (A. Carlini & Crispolti, 2020). VET is most concentrated on training programmes in manufacturing sector and in those needed for small enterprises (Vergani & Rossini, 2017). The VET monitoring information of INAPP (2021) reveals that a major part of learners choose training programmes in catering, well-being, mechanics, electrics and repair of motor vehicles. VET centers through their close relation to local communities and local employers are in a position to offer their learners a better chance for employment in the area of their qualification, however, due to general labor market and industrial relation context their efforts are not sufficient to secure graduates employability (OECD, 2017; Vergani & Rossini, 2017).

It is yet unclear how regional VET sector and their offer of EQF 3 and 4 qualifications can contribute to more ambitious, technological innovation and modernization related goals. Vergani and Rossini (2017) notice that the answer of VET to technological innovation agenda is VET programmes at post-secondary, in particular EQF level 5. The latter thread of thinking is also evident from the National programme for Industry 4.0 (European Commission, 2017), where measures are foreseen for school-labor market alternance ('*Alternanza Scuola Lavoro'*) without differentiation of national/ regional subsystems of VET and '*Istituti Tecnici Superiori*'. At the same time, due to numerous reforms aimed at reacting to the need of modernization and advancement of economies, VET status during the last twenty years has changed and actions were taken to integrate it as a sub-sector into education system (Vergani & Rossini, 2017). Efforts are put to formalize, standardize and institutionalize it and to strengthen the identity of VET as a broad sector on both horizontal (national and regional subsystems) and vertical dimensions (extending from level 3 qualifications to level 5 qualifications) with strong work-based elements. An influence of European objectives of the ET 2020 strategic framework, EU recommendations on EQF, EQAVET and ECVET and Youth Guarantee programme needs to

be acknowledged in these developments (Angotti, 2018; Frontini & Psifidou, 2015; Ronchetti, 2017).

These reforms are accompanied by the policy initiatives in the area of competence-based qualifications and curriculum: (1) standardization of generic competences and qualification profiles to define competences, knowledge and skills / abilities, (2) development and implementation of the national qualifications framework and its referencing to EQF, (3) development and implementation of the National repertory of education, training and professional qualifications covering qualifications from national and regional repertories, (4) development of a methodological tool Atlas of work and qualifications for publishing information about qualifications, jobs and work processes, (5) development and implementation of competence certification system and (6) strengthening of work-based learning and apprenticeship.

What regards regulatory framework and CB education, the analyzed legal acts show very complex institutional articulation of the CB curriculum reform in Italy. This articulation is characterized by the standardization and legal regulation of the core aspects of CB curriculum design at the national level and then delegation the implementation powers to the regions and regional authorities. The Agreement in the State-Regions conference on qualifications and diplomas (2019) is a milestone for further reform of training offer based on competences: the content of revised descriptions of qualifications and diplomas steers the design and review of curriculum and serves as a focal point in certification of competences (State-Regions conference, 2019). The expected future developments are associated with expansion of VET into new economic sectors and specializations, further development of regional qualifications according to the regional needs and further integration of occupational and transversal (key) competences in VET programmes (Bertagna, 2020).

Competence on policy level is regarded as a central reference for personal and economic development and for education and training system to support these developments (ISFOL, 2014, p. 34). Competence approach is operationalized and manifests through CB design of qualifications and system of competence certification. Training standards (*standardi formativi*), national figures and regional professional profiles are defined by specifying concrete competencies of qualification, knowledge and skills/abilities that constitute them (*competenze, conoscenze, abilità*). Competence as educational and social construct is visible in policy documents, operational programmes and academic discussions. For example, strengthening of CB education was indicated as an area of investment in the EU-funded National operational programme 2014-20 ‘Per la Scuola: competenze e ambienti per

l'apprendimento'[7], investment priority of which was 'investment into education, vocational training for competences and apprenticeship'.

Competence officially is defined as '*the proven ability to use in the situations of work, study, personal and professional development the structured entity of knowledge and skills acquired in the context of formal, informal and non-formal learning*' (Legislative Decree No 13, 2013). This definition largely corresponds to the competence definition of the EQF recommendation ('*competence means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development')* with one exception – it is limited to knowledge and skills elements and does not mention personal, social and/or methodological skills / abilities. There can be seen different conceptualizations of competence among regions and in different contexts:

> *Competence is not a phenomenon comparable to knowing how to do, but a way of being of the person who enhances all their potential* (Veneto Region, 2011).
>
> *Competence approach applied in Lombardia offers the point of departure for re-shaping the relationship between the learning and work and assumes the concept of competence understood as application of knowledge and skills in a given context by actuating the behavior which is best suitable for the achievement of the result. It is not just simple capacity of acting, not just a knowledge, but the know-how of application* (Lombardia Region, 2013).

A need for balanced 'work oriented learning' and learning to develop basic and transversal competences for personal development, *formazione per l'individuo* (A. Carlini & Crispolti, 2020), is acknowledged and is regarded as a challenge on the national policy level. The former is regarded as the core of VET, is stressed by employers and is prioritized and enjoyed by learners, whereas the latter is regarded to be '*the keystone for employability in short-term and, at the same time, is fundamental for the growth of the individual*' (A. Carlini & Crispolti, 2020, p. 107). The surveys of employers also pay a due respect to the importance of basic and transversal competences for learners and graduates' integration into the labor market and indicate insufficient level of basic competences (A. Carlini, 2017).

The policy documents (Good school / Buona Scuola reform, Law No 107/2015) increasingly promote the importance of key competences, considered to be a 'value added of VET' (Bertagna, 2020). Documents supplementing above mentioned qualification profiles provide detail descriptions of key competences in addition to occupational ones. In educational practice key competences embrace several taxonomies (see visualization in Annex 2):

[7] https://www.istruzione.it/allegati/2014/PON_14-20.pdf

competenze di base, competenze chiave della cittadinanza, competenze personali, sociali, di aprendimento e imprenditoriali.[8]

The movements towards CB / learning-outcomes based education in overall education system are recorded back to 2003 (Frontini & Psifidou, 2015) and in 2010 a curricular regulation of national VET subsystem (Nuovo Ordinamento per Istituti Professionali, D.P.R. 87/2010) expressed a target of making education competence-based (Ronchetti, 2017). Developments related to NQF, its' referencing to EQF, development of National repertory of education, training and professional qualifications with Atlas of work and qualifications and national certification system contribute to institutionalizing competence as a key concept in education system and practice. For example, the purposes of Atlas of work and qualifications are standardization of qualifications, harmonization of qualifications and the language used in defining competences and skills, comparison of regional qualifications (OECD, 2017). This evidences that national and regional level policy support to CB education remains strong despite of emerging critical views by researchers and academics.

Document analysis revealed how the discourse of CB education travels to practice level as an alternative for subject-based education under such labels as competence approach - *l'approccio per competenze*', competence-based didactics - *la didattica per competenze*, competence-based projection - *programmazione per competenze*, competence-based training - *apprendimento per competenze'*, competence-based formation - *formazione per competenze*, competence-based valuation - *valutazione per competenze*. For example, guidance to VET providers prepared by CNOS-FAP specify that '*Competence becomes an organizing principle of the curriculum, a mediator to build authentic and meaningful learning conditions, becomes personal asset which can be spent in a plurality of living environments. The ongoing reforms therefore imply a real rethinking of the teaching-learning functions and a clear transformation of the educational institution understood in the traditional sense. This is why in the recent past the world of school and vocational training have been affected by a process of progressive deconstruction of traditional curricula based on disciplinary knowledge in favor of an approach 'for competence' (per competenze)* (Salatin, 2018, p. 10). Competence-based

[8] '*Competenze di base*' are competences within 'cultural axes': language axis, mathematic, scientific technological axis and historic social axis and '*competenze chiave della cittadinanza*' reflect key competences in the sense EU recommendation on key competences: learning to learn, project, communicate, collaborate and participate, act in autonomous and responsible mode, resolve problems, identify links and relations, acquire and interpret information. A list of personal, social, learning and entrepreneurship competences (*competenze personali, sociali, di aprendimento e imprenditoriali*) was agreed in the Agreement in the state-regions conference of 1st August, 2019 (State-Regions conference, 2019). The following competences were specified: work constructively with others, manage learning and professional development, act in an entrepreneurial and innovative way and develop and maintain own physical and emotional well-being.

approach is defined as a methodology following which competences are associated with problems and tasks and necessary intellectual resources in terms of knowledge, skills, attitudes, techniques mobilized by this competence are identified (Nicoli, 2019).

The risks of over-reductive treatment of competence in instructional processes are acknowledged. These risks are associated with over-estimation of performativity of learners, failure to overcome a mechanic knowledge-skills summative approach to competence (*'competences are not intended as a simple and somewhat mechanical sum of knowledge and skills, but also include internal resources of an emotional, relational and motivational nature, which are equally important'* (Gomez & Tacconi, 2015, p. 7)) and a lack of coherence among different parts of competence and didactive activities aimed to achieve it (Nicoli, 2012; Tagliagambe, 2011). Conception of competence, as a meaningful construct for education, is defended in the book '*Le competenze. Una mappa per orientarsi*' (Benadusi & Molina, 2018), which summarizes Italian and international theoretical and policy discussions about competence movement. Authors of the book stress a complex architecture of competence and demonstrate three possible generalized approaches to competence: competence-as-performance, competence-as-sum-of-resources and competence-as-mobilization-of-resources. Following these lines of argument, it is possible to distinguish narrow and more broad conceptualizations of competence.

When it comes to the operationalization of CB / 'learning outcomes based' education principle, it is noted that this principle is not yet fully realized:

> *While the benefits of the learning outcomes orientation and its potential to change teaching and learning are recognized, in practice teachers continue to use a more traditional input-oriented approach. Learning outcomes implementation is mainly part of pilot projects. It is not yet possible to assess the extent to which the approach is applied or its impact on the ground* (UNESCO et al., 2019, p. 300).
>
> *However, although the notion of 'competence' has come onto the scene in its full glory, teaching by competence is still difficult, especially in the upper secondary school. Much has changed on paper, while in class, the modifications are not so clearly observable* (Ronchetti, 2017, p. 407).

Such a situation is explained by ideological, conceptual, methodological and pragmatic practice level problems and dilemmas that teachers and trainers face (Benadusi & Molina, 2018; Frontini & Psifidou, 2015; Ronchetti, 2017):

> *In the midst of this 'let's pretend to' setting, teachers are constantly told that they should incorporate competencies in their teaching. A decree of 2012 says, 'The EU key competencies framework is the horizon at which the Italian school system aims' (D.M. 254 2012). Written and non-written indications are vague and contradictory: those who attempt to get a deeper understanding often end up being lost and confused* (Ronchetti, 2017, p. 416).

3.2.4. VET curriculum

Criteria of unit of comparison:
- Conception of VET curriculum and its ideology
- Manifestation of competence construct
- Curriculum planning, development, implementation system
- Intended and enacted curriculum manifestations*:
    - Outcome oriented vs input oriented: representation of competence and learning outcomes
    - Flexibility of curriculum for teacher: prescriptiveness vs open curriculum
    - Flexibility of curriculum for learner: demand driven vs supply driven
    - Learner-centered curriculum vs teacher centered curriculum
    - Powerful knowledge vs contextualized vocational knowledge
    - Occupational competence vs key competence
    - School-work boundary crossing situations

*Adapted from Frommberger & Krichewsky, 2012

Analysis of policy and curriculum governing documents which define the conditions for VET curriculum enactment, project the content of curriculum and explore / guide the process of curriculum implementation revealed that VET curriculum in Italian context is dominated by social and economic efficiency ideology with strong elements of progressive learner-centered ideology (Adamson & Morris, 2007; Schiro, 2013). Following analysis of documents and available intended curriculum examples the perceived mission of VET is to equip learners with competences of professional-technical and of transversal nature, by stressing the professional and personal development of learners. The efficiency of curriculum is seen through personal, social and economic perspective and holistic personal development of VET learners and their integration into society is considered to be equally important as their employment and contribution to economic development of the country.

It is stressed that competence may be expressed 'through simple / atomic phrases and through more articulated and complex phrases', but it must always be expressed in relation to dimensions of autonomy and responsibility, work processes and expected outputs (State-Regions conference, 2019). Methodological documents on formulation of competencies underline a broad character of competence: *'competence cannot be broken down into further 'competencies' and cannot be reduced to molecular activities or abilities, or with a medium degree of analyticity: it must deliver explicitly a performative representation of the action that the subject puts in place in relation to the management / governance of one or more areas of work process <…>* (Lombardia Region, 2018).

Structurally competence in Italian qualification documents (profiles and figures) encompass two elements – skills and knowledge, which must be coherent in terms of

extensiveness and level of complexity. The skills refer to the capacity to apply knowledge and use know how (*saper fare*) to accomplish tasks and solve problems, they can be articulated as cognitive and practical capacities. The knowledge in broad terms incorporates theoretical, methodological and contextual knowledge. It is underlined that knowledge is identified with respect to specific competence and in relation to professional activity.

National figures, which regulate selected qualifications at EQF/NQF third and fourth levels (operators and technicians), follow a systemic model, starting with three 'recursive competences' which are characteristic to all figures, followed by technical-occupational competences characteristic to the figure described and (or) by competences of specialization. The recursive competences include *(1) defining and planning of work, (2) preparation, monitoring of tools, equipment, etc., (3) working in safety and in compliance with the rules of hygiene and environmental protection, identification and prevention of risk situations for oneself, for others and for the environment*. Examples of technical-occupational competencies of catering operator, EQF/NQF 3: *Serve meals and drinks in the dining room in compliance with the health and hygiene regulations; Prepare snacks and fast-food dishes to be served at the bar, preparing and combining the raw materials according to the recipes and in compliance with the health and hygiene regulations; Administer beverages, ice cream, snacks, cafeteria and pastry products*. Regional profiles are designed by regional actors, thus the competences within profile describing the same or equivalent qualification of operator and technician usually are articulated in a different mode.

It should be noted that Nicoli (2019, p. 43) criticizes that competence profiles within National repertory are constructed from technocratic point of view, are derived from technical tasks and do not insufficiently address or fail to address cultural and soft skills. But it also needs to be acknowledged that diverse generic competences are in fact specified by designating knowledge and skills elements in the Agreement in the State-Regions conference of 1st August, 2019 (State-Regions conference, 2019). Examples of competences of cultural axis (*competenze di base*): *Express oneself and communicate in Italian in personal, professional and life contexts (functional alphabetic competences - communication); Use simple scientific concepts and procedures to understand phenomena and solve simple problems related to one's daily and professional life contest, in respect of the environment (mathematical, scientific and technological competences).*

Italy represents a country with a mixed curriculum model where transversal key and occupational-technical competences are agreed on the national / regional level and decisions about input parameters in line with flexible requirements of Regions (such as, allocation of

hours within subjects, planning of training schedule, content, assessment) are left for VET institutions. Thus, curriculum is developed by a VET institution and its teachers and trainers on the basis of requirements set by the region as well as training standards and qualification profiles. Teachers and trainers interpret these requirements and prepare their detailed didactic plans.

In guidance material competence is positioned as an outcome of curriculum (<…> *competence standard is the point of arrival* <…> (Nicoli, 2012), however examples of intended curricula received and publicly available indicate inclination for subject (*materia*) oriented tradition where training schedule involves theory and practice-oriented subjects. The latter is often treated as practical learning in 'laboratory'. In contrast to this dominating tradition, there are also cases when training is planned following a work-process logic. Curriculum document analysis shows a variety of curriculum planning approaches among VET institutions. In some cases, a didactic plan is composed by mapping training units, training contents, valuation, etc. to the specific competence, whereas in other cases, mapping of training content and didactic activities to competences is indirect and implicit – articulations of competencies serve as a reference the path to which is chosen by teachers and trainers.

The VET curriculum in Italian context can be regarded as an open curriculum, when VET institutions and their teachers and trainers are given freedom and autonomy to plan their curriculum in accordance with references given by competence and education standards: '*The standards of competence leave the designers of training course the freedom to make their own choices, also taking into account their own values, their own reference models and the type of training chain they work on. If the standard of competence is the reference point of arrival, the definition of the path to arrive at the standard is left to the freedom and responsibility of the person providing training'* (Nicoli, 2012, p. 24). What regards the framing of curriculum, in curriculum governing documents each region specifies the number of hours to be dedicated for axes of competences with a certain flexibility over predefined number of hours. For example, in Lombardia region 15% of curriculum is dedicated for 'flexible' part taking into account territorial and learners' needs. In addition, VET institutions are given the indicative range of minimum and maximum hours for each area. In Sicily, VET institutions are allowed flexibility of 10% in hour allocation between the areas and 20% within the area.

Curriculum can be defined as supply driven (Frommberger & Krichewsky, 2012) with elements of demand driven curriculum, ensured by a possibility of curriculum flexibilization / personalization and incorporation of special periods for enhancement of students with learning problems or gaps in learning (LARSA). Flexibility in terms of learning content choice is limited

with rather broad training programmes and a large part of curriculum structure dedicated to cultural axis fixed with internal content flexibility allowed for teachers/ trainers. Differently from other EU countries, a clear shift to modularized curriculum is observed only at EQF level 5 programmes. However, the organization of training often follows situated unit-based approach realization of which is defined by VET institution.

Guidance materials and analyzed curriculum implementation documents clearly point to learner-centered approach. This approach is strengthened by the VET programmes' focus on holistic and personal development of the learner which calls for active didactic strategies to mobilize learners' knowledge and skills together with attitudes (Nicoli, 2019). Interdisciplinarity, the link between occupational and key competences as well as to real life is stressed. Welcoming (*accoglienza*), accompanying throughout different stages of curriculum, tutoring, curriculum personalization, LARSA support are used in curriculum realization (Bertagna, 2020; Zagardo, 2020).

Due to the nature of curriculum composition, where cultural axis area and technological-professional area are considered equally important with the former representing around 45%, learners have access to different types of knowledge: disciplinary knowledge under cultural axis and occupationally contextualized knowledge. Holistic orientation of VET programmes at personal development and integration of transversal key competences contribute to securing a certain level of 'powerful knowledge' necessary for participation in social life (Wheelahan, 2007; Young, 2013). Additionally, solid periods of learning at workplace support acquisition of work-process knowledge.

Regions' guidelines which govern curriculum permit VET institutions to freely compose the structure of programme, however based on compulsory education standards requirements typically it will involve disciplines of Italian language, English, history / law, mathematics and informatics, sciences followed by disciplines with contextualized vocational knowledge (for example, technology, electrotechnics, technical design, etc.) and practical training laboratories. Proposed minimal training standards (for 3rd and 4th year of training) are competence-based with specified competences of cultural axis and teachers and trainers are expected to follow them in connecting disciplines and key competences with work processes by choosing strategies and contents that they deem to be appropriate. '<...> *an attempt was made to offer a typological representation of knowledge that is neither too detailed nor too generic <...>, which could highlight the connection of mathematics, sciences and technologies with the specificity of sectors and / or work processes'* (Vicini, 2020, p. 58). This implies

additional efforts of teachers and trainers to rethink disciplinary logic and to connect it with key competences and their constituent knowledge and skills dimensions.

Another guidance for teachers in making decisions about knowledge selection and contextualization are standards of professional-technical competences (national figures or regional profiles) that provide description of knowledge and skills for each competence. Knowledge references in these standards are contextualized occupationally (narrative of knowledge contextualization is obvious in guidance materials) (Trainito & Negro, 2020, pp. 77–78). In addition, they also embrace knowledge which is characteristic to key competences and cultural axis.

Attention to key competences development is a distinguishing feature of VET programmes. VET institutions follow common compulsory education standards of cultural axis (Legislative Decree No 139/2007). Additionally, respecting the autonomy of VET institutions a specification of key competences to be achieved at the end of VET programmes has been adopted in 2011 and later updated in 2019 (Agreement in the State-Regions conference of 1st August, 2019) to serve as minimal training standards *(standard minimi formative delle competenze di base del terzo e quarto anno dell IeFP*) (State-Regions conference, 2019). The designers of these specifications elaborated a list of basic competences (*competenze di base*) under six broad headings and their descriptions in terms of knowledge and abilities. Additionally, detailed equivalence and correlation tables are provided to show connections between these competences with the ones specified for general education institutions, key competences for lifelong learning as defined in EC Recommendation and ESCO (European classification of skills, competences and occupations). Lastly, a list of four personal, social, learning and entrepreneurship competences (*competenze personali, sociali, di aprendimento e imprenditoriali*) was adopted in 2019 to underline the importance of personal competences for learning and employment and to encourage their development in VET (Vicini, 2020). Their place in curriculum is yet to be seen and in other instances they are renamed ‘resources’, ‘personal skills’ thus leaving their enactment an open issue for regions and VET institutions (Vicini, 2020). The example of Piemonte region shows that integration of these competences into training courses is required by allowing VET institutions to choose teaching methods that they consider to be the most appropriate and in consistence with the professional standards (Piemonte Region, 2021).

The main principle advocated in regard to key competences is that they are of inter-disciplinary nature and that they can be developed both, in general education subjects as well as together with technical-professional competences. These competences should not be

confused with the disciplinary general education areas or singled out, rather they should be regarded as a part of competences' universe tightly connected with other key and professional-technical competences (Vicini, 2020, 58 p.).

The major part of learning (unless programme is realized in apprenticeship form) is organized at VET center with learning in classes or laboratories. Laboratories are considered to be the central learning space, mirroring working contexts and creating situations to gradually develop and try-out competences acquired (Piemonte Region, 2021). They are used for connecting knowledge and skills dimensions of competence. Didactic documents obtained reveal versatility of competences which are object of learning in laboratories. They range from those of professional-technical nature to the ones of transversal / generic nature as for example, applying quality principles for work processes.

Strengthening of work-based learning and apprenticeship is an educational policy priority (Cedefop, 2017a). Learning at workplace (*internship - stage*) is a mandatory part of VET curriculum, usually organized in the third year of studies and, in some instances, in the second one, supported by company and VET institution tutors. The duration of *stage* among regions differs (240-440 hours in Veneto region, 300 hours in Piemonte region) and though it composes a considerable part of annual curriculum employers propose its' extension. *Stage* model is positively assessed by learners and by employers as a setting to acquire new skills and knowledge, to apply in practice those already achieved and to familiarize learners with working culture and working contexts (A. Carlini, 2017; A. Carlini & Crispolti, 2020).

3.2.5. Vocational teachers and trainers' competence and training

Criteria of unit of comparison:
- Vocational teachers and teachers training system
- Vocational teachers and trainers' activities changes related to CB education introduction
- Vocational teachers and trainers' competence needs in relation to CB education

In Italian VET system teachers (*insegnanti / docenti*) and trainers (*formatori*) are considered to be separate professional figures and their roles and responsibility have clear limits (Angotti, 2018; D. Carlini & Infante, 2016; Cedefop, 2018). Teachers are regarded to be 'content experts' whereas trainers – 'process experts', playing multiple roles to support learners learning, wellbeing and smooth integration into workplace (D. Carlini & Infante, 2016).

There are no national occupational standards or qualification requirements for trainers working in training centers of regional VET subsystem, contrary to those teachers, working in VET schools (*istituti professionali*) of the national VET subsystem (Klein et al. 2020). Under

the national collective work contract, it is required to have at least upper-secondary education level and relevant professional experience and regions may set their requirements for vocational trainers' qualification, experience and training (D. Carlini & Infante, 2016; Klein et al. 2020). For example, in autonomous provinces of Trento and Bolzano trainers are obliged to participate in initial training. The requirements for continuing professional development are set with mandatory participation in in-service training and the criteria regarding human resources for VET providers accreditation, however the VET providers' survey of INAPP shows that around one third of VET providers do not organize in-service training for their teaching staff (D. Carlini & Infante, 2016; ISFOL, 2015).

Although required in rare cases, the trend of trainers' enrolment to university degree courses is observed (D. Carlini & Infante, 2016). The university programme courses offered to trainers may include topics on CB education planning (for example, 'competences', relationship between knowledge and competences, certification of competences, key competences for lifelong learning, competence-based planning and didactics), what reconfirms the central position of CB education approach in overall education system (Descriptor of study programme 'Educational sciences for educators and trainers' ('*Scienze dell'educazione per educatori e formatori*') of RomaTre university).

The observed or expected changes in trainers activities include more dynamic trainer-student interaction and active, learner-centered didactic methods, mentoring, individualization and mediation of learning process, facilitation of authentic and challenging learning spaces (*including la didattica laboratoriale*), active usage of knowledge, systemic approach to integration of tasks performance and higher order skills - abstraction, language and reflection of learners, promotion of students' group learning, teachers and trainers peer cooperation and interdisciplinary approach to curriculum planning and instruction (Benadusi & Molina, 2018; Frontini & Psifidou, 2015; Lombardia Region, 2013; Malizia & Tonini, 2015; Nicoli, 2012, 2019; Ronchetti, 2017; Tagliagambe, 2011). Documents which discuss transition to CB approach also point to the following barriers of teaching paradigm change: overloaded content of training, misconception and unpreparedness of training staff for this approach, lack of cooperation of teachers, issues with structuring of training spaces, organizational issues (Tagliagambe, 2011).

CB approach requires replanning of instruction based on work processes what implies a greater demand for teachers and trainers to deepen and broaden their technical-professional knowledge and skills and follow innovations in their sectors. Due to intensified and more systemic workplace learning trainers are required to act as tutors and coaches to students in

accompanying them throughout periods at workplace (Tacconi et al., 2020). Cooperation with 'reality educators' and their involvement into curriculum planning and realization is another necessity and still remains a challenge due to the lack of proactiveness of companies to engage into work-based learning (Cedefop, 2017; Nicoli, 2019).

As already mentioned, the uniqueness of Italian VET curriculum is a high status of key competences which embrace several taxonomies and calls for trainers and teachers' cooperation and trainers' capacities in contextualizing these competences into professional area and in accordance with profile of learners (Piemonte Region, 2021; State-Regions conference, 2019).

> *In particular, basic competences (competenze di base) must be developed as acting competences and not considered as mere disciplines; they must be connected to the tasks of reality, to the masterwork, to the documents produced during the training course, also within laboratory contexts and in collaboration with companies, through the integration of cultural and professional areas.* (Piemonte Region, 2021, p. 30)

Strategies for contextualization of transversal key competences standards and development of these competences are reserved for VET institutions and their teachers and trainers, however the expectation is that trainers will demonstrate '*a courage for making difference*' and changing didactical process from linear one to the one of transversal nature, concentrated on problems and real situations (Vicini 2020, p. 63). The process also needs 'a more structured and organic planning on a multi-year basis' (Salatin, 2018).

As noted, competence orientation imposes a different, horizontally and vertically coordinated, approach to planning of didactic activities and a version of modular approach, when didactic process is structured into units of learning (*unità d'apprendimento, unità formativa*). Introduction of units of learning supports multi-disciplinary approach and cooperation of teachers, facilitates balance of occupational and key competences, enables planning of concrete, meaningful, product-oriented learning tasks and assessment of learners' performance and competences achieved (Piemonte region, 2021; Salatin, 2018). To tackle this risk of fragmented knowledge, interdisciplinary negotiations in defining core areas of knowledge are recommended (*knowledge is selected in founding 'nuclei' that become the cornerstones of interdisciplinary planning,* Salatin, 2018, p.12).

What regards curriculum planning activities, due to the absence of detailed national or regional official curriculum, teachers and trainers have to be prepared to reflexively play a central role in projecting curriculum in teams and at individual level (Gomez & Tacconi, 2015; Nicoli, 2012). Curriculum planning involves epistemic and didactive reflection about mapping

of competences of different domains with training subjects and training activities, negotiating choices and harmonizing individual contributions, followed by planning of more specific individual actions to reach the horizon of competences (Gomez & Tacconi, 2015). The curriculum planning should also involve alignment of taught curriculum to the innovations in the work processes and products in terms of didactic strategies and training resources what, according to views of some employers, is not always performed in a timely manner (A. Carlini, 2017). Thus, curriculum planning involves hermeneutic work as claimed by Gomez and Tacconi (2015) and backed by Vicini (2020):

> *The design work of the individual teacher is not the 'programming' of time, which would require expressing the core programme in a specific and in such a prescriptive way as to dictate almost every single step in a precise sequence. It is a question of doing a hermeneutic work: the core curriculum itself requires a hermeneutic approach, which leads to a situated interpretation of the regional guidelines, and not a simple addition of some local coloring to what has been defined at the regional level; here we are faced with the task of practicing a hermeneutics of the core curriculum and of specific training course* (Gomez & Tacconi, 2015, p. 244).
>
> *The standard has a sort of double constitutive nature: on the one hand it delimits - in a binding way - a perimeter of elements to be developed, on the other hand it indicates a direction and leaves different possibilities of options and content-operational declination. That is, it requires a free and creative reading and assumption by those called to translate it into concrete educational practice* (Vicini, 2020, p. 62).

Finally, since a large share of VET students in Italy come from disadvantaged backgrounds, trainers become responsible for changing and supporting learners' motivation and their determination to graduate (A. Carlini, 2017; Cedefop, 2018; Zagardo, 2020). Thus, the importance of trainers' socio-pedagogical competences, personal values and capacities is stressed (Klein et al., 2020; Tacconi and Gomez (2013) cited in Tacconi et al. 2020). Taking into account diverse backgrounds of VET learners, trainers need to be equipped with flexible, culturally-sensible didactive strategies that ensure holistic development of technological, cultural and social/personal competences (Nicoli, 2019).

3.3. Summary

To summarize this chapter, the analysis revealed how political, economic, social and cultural external factors impact skill formation and VET policy initiatives. In both countries VET systems struggle to overcome negative impacts of these factors. VET systems find themselves in competitive relationship with general education and higher education systems; in Italian context VET system is in more complicated position, because of competition between state and regional sub-systems of VET. In both countries VET graduates, compared to higher education graduates, have less opportunities to integrate into labor market and more frequently are exposed to unemployment. The reasons for such a situation are found in overall performance of economy, companies characteristics and their demand for VET graduates. In addition, when faced by economic crisis VET systems and VET graduates seem to suffer more compared to other education sectors since it is tightly dependent on labor market fluctuations.

What regards CB qualifications, curriculum and related policy initiatives and developments, we see that they were initiated as a response to different goals. In Lithuanian context the primary goal was the creation and maintenance of the system to respond to the needs raised by labor market, whereas in Italian context, competence has been regarded as a central reference for personal and economic development. Additionally, CB education related initiatives in Italy were expected to address regional differences in qualifications and programmes, to build the foundation for competence certification system and to facilitate labor mobility within the country.

Competence approach is firmly introduced into qualifications in both countries, however, in terms of curricula, in Lithuania competencies are the basis for structuring and framing curricula, whereas in Italian context they serve as a reference or a horizon for teachers in planning their teaching activities and performing assessment.

The fact that CB curriculum implies changes to organization and implementation of training, didactic and learning outcomes assessment strategies is admitted by scholars in both countries. A general consensus is that teachers should be equipped with active, learner oriented, individualized teaching strategies covering cognitive, functional / occupational and key competences, that they should plan more inter-disciplinary activities, offer context-rich, authentic learning assignments within school and outside of it, should be open for peer collaboration and cooperation with practice agents. There are views that CB education offers an opportunity for making learning more creative, active, reflective, i.e. the one where students are necessitated to take initiative for their learning outcomes. This chapter focused on a broad comparative analysis of CB curriculum reforms and institutional framework. The final analysis of CB curriculum enactment models supplemented with empirical research data will be presented in section 4.3.

CHAPTER IV. FINDINGS OF COMPARATIVE EMPIRICAL RESEARCH OF COMPETENCE-BASED CURRICULUM ENACTMENT IN LITHUANIA AND IN ITALY

The empirical part of the research aimed at discovering what changes teachers and trainers experience as an outcome of introduction of CB curriculum, what are the factors influencing curriculum enactment and what activities teachers choose in order to enact CB curriculum and to develop students' competences. The semi-structured interviews material also allowed distinguishing benefits and unresolved issues of curriculum reform. The research findings are presented through the following categories: The changes implied by CB curriculum, Factors having impact on curriculum enactment, Activities employed to enact curriculum and Implications of curriculum enactment for teachers' competence.

4.1. Findings of empirical research in Lithuania

4.1.1. The changes implied by CB curriculum

While exploring the changes implied by CB curriculum, the following subcategories characterizing curriculum and teachers' activities changes emerged from the data: Modularization of curriculum, Transition to national curriculum, Introduction of technological or process innovations in curriculum, Changed organization of workplace learning, Work-process teaching logic, Coordination and consultation with other teachers, Emerging responsibility of teachers for theoretical and practical training, Emerging responsibility of teachers for development of occupational and key competences.

Table 8

Framework of categories and subcategories 'The changes implied by CB curriculum'(Lithuania)

Categories	Subcategories
Curriculum changes	Modularization of curriculum
	Transition to national curricula
	Introduction of technological or process innovations in curriculum
	Changed organization of workplace learning (reduced workplace curriculum)
'Teaching is different'	Work-process teaching logic
	Coordination and consultation with other teachers
	Emerging responsibility of teachers for theoretical and practical training
	Emerging responsibility of teachers for development of occupational and key competences

Transition from subject-based curriculum to modularized curriculum is the dominating narrative about recent changes in the interviews. This duality of programmes is extremely noticeable. For the respondents the defining feature of modern curriculum is modularized structure when every module is targeted at development and acquisition of concrete competencies. Additionally, modular programmes introduced new curricular structure consisting of occupation related modules, an introductory module aimed at introducing the programme and occupation and a final module aimed at workplace learning. Qualification, as textually described in qualification standards, is understood as a combination of different separate competencies. Transition to modularized curriculum was not easy and came with conceptual, methodological and organizational dilemmas *('What is competence?', 'What is module?', 'What about assessment?')*, which VET providers were left to solve alone.

When asked to specify, how they understand competencies and CB education, respondents commented that competencies '*are the main reference point for developing modern youth in vocational school*'; according to them, it is an action, an ability to act, to do something. The respondents recognize orientation of competence at 'singularity' of knowledge, skills and values, however, in their elaborations competence is usually instrumentally oriented at concrete practical activity, at 'what market, employers need', at what is specified in sectoral qualification standards prepared by employers. As one respondent claimed, attitudes (values) are not elaborated in sectoral qualification standards:

> *Competence is what the student <…> knows, is able to do. Well, let's say, do, because it's still a vocational school, the job is directly related to some activity. Hence, competence is the ability to do the job. And, additionally, there is competence, well, such a general competence <...> If we consider a cooks training program, competence means to do specific works: plan, perform, prepare your workplace, and finally, prepare a dish and present it to the consumer. (LT-R13)*
>
> *Each module provides competence. All programmes, welder's or chef's, or a mechatronic's, are constructed in such a way that a person, who has acquired one competence, or in other words, finishes a module, already has that competence, he already can perform certain functions. (LT-R27)*

Modularization also has significantly changed a duration and structure of programmes: the subject-based structure was transformed into work-process oriented modular one. As a result, theoretical, disciplinary subjects or subjects meant for key competences development have disappeared or were integrated into modules demanding for a closer integration of theory and practice and recontextualization of key competences developed.

A part of the respondents, especially those working as managers, willingly accept the introduction of national curriculum. In the past, schools developed their own school curricula, and programmes that provided the same qualifications varied. Modularized training programmes are prepared by expert groups and several interviewees express their trust in expertise of standards and curricula developers. Unified national programmes are viewed positively as a tool for more uniform training requirements and training quality in different schools, what can be considered as a signal of competition or intolerance to poorer training quality, as well as better opportunities for students' mobility between different schools.

> *Each school had its own programmes before – they developed their own. And those developers weren't always very competent to do that. And I saw, when I looked at other schools' programmes, they were really very different. Well kind of the same thing but taught differently. And now ... Now everything is clearer and really those competencies are much clearer now, much better than they were before in subject-based ones. (LT-R17)*

Respondents admit that curriculum will not completely reform the training content and change what teachers teach ('*With modular training new cuisine has not been invented'*). Still, they notice that training programmes, developed on the basis of new qualification standards, are complemented with new technologies and new work processes. Additionally, due to the change of curricular structure in accordance with broader work processes, some previously marginal thematic areas have received more attention in the programme.

> *For example, there was no such module 'Banquet dishes', it was not singled out or it was given very little attention. (LT-R10)*
>
> *The training programme in surface finishing did not have an insulation module, now it is added. <…> There is a separate module for decoration. Previously we did not pay so much attention to decoration, there are no conditions to train this competence, and now we must teach this module for fixed number of hours. (LT-R25)*

Interviewees notice a paradox situation, that introduction of modules reduced the students' time spent in the workplaces. But on the other hand, this change receives diverse opinions about the importance and relevance of workplace curriculum. Some respondents believe that modernization of VET institutions facilities and establishment of sectoral practical training centers compensate for this lack, whereas the others claim that under current conditions and considering employers' indifferent and unsupportive attitude students learning at workplace does not contribute to competence development as intended.

> *In my opinion the module of introduction into the labor market now is ideal. Those six hundred hours were certainly fine, but they didn't work. (LT-R17)*

If we compare modular and non-modular programmes ... In fact, the cooperation through non-modular programs with employers was very strong. And now <...>, the employer doesn't really understand how it works here if we can't give students when they need them. Because there are very strict rules - the module started and that module is intended for training at school and development of practical skills. And practice at workplace is only in the last, final module. (LT-R19)

As reflected by one interview participant, due to changed curriculum '*the training happens differently*' (*Vyksta kitaip tas mokymas*). An attentive look at units of coding that speak of change in teachers work resulted in distinguishing four subcategories.

Table 9

Description of subcategory 'Teaching is different' (Lithuania)

Manifestation of change	Illustration of change	Illustration of resistance to change
<u>*Work-process teaching logic*</u> Teachers organize their work and frame it according to the logic of work-process. Thus, training becomes more concentrated, more intensive, direct and focused on reaching the competence through observable learning outcomes. Such an approach requires a close alignment of training planning, instruction and assessment.	*We work with students from the first day until we finished all operations. (LT-R12)*	*Teachers are asking 'I'm working now, and what about other modules?' <...> And if they have a module, they have seven or five lessons. Every day with the same group. <...> And when module is over, another teacher starts the next module – and then what, 'I'm free now, what can I do?'. (LT-R13)*
<u>*Coordination and consultation with other teachers*</u> New curriculum implies increased coordination and consultation among different teachers within and across modules. Vocational teachers and key competences teachers had to overcome their individualized approach to teaching, to rethink their curriculum coverage and to search for synergies with other teachers so that training content and training activities would be tuned. Planning of multiple teachers work, coordination of their working schedule within and across modules became more demanding and time-consuming and a real concern for administrators.	*Previously all the subjects were separated, every teacher had its own subject and now we had to connect everything into one. (LT-R10)* *Modular programme differs from subject-based one, because it is a team. The programme, which is impossible for one person to realize. (LT-R7)*	*It needs to be coordinated by everyone to run the program smoothly. Because in the first year we didn't understand that thing yet; foreign language, language culture, Lithuanian, all the subjects remained on their own. We weren't very aligned, but we kept improving. <...>. Now we take it for granted, but in the beginning there was everything. There was resistance. At first they said 'nonsense', but now 'everything is fine'. (LT-R21)*

Teachers have become responsible for theoretical and practical training Teachers feel increasingly demanded to integrate theoretical and practical training. The duality of 'theory teacher' and 'practice teacher' remains in the mindset of teachers but is waning due to more direct orientation at competence development and work-process logic.	*The most difficult was to accustom teachers to work with modular programme, so that one teacher should teach theory and practice. (LT-R23)*	*There were cases when we arrived to this point 'I am only a theorist and not a practitioner'. And in reality we had such situations that even being a cooks' practice teacher was a shame. And we had people who left the team, because they had to teach the child skills in practice - in the canteen... (LT-R19)*
Teachers have become responsible for development of occupational and key competences Since curriculum legislation implies that a tenth of training time should be dedicated to key competences development within modules in many schools responsibility for key competences was transferred to vocational teachers.	*Well, when key competences are singled out and now, we will learn, let's say, communication skills. Well, that's not the case. They have to be in all modules... Key competences are in every lesson; they are important for all activities. If you have a lesson, you must teach to communicate and to count... (LT-R13)*	*Teacher, he wants the language culture to be singled out, he says, 'I'm not a specialist'. Or a foreign language, too. <…> As if it was not their competence. But then when you talk and come to agreement... You ask teacher, 'Can't you explain the terms in a foreign language?' Quite a few can, but they are accustomed - if there is foreign language competence, there has to work a specialist. If there is a language culture – there has to work a specialist. (LT-R23)*

4.1.2. Factors having impact on curriculum enactment

The way how curriculum is implemented, the instructional strategies chosen, the attitude towards curriculum and teachers agentic orientation, the difference between teachers intentions and the result of the training process is subject to many factors (Billett 2011; Edwards, Miller and Priestley 2009). Interview data analysis and interpretation allowed identifying the essential external, organizational, and individual factors which shape the enactment process (presented in table 10).

Table 10

Framework of categories and subcategories 'Factors having impact on CB curriculum enactment' (Lithuania)

Categories	Subcategories
External factors influencing curriculum enactment	Economic and social context
	Technological advancement
	VET policy agenda o New policy initiatives o Frequent curriculum changes o Weakened policy-making capacity of national authorities o Underdeveloped career counselling system
	Limited methodological support and information to implement curriculum reform
Organizational factors influencing curriculum enactment	Availability of training resources necessary to fulfil curriculum requirements
	Availability of competent and experienced vocational teachers
	Internal organizational structure and microclimate, openness to change
Individual factors influencing curriculum enactment	Learners' attributes o Diverse groups of learners o *'Contemporary youth is different'* o Learners prefer practical training o Learners lack key competences o Learners lack learning motivation
	Teachers' attributes o Professionalism o Resistance to change o Enthusiasm and openness to change o Staying in comfort zone o Obedience to curriculum texts
	Teachers' attitude towards curriculum reform o Standardized o Disciplinary – conformist o Pragmatic o Creative freedom o Critical

4.1.2.1. External factors in curriculum enactment

Respondents draw attention at the situation in the labor market when employers do not see the need for hiring qualified staff, trained in VET institutions. Most respondents question the attitude of employers towards training of specialists; according to them employers demand for cheap labor or, on the contrary, want 'labor market ready', motivated graduates with practical experience and blame that VET system 'trains not what is needed', but are not willing to cooperate with VET institutions and dedicate their resources and time for VET learners. Some of them even rely on workers from third countries and, thus, do not want to play a more active

role in local VET system without apparent benefit. As noted, a ‘vicious circle’ is formed. The narrative of passive employers is distinctly noticeable and their attitudes, unwillingness cooperate and to contribute deprive teacher agency from resources to deliver rich and authentic learning. There are certain bureaucratical restrictions for organizing work placement throughout modules, thus some interviewees feel that current VET system is ‘departing from employers’ what impedes authenticity of learning.

> *In modular programmes employer should demonstrate a more dedicated approach, not only requiring or waiting for schools to train a specialist, but also participating from the first year themselves. Because if they claim ‘You trained wrong’, then ‘Where have you been three years’? ‘You could tell us in the first year that we didn't teach right, you could contribute’. (LT-R7)*
>
> *Employers want to have a builder with experience. ‘You didn’t teach them anything’. Wait, how dare you to talk like this? With the capacity of our workshops, these guys learn everything what is possible. (LT-R12)*

It is stressed that as technology changes, so does curriculum and the school: new equipment is acquired and sectoral practical training centers have been opened. For this reason, schools need more sophisticated, complex technological equipment, and teachers need relevant competencies and experience to demonstrate how to work with this equipment. Some respondents notice that due to technological advancement it is not feasible to have diverse technological equipment in schools, thus it is more relevant to focus on general key competences, such as ‘information search’, ‘communication’, ‘foreign languages’. Technological advancement also requires closer cooperation with employers in sharing learning spaces, accessing newest know-how and acquiring expensive training materials. Schools with sectoral practical training centers feel more secure in responding to technological advancement challenge, while others find it more difficult to implement renewed curriculum.

> *The training programmes are adapted to the modern needs of the market, where cars are modernized, more and more electronics are in them and more competencies related to electronics are needed. (LT-R3)*

Interviewees indicate numerous VET system political initiatives that have affected schools and teachers’ life. Among the most frequently mentioned changes are apprenticeship, establishment of sectoral practical training centers, change of teachers' salaries system, changes in the system of competence assessment and recognition and joint VET admission system. In the discourse on the changes of VET processes it is possible to notice a certain level of dissatisfaction, insecurity and helplessness. A significant number of respondents notice a lack of stability in

curriculum reform: the same programmes have undergone several iterative changes and it is feared that there will be another curriculum innovations in the future.

A few argue that the policy-making capacity of national authorities has weakened, however at the same time, an obedience for the legal acts authority and top-down curriculum policy change can be noticed through citation of concrete legal acts requirements or claiming that somebody from above ('Vilnius', 'managers', 'Ministry', 'they') has instructed to enact curriculum in a certain way. This is a perfect example of how curriculum enactment is socially constructed. It also evidences cases of weak agency when teachers feel that their engagement with curriculum reform at its initial stage was minimal leading to compliance with it. Finally, another systemic challenge mentioned is the under-developed system of career counselling in general education schools what implies that many VET learners make poor, uninformed vocational choices resulting in their subsequent low learning motivation and even dropping out from VET system.

> *I think that these changes are very difficult to implement in our country, we have a lot of work to do, but there are a lot of changes in the ministry lately... Well, I don't know how to say it here, but we must put up with it. Because, perhaps, the staff in the ministry cannot ensure the change that we desire, but maybe better times will come... (LT-R23)*
>
> *Training programmes change very often. And I myself participated in a group and we created, edited, adjusted those training programmes. You just sit down, get organized and something changes again. Modules, number of credits, number of hours. It takes a lot of time again. (LT-R1)*

The moment of the massive transition from the subject-based to modular curricula has been highly challenging. Interviewees notice the pressure of time in the design and implementation of the modular curricula, as well as the imposed rigid regulation of the transition to the modular VET curricula from the side of the Government. This state is reflected by the epithets '*confusion*', '*shock*', '*tension*' used to describe the start of modular training. Representatives of the administration emphasize that '*We presented, explained, discussed. And not once*'. Solutions have been discovered, institutional enactment strategies have been worked out and schools are now feeling stronger ('*We are now on a right track'*). Still, a part of the respondents criticize present curriculum design and renewal processes. Some see that experts who design curriculum try to suit it to their institutions' material and human resources. They also notice that no feedback about the quality of curriculum is collected, or it is not heard *(I'm talking about it for the first time in three years, LT-R14),* dissemination of information on curriculum changes is not working properly, it is scarce and not always reaches provincial schools.

Somehow, or because we live here in the province… It came as a surprise to us when we saw in July that a hairdresser program has changed. We didn't even know that it was being adjusted. And that for us was really a surprise. We knew that the other level programme was being prepared, but that current was being changed, shortened ... (LT-R15)

4.1.2.2. Organizational factors in curriculum enactment

The interviews revealed how different schools' realities are in terms of their material contexts and availability of technical, financial, and human resources. A tendency to differentiate between schools with sectoral practical training centers and those without them can be observed. Those with sectoral practical training centers usually do not experience particular problems, but some respondents expressed the opinion that without sectoral practical training centers and additional funds it is difficult to implement modular programmes and develop intended competences ('*you can't do that*'). Schools with less up-to-date equipment have access to other schools' sectoral practical training centers, but the cooperation process is difficult due to financial or logistic reasons. It is emphasized that when resources are lacking, the school is unable to meet the requirements of the programme unless learners and their families' financially contribute to learning resources.. Other VET providers, due to a large number of learners, experience a lack of learning space and depending on the available training facilities must rearrange the sequence of the programme modules, although the programme provides for otherwise.

Some schools enjoy good relations with the social partners, who help with material and human resources. The others manage to earn income, for example by providing catering services, and invest these profits into the purchase of equipment or training materials:

We lack equipment to accomplish the task in an innovative way. It's an issue of finances in first place. Well, we're getting enough projects. And we travel around with Erasmus projects to different countries. But we can't always implement programmes because we don't have the equipment. And we don't have that much money for products. Like seafood. (LT-R14)

The lack of human resources is also emphasized. In some schools there is a shortage of vocational teachers, whereas in others teachers' workload is no longer sufficient, especially for key competences teachers. Others complain that due to low level of vocational teachers' salary and their low status in general it is difficult to attract competent practitioners to work in VET school *(There is no one to work. There are no specialists, LT-R5).*

Interviewees often stress that the enactment of curriculum often depends on the approach and decisions of administration and in many interviews the relationship of

management staff and teachers is touched. Two patterns of internal organizational structure have emerged. In one part administration and management position themselves as supporters-backers of teachers *('We give initiative to teachers', 'They show initiative')* with complete trust in teachers' curriculum making and implementation decisions *('They somehow trust in us')*. In other schools, stronger hierarchical structure could be noticed when administration demonstrates a top-down approach to planning of curriculum implementation and more intensive monitoring-control mechanisms *('I control this process', 'I try to look closely at it', 'It depends on how administration reacts', 'There has to be a kind of whip above the head')*.

Modular training has called for a 'collective' teachers' competence and agency - teachers need to coordinate their training more with each other or even lead lessons together, what has highlighted the importance of dynamic / lively structured and informal teacher collaboration (the topic is more elaborated in section 4.1.3.8. on Teachers' collaboration).

4.1.2.3. Individual factors

The interviews revealed a complex picture of today's learners, the main elements of which are a changed learners' generation, diverse groups of learners, learners' preference for practical training, and a lack of learners' key competences and motivation.

Interviewees emphasize that compared to the learners in the past, current youth generation is brave, wise, curious, motivated, independent, not afraid to express their opinion, 'without taboos', digitally literate and more demanding. On the other hand, teachers increasingly work with diverse learners' groups, both in terms of age, abilities *('some will make assignment in five minutes, and with others you have to sit down for long')* and attitudes towards learning as well as their requirements for teaching quality. Due to VET policy of bridging initial and continuing VET there is a growing number of adults who study together with young people. Adults' participation in VET is seen as an additional impetus for teachers to seek new knowledge forcing them to '*stretch up*'. It is often emphasized that students are more inclined for practical assignments, they are reluctant to learn theory, and therefore teachers are in favor of closer integration of theoretical and practical training. It also appeared that due to gaps of general education system the level of students' key competences is low (communication, mathematical literacy mentioned in particular), and a part of entrants are not yet mature enough.

Despite the opinion that the current generation of young people is curious and demanding, the interviews very often reveal a lack of students' learning motivation. Some lack motivation to study because they are forced to start working due to the socio-economic

situation in the family, others simply lack learning motivation (sometimes also due to the gaps in the career guidance system). Many students see their profession narrowly, are not aware what competencies are required in the labor market, and do not realize how demanding is learning and working. They come to study without a career plan and underestimate their inclinations or surrender to parents or friends' opinions. As a result, low learning motivation worsens attendance and increases drop-out rate, affecting school performance. Due to the lack of students learning motivation, teachers are forced to look for more active teaching methods that would interest students and are more focused on practical assignments and the development of practical skills. Indeed, teachers emphasize that it is difficult to keep students engaged in theoretical training, what affects the level of their knowledge and reasoning capacities.

> *Those who come after completing basic education are entirely unmotivated and have no idea about their future job. They imagine the hairdresser's work very superficially. (LT-R1)*
>
> *I have a group where out of the eight people who come to classes, only one is motivated to do something. The other seven come to spend time in school. (LT-R2)*

Turning to teachers, they express very diverse reactions at curriculum change. Some look positively at this 'innovation', whereas others are hostile or skeptical. As already explained, transition to modularized national curriculum brought in the changes for teachers work thus having an impact for teachers' agentic orientation in terms of what they do under these requirements, how actively or passively they respond to the change, how comfortable, empowered or constrained is their professional identity.

During analysis of interview data certain teachers' personal attributes and how they inform the encounter and enactment of changed curriculum were brought into attention. First of all, many interviewees demonstrate their enthusiasm and openness towards the change in general. Interviewees having these attributes look positively at various innovations in their work, including curriculum change, are keen on innovating themselves, '*don't have barriers*', '*like 'to play' with students*', *'everything is interesting'*. If they were skeptical about the curriculum change at the start, they were not afraid to try it and now see '*that this approach is better*'. Strong professional identity is another attribute connected with positive approach. It manifests through teachers' connections with their professional field, their proactive orientation, their educational values and commitments. Teachers are interested in their professional area, are eager to learn, enroll into higher education studies, easily reflect about their, as a teacher and as a practitioner, strengths and areas for improvement.

The fact that a major part of teachers are senior and that it is difficult to attract younger

ones was noted by several interviewees. If the latter are more open to change, the former very often want to stay in their comfort zone *('no will of doing something', 'afraid of changes', 'if I want, I do, if no, I don't', 'I reached everything', 'you need to persuade them that changes are needed')*. Others demonstrate their obedience to curriculum documents and avoid deviation from intended curriculum or experimentation *('they read very attentively what is written', 'he is always like that – lesson goal, five objectives, questions for repetition')*.

Interviewees noted how some of their colleagues were resistant to curriculum change. This resistance is clearly confined to temporality - the experience of past, present and future concerns. Teachers' resistance was due to their retrospectivity to previous working and teaching experience and translated into 'sabotaging' new curriculum ideas and trying to keep old structure and old models of their work. Sometimes this was backed up by financial reasons and fear that some teachers may lose their workload. Transition to modularized curriculum has affected many directly *('modular training requires change'*), at times putting them into conflict with their professional identity, since they were asked to work differently. Thus, it was a remarkable transformation, in particular for senior teachers approaching their retirement. Finally, some interviewees noted that in the beginning there was a lack of clarity how to deal with these novelties and what were the new requirements and the benefits of change for teachers. As illuminated by interviewees, after several years of working with changed programmes many now see more benefits than losses and are more positive towards this change compared to the past.

As seen from the quote below, some felt caught in tension between political goal of curriculum modularization and the readiness of VET institutions and themselves:

> *We, as the leaders of the training centers, have nowhere to escape. The teacher does see some issues in working with the new modular programmes, but we are required by the ministry to implement them. Licensing of the training center also depends on it ... We can no longer admit students to the subject-based training programmes, even if we are not yet fully prepared for the implementation of new curricula. (LT-R23)*

In addition to distinguishing teachers' attributes, close reading, analysis and interpretation of interviewees views revealed five attitudinal patterns which illuminate respondents' agentic orientation. The subcategories which emerged from the data are presented in the table below.

Table 11

Teachers' attitudinal patterns (Lithuania)

Attitude towards curriculum reform	Illustration
<u>*Standardized*</u> Support to unified, standards-based curricula. Trust in authority of standards and their authors. Support to the idea of standardized final exams and expressed concern that without unified, standards-based curriculum, learning outcomes will be too diverse.	*If there are standards, it means that the preparation must be the same. That's why I think that national programmes should be. And they must be as uniform as possible. And I think it should be even more detailed, that even less is left for this improvisation ... (LT-R15)* *It is very good that they originated – the national programmes. That's it, sacred. Very well. (LT-R5)*
<u>*Disciplinary - conformist*</u> Linked to the state policy of VET curriculum reform: the transition to modular training is provided for in the legislation, therefore programmes need to be implemented as specified in the legislation. Legal acts direct curriculum interpretation and implementation strategies. Proponents of this approach acknowledge that they follow the requirements of the laws, even if they are irrational.	*There are those frames where I can't do anything. I could even quote the lines... We argue, but I have someone who reads documents very precisely and says me – 'read'. (LT-R19)*
<u>*Pragmatic*</u> Reform is seen as a positive change and opportunity for teachers to improve quality, to improve theory-practice integration, to be more flexible, to make curriculum more attractive to learners.	*In my understanding, the programmes as a whole are written in such a way as to put the teacher on the track and leave him the opportunity to choose his own ways and…how to achieve that goal. (LT-R2)* *After all, a modular programme liberates me from those frames of separate topics. Sometimes I integrate five topics during a lesson. In metalworking, drawings, materials and technologies are all connected. I have just started teaching the technological process, but then I have to switch on to the materials, because I notice that there is some core knowledge for the acquisition of competence and further learning. (LT-R24)*
<u>*Creative freedom*</u> Teachers now feel freer and more empowered to plan and implement training in a more creative way.	*Here everything really depends on the teachers themselves. If the teacher is willing, able, capable, he will make use them. (LT-R13)* *For me modular it's something 'wow'... If you see that they don't understand, you can go back to the same lesson, correct it. Let's say, it is such a freedom for the teacher himself. (LT-R18)*
<u>*Skeptical - critical*</u> Doubts about the essence of modularization and their value for learners and employers as well as structure of modular programmes and their quality in general.	*I don't really understand what they are for; I don't really understand the purpose. (LT-R10)* *I don't see a difference. I'm completely skeptical about these modular programmes. Because they are not supported by evaluation system. (LT-R4)*

* Respondents might have manifested several agentic orientations

The analysis so far revealed the factors that support and constrain the implementation of curriculum. These factors, together with teachers' instructional decisions affect how and what learning outcomes students will achieve. Without a doubt, the quality of the documents determining competence frameworks and learning outcomes and their interpretation is important, but the design of these 'content' documents does not guarantee the quality of learning outcomes and the acquisition of competencies defined in these documents. This is determined by institutional structures and resources, other contextual factors and, more importantly, teachers' pedagogical activities and students' learning experiences (i.e. enacted and experienced curriculum).

4.1.3. Activities employed to enact curriculum

Exploration of how interviewees describe planning and implementation of CB curriculum have led to construction of the following categories: Interpretation and translation of intended curriculum, Creation and maintenance of authentic learning and working spaces inside of school, Coordination and facilitation of learning at real workplace, Integration of theoretical and practical training, Embedded key competences and attitudes development, Reliance on active, 'experiential', learner-centered training methods, Combination of formative and summative competence assessment and Teacher collaboration.

Table 12

Framework of categories and subcategories 'Activities employed to enact curriculum' (Lithuania)

Categories	Subcategories
Interpretation and translation of intended curriculum	Interpretation of intended official curriculum o Competencies give clear curricular structure o Modularized national programmes are easy to use o Programmes and their learning outcomes are sufficiently abstract o Clutter in the programmes content o Questioning of appropriateness of programmes structure for learners' holistic development o Some teachers feel chained by intended curriculum Adaptation of official curriculum o Vagueness of school-level curriculum intentions o Adjusting school and teacher resources according to official curriculum requirements o Adapting official curriculum according to possessed resources o Planning and scheduling curriculum implementation o Navigation between technicist and pragmatic interpretation and translation of curriculum requirements

	Construction of teachers intended curriculum o Recontextualization of recommended training content from official curriculum o Sequencing of theoretical and practical training o Development of training material o Constant revision o Deviation from intended curriculum during its enactment
Creation and maintenance of authentic learning and working settings inside of school	Reconstruction (simulation) of workplaces inside of school Engagement with authentic and meaningful production, services and clients Interaction with employers and professionals from outside
Coordination and facilitation of learning at real workplace	Benefits of workplace experience for learners' competence Familiarization with workplaces throughout programme Securing meaningful and valuable workplace learning o Setting quality requirements for workplaces and workplace learning content o Coordination and monitoring of workplace learning Limitations of workplace curriculum and workplace experience o Unwillingness of companies to accept trainees o *'Learning at workplace does not guarantee acquisition of intended competencies'* o Lack of integration of school and workplace learning experiences
Integration of theoretical and practical training	Prioritization of practical skills over knowledge Recontextualization of theory for practical training Emerging vision of single *'theory and practice teacher'* Joint theoretical and practical training by different teachers
Embedded key competences and attitudes development	Employers give importance to learners' key competences *'Vocational teachers develop these competences (and attitudes) every day'* Adjustment of key competences development to occupation by non-vocational teachers Helping learners to understand meaningfulness of their vocation
Reliance on active, 'experiential', learner-centered training methods	Supporting learning through practicing Supporting learning through group work Navigation between innovative and more traditional teaching methods Supporting learning through reflective and critical thinking Supporting learning through public speaking and presentation Application of ICT learning and learning mediation tools Instruction through sketching Supporting learning through skill competitions Individualization and personalization of learning
Combination of formative and summative competence assessment	Design of criteria to evaluate competence Diagnostic assessment of competence at the start of learning Formative and diagnostic competence assessment within modules Summative competence assessment at the end of modules Integrated assessment of key competences is latent
Teacher collaboration	Co-design of intended curriculum Collaboration in instruction and assessment Situated organized methodological collaboration Non-formal methodological collaboration Need for peer-learning and networking beyond school

4.1.3.1. Interpretation and translation of intended curriculum

As claimed by Ball and colleagues (Ball et al., 2012), education policy reaches teachers through curriculum; thus, it is important to understand how teachers perceive these educational policy representations and their influence on constructing teachers. Building on this, the research aimed to examine how qualification standards and national modular programmes are interpreted, decoded and 'translated' into school and teacher level documents and practices as their intended curriculum and which strategies are later equipped for realization of these intentions.

Interpretations of intended official curriculum

Curriculum enactment starts from encounter with intended official curriculum (in Lithuanian context it is called 'national programmes') and making meaning of what is in it. Research participants were asked to describe their attitude towards official curriculum and a significant part of interviewees underlined the benefits of modularized curriculum structure. Positive evaluations manifest through such statements as *'I really like it', 'I like it because it is concrete', 'wow…', 'it is well written, well put together', 'it is fun to work*'. According to interviewees, with competencies specified, programmes became more focused and concrete in a sense that they provide a clear structure (frames) to training and training is not overloaded with unnecessary content. A correct balance of theoretical and practical training is stressed by many. Programmes turned out to be 'simple and clear' to use, they help to connect theory and practice, training content is adequately abstract, thus teachers feel sufficiently autonomous to adjust it. In Lithuania, VET programmes are prepared by groups of education and labor market experts with vocational teachers playing a key role. Therefore, it can be assumed that such national programmes are acceptable and easily recognizable by teachers, which is also reflected in the largely positive evaluations of the current curricular model.

When turning to the drawbacks of official curriculum, some interviewees indicate that content sometimes is 'cluttered' and confuses teachers as to how to deal with it and translate it into pedagogical activities. Some question the logics of modules or even their content credibility.

> *Topics, subtopics ... Such a mixture. I don't even understand. I can't even tell. Repetitions... For example, we worked with semi-finished products and soups, and everything is finished with quality. But quality has to be everywhere. It's a little hard for me to understand those programmes. I construct it my way... (LT-R14)*

As a hairdresser you know that before cutting hair you need to perform the other procedure. (LT-R1)

A part of the interviewees misses certain content but acknowledge that due to sufficiently abstract learning outcomes they can supplement it. Others question the appropriateness of curriculum structure for developing more holistic competence and a person. Two areas, key competences development and providing broader theoretical knowledge (cognitive competence), are questioned in particular. Some feel that without broader curriculum goals, such curriculum results in preparing 'craftsmen', 'convenient employees' *(palankius darbuotojus*) or 'executers of one narrow operation'.

My impression is that a child is being prepared for the craft (amatas) and we are returning to craft school again, because there is no time to transfer for the child knowledge which he needs. They come up to school with the idea 'I'm a welder - I'll just weld'. But you need to be acquainted with the materials, to draw and read the drawings. (LT-R24)

Adaptation of official curriculum

Although legal acts stipulate that VET institutions should adapt national official curriculum into school curriculum according to the labor market or learners' needs, only a few schools use this possibility. Field research and interviews revealed that the school curriculum is most often identified with the national curriculum, some schools do not even have such a curriculum, or it completely mirrors the national one. When searching for the reasons for such a passive attitude towards school-level curriculum several assumptions can be made. First, interviewees' reflections lead to questioning currently vague intentions of school curriculum and the ambiguous relation between official national and school curriculum *(You know, we don't see the meaning in school curriculum. Why? Because it repeats national curriculum or teachers' thematic plan, LT-R7).*

Secondly, in the previous subject-based curriculum system, schools had the opportunity to develop programmes independently what resulted in significant variations between the same title programmes and this approach has been criticized. By prescribing a modular structure and learning outcomes with a recommended list of learning themes present official curriculum is a balance between very detailed and abstract information with real 'translation and adaptation' happening in teachers curriculum documents (elaborated in further section).

The third reason lies in a weak social dialogue between schools and companies at the local level, when teachers and institutions do not have sufficient motivation and inspiration to

change something in curricula due to the lack of employer involvement and their passive expression of demands for preparation of future workers.

> *Now, of course, there is a lot of talk about meeting the needs of the region's labor market. An opinion from employers is necessary on what the programme should include, but unfortunately there is no initiative from them. And why? Employers say unequivocally: 'We are not familiar with the requirements of your programmes, we are not familiar with the standards. For us, production is paramount. Whatever you do, for us is fine'. It is up to us to decide what the job market needs today, because only in exceptional cases employers get involved. (LT-R23)*

Those interviewees who explained the adjustment process, were talking either about adjustment of own resources to implement curriculum *(We check our resources, we send our staff to training, LT-R23)* or amending programme structure and content according to resources and facilities already possessed *(I think that we even haven't sat down and reviewed school curriculum…. Well, we maybe a little adjust it if we don't have possibilities to teach students for one or another technology in practice here, LT-R2).* This is a peculiar phenomenon since the school curriculum design is driven by own resources and not the needs of learners or local employers.

> *At our own initiative we're not able change it a lot, because they are prepared at the national level. All the changes occur in teachers' didactic plans. (LT-R19)*

Thus, 'the adjustment' of intended curriculum is often limited to planning and scheduling programme implementation and preparing curriculum implementation documents, demanded by legislation. According to legal acts, schools need to have in place a programmes implementation plan, a training plan, a training schedule and a template for integration of key competences into VET programmes. From interviews it became obvious that preparation of these documents is bounded by certain 'interpretation and translation' rules, namely, keeping theoretical training and practical training ratio at 30% vs 70%, permitted adjustment of training programme to the needs of labor market by 15% and dedicating not less than 10% of total training time for key competences development.

In overall, planning and scheduling is regarded as a particularly 'labor-intensive', crucial stage *(All the quality depends on the start – how you lay down everything, LT-R11).* The planning and scheduling incorporate choices about sequence of modules, choices about 'most suitable' teachers or their teams to deliver modules, foreseeing the role (if any) for key competences' teachers, coordination of teachers' workload, workshops occupation and students flows. Many interviewees notice that planning of teaching activities is led by the legitimated 'theory: practice ratio' as this proportion guides calculation of hours dedicated for theoretical

and practical training, and consequently decisions on training organization, although some admit that separation of theory and practice is no longer feasible or that this ratio does not make sense to them.

> *You see, the requirement of 30% for theory… I will say that we sometimes a little… It is important to apply this ratio for a whole programme, but for some modules it would be just boring. <…>. But legal acts require that this share would be kept. (LT-R17)*

Planning also includes preparation of 'a table' for integration of key competences development into VET programme modules. The template of the table is provided in a legal act and all respondents mentioned that corresponding tables were prepared in their schools, '*as required by legislation'*. However, as demonstrated by the excerpts below, the requirement to integrate all key competences into vocationally oriented modules and allocate 10% of training time for them is hardly achievable and some schools demonstrate a more selective approach and jointly decide on prioritizing certain key competences:

> *It is indeed very difficult to integrate some key competences into certain modules. It is difficult to connect them to a concrete theme and, therefore, for some competences we allocate more time, for others less. (LT-R15)*
>
> *We allocate hours according to a document: equally, neatly, ten percent. There is a wish to deviate and sometimes we do so for the sake of competences quality. (LT-R19)*

In some cases the integration of fragmented clusters of key competences in schools' training schedules seems artificial (for example, 'Labor law' and 'Communication in mother tongue' in the module 'Cooking, presentation and quality assessment of deserts'). Whereas for others this process is much more complicated intrapersonal and interpersonal pedagogical negotiation. From interviews it was evident that negotiations regarding key competence development are not just a simple technicist preparation of a 'table'. In contrast, it requires in-depth considerations on how to recontextualize key competences development within a module. The interpretation and translation actions of teachers in this respect can be described using Basil Bernstein terms of knowledge 'recontextualization' processes (Bernstein, 2000 cited in Hordern, 2014). Planning of key competences development involves interpretation and translation of scarcely described expectations for key competences development in national curriculum recontextualization and relating of own or other teachers' knowledge to programme and key competences discourse.

Since discourses of key and occupational competences are distinct and teachers are called to cross their boundaries, this change does challenge vocational teachers and teachers of key competences and pose recontextualization problems (Barnett, 2006). Some interviewees

demonstrate a critical stance and raise concerns that 'key competences have dissolved' or that in the current curriculum model learners are confused to comprehend what they learn *(You know what they don't understand? The module is called 'Cooking', but one teacher comes, another comes and they don't understand why they need to learn those things. 'Soups and economics' or 'IT'. Why is it still called 'Soups'?)*. The citations below further illustrate the tensions between interviewees beliefs and legal acts requirements:

> *Well, when there is a demand to integrate key competences, we need to demonstrate how we do it. We have that standard table with all those competences, two hours each. And we decided that entrepreneurial competences for us is a priority and we increased it to three hours. This way we managed to meet the required percentage. This is formally implemented. (LT-R23)*

Regulations governing curriculum enhance instrumental thinking of teachers in interpreting and translating prescribed curriculum. Still, some participants of research, while acknowledging that there are gaps between curriculum and legal acts requirements and the reality of their implementation, exercise their agency and note that they search for pragmatic, feasible solutions while 'maneuvering' within these requirements or by taking a risk and breaking them, although feeling the shadow of external audit and control *('We search for way out', 'Sometimes we cannot fulfil the sequence of modules', 'You sometimes take a risk. You cheat your manager or not').*

Construction of teachers intended curriculum

The main curriculum document for teachers becomes their thematic plan, thus, construction of this type of intended curriculum is a manifestation of the official curriculum interpretation and translation processes ('*All changes occur in thematic plans')*. It is in these plans, where teachers practice their agency and encode their intentions, bring in and foresee innovations, introduce regional or learners' specifics. Usually, the plan is made for a whole module, but novice teachers may be recommended to prepare plans for one or a block of lessons. A minor part of teachers argue that official curriculum is sufficiently detailed, doesn't need further elaboration and serves them as a thematic plan ('*I keep old versions for the future')*. A few interviewees are even hesitant if thematic plans can deviate greatly from official curriculum. Still, some feel that they are too 'chained' by official curriculum and one respondent had a critical opinion that thematic plans are not needed at all and that they serve as a control mechanism and diminish teachers' creativity and initiative.

Teachers reflect that their main interpretative work concerns contextualization of given learning outcomes through recontextualization of themes recommended in official curriculum.

This process is not a simple adjustment of curriculum requirements to context, it involves a selective appropriation of themes by 'expanding' or 'squeezing', reassembling them, and supplementing them with their own knowledge and experience of authentic practice. This is the space where the legitimated 'adjustment' of official programme by 15% happens, though none of informants could rationally explain how this percentage is calculated and some admitted that these changes are greater *(Frankly, I change more, LT-R14)*. Official curriculum content is 'expanded', 'made more concrete', supplemented with missing information or emerging technological developments of which teachers become aware during professional development or contacts with labor market actors. In these processes teachers actions demonstrate appropriation and transformation of vocational knowledge, rethinking of *'what we will do, how we will do and what we will achieve'* (LT-R13). Interviewees stress the importance of their own conviction of what is necessary to achieve learning outcomes and competence *('I prepare it according to myself', 'I translate it for myself', 'it is better for myself if I pass it through me')*. Thus, for some it takes courage to deviate from official curriculum (*If you're not afraid and can protect yourself 'I want and I will teach this way, I think that this is needed', then everything is fine. <…> You shouldn't be afraid to defy what is written in programme, LT-R2)*. Some also rethink how they can enact the requirement of key competences development in their modules. In these interpretations and translations teachers enjoy their agency, freedom and autonomy as seen from excerpt below:

> *There is enough freedom, because these themes are so broad, and you can put under them whatever you want. (LT-R15)*

Next, teachers make decisions on sequencing of theoretical and practical training, time allocation for curriculum pieces, and on actions to integrate key competences into the modules.

> *We receive that programme; I print out all those standards. I receive what I must teach, which modules are assigned to me, prepare thematic plans, assemble credits, hours. And consider practice, theory, psychomotorical and cognitive results. (LT-R1)*

Preparation of instructional materials is also a part of intended curriculum translation activities. Teachers decide on a format and content of training material, such as notebooks, textbooks or text sheets helping to present theory in a modern and learner-friendly way, to better connect theory and practice and keep learners motivated.

Many notice that this plan is 'alive organism', that throughout practical enactment they make notes (and are encouraged by their administration to do so) on what works and what doesn't as planned. Usually at the end of school year the plans are revised, and these observations are integrated. Some schools practice a more systemic reflection and revision

(Somewhere in spring <…> teachers have to gather collectively, to sit, discuss and modify or provide some proposals how it would be possible to improve that thematic plan for the upcoming year, LT-R3). The revisions consider feedback collected from employers about curriculum limitations, out-datedness, learners' competence gaps and reflections from learners.

Interviewees reflect that a gap between intended and enacted curriculum is inevitable and that teachers must be ready to flexibly react 'on the run' *(koreguoti eigoje)* according to the 'state' of class, individual learner factor, external factors that bring in changes into teaching process, and adjust their pedagogical practices. Some, under new curriculum structure, feel freer and more flexible in planning and enacting curriculum, 'hosts of lesson' as characterized by several teachers.

> *You cannot really follow what is written. It doesn't work. Because everything moves forward, forward, forward. Learner is a human. The human factor - one is very fast, the other needs five times to do something. And to consolidate what you have passed, sometimes not one but several lessons are necessary … (LT-R24)*

4.1.3.2. Creation and maintenance of authentic learning and working settings inside of school

Interviewees stressed that for learners' competence development it is important to create learning spaces that would allow to learn and practice inside of school under conditions close to the ones of real workplaces. To increase authenticity of learning it is organized in the environment representing real workplaces, encompassing performance of authentic works (construction, bricklaying, painting), manufacture of real products while using materials, tools and equipment similar to the ones in companies and provision of real services to real customers. Learning happens while working and leads to actual and meaningful production, the appropriateness and quality of which can be examined by a learner and a teacher. This is to be achieved gradually – firstly, learners start from simple, simulation-based tasks (practicing haircutting on mannequins) and gradually move to more complex authentic tasks (making haircut for client from outside).

Authentic learning-working spaces are supported by laboratories, which are meant for practicing initial skills, such as handling food preparation gadgets, and theory cabinets, which seem to be increasingly integrated with practical training laboratories / workshops. Many stress that with the establishment of sectoral practical training centers it became easier to secure authenticity of learning. These centers serve students from other schools and some interviewees noted that they would like to have a better access to them. Sometimes, sectoral practical training centers are prioritized against a real workplace since they have 'better' conditions for

accomplishment of richer assignments, as compared to workplaces with narrow specialization.

> *In our sectoral practical training center we have all necessary workshops: hydraulic, electropneumatic, electronics, automated systems, electrics. For almost every module, there is equipment tailored to each of these competences and there is a laboratory or workshop. And all that equipment is very close to the real equipment. Slightly less, slightly… But all the principles, schemes, programming languages, in terms of programming the controllers of robotic systems, it is all according to the same standards applied in the industry. After our laboratories, they are practically ready for work. (LT-R27)*

Schools are particularly favorable towards 'hybrid' learning venues (Cremers et al., 2016), however not all possess them. Such venues include canteens, shops, hairdressing saloons, car repair workshops and similar facilities, operating in schools, where students learn and work under supervision of their teachers. They offer unpredicted meaningful and powerful work situations, enabling learners to construct broader knowledge and gain more in-depth skills, develop a speedier reaction and communication skills while interacting with clients from outside.

> *And we are happy that we have a beauty studio, where students do practical training with clients. This is a huge experience for children... Because clients come from street, and they communicate with them. Students already know what they can talk, on which topics, what is better not to tell. (LT-R6)*

Schools try to overcome passive employers' engagement (Sub-category 'Economic and social context') and demonstrate proactive position in interacting with employers by 'building and nourishing relations', organizing discussions, collecting their demands and feedback, planning internships (see category 'Coordination and facilitation of learning at real workplace'), addressing them on curriculum planning and implementation matters *(I build relationships, I try to keep them. We become work friends, and they help to shape curriculum. I can call them without fear. Not to write formally, but to call and ask: 'Is it still worth teaching, or something has changed? What new things are you experiencing?', LT-R5)*. A flavor of authenticity is passed by professionals from outside, employers, suppliers who visit schools to present learners professional field, emerging innovations in technology or materials or, simply, invite learners for practical training. Sometimes these practitioners are former students.

Interviews also illuminate how teachers themselves become 'agents' of workplace experience. They introduce learners to realistic work environment by narrating their own professional experience from workplace, reporting about technological or product innovations from training seminars, analyzing occupational situations.

4.1.3.3. Coordination and facilitation of learning at real workplace

Lithuania represents a strong case of school-based VET system with only a small share of learners enrolled in apprenticeship (STRATA, 2019). Nevertheless, learning at workplace in a form of internship (*praktika*) at least in the last year of studies was always a part of curriculum, however under modularized curriculum structure the potential period to be spent at workplace was drastically decreased from 320-600 hours to 110-220 hours and now is concentrated in the final programme module. Interviewees acknowledge the importance of workplace learning for students, and some do not limit it to the final module, however sequencing of internship within other modules is a rare practice due to administrative difficulties and employers' attitudes.

Workplace experience is seen as an opportunity to try out and consolidate knowledge and skills acquired in school environment, to engage into performing authentic tasks within work situations which cannot be modelled in school, to learn and practice with more authentic tools and equipment and compensate for limited school resources (*a workshop is a workshop*), to observe real authentic work processes beyond school curriculum (*how quality control and logistics chain operates in reality*) and, finally, to get closer to the 'community of practice' by feeling the atmosphere of the workplace, '*entering the rhythm*' and getting acquainted with the work culture. Interviewees reflect that while being in the workplace learners have more opportunities for developing key competences and attitudes such as communication, cooperation, ability to cope with new, sometimes stressful, situations. For some, the task of workplace learning is preparation for the final exam.

> *This exit works very well to see a completely different picture in the saloon. In school we behave one way, out there is discipline, requirements are absolutely different. They see how the employee is dressed, how he looks. (LT-R1)*

The interviews also signal that availability of workplace learning becomes a motivational factor for students to learn and fill a noted gap between current level of knowledge and skills and the one of workplace experts and to pursue career later, inspired by workplace experiences.

Random familiarization with occupation and workplaces happens throughout the programme. The site visits are a common practice targeted at simple observation of work processes or meeting with practitioners and exploring occupation from different perspectives and '*not only from beautiful side*'. Additionally, schools from personal services sector univocally confirm that they frequently organize educational visits to social care institutions for providing beauty and hairdressing services for persons in need, such as seniors, patients, children. This way learning experience is enriched and the lack for authentic vocational situations within school is compensated.

In order to secure quality of workplace experience educational institutions selectively choose companies based on their resources, positive attitude and previous cooperation experience, prepare and negotiate with company an internship programme with practical assignments. Internship is legitimated by concluding an agreement between a student, school and employer and nominating responsible persons from school and company to supervise learners. A school representative, an internship manager, is expected to regularly visit workplace and keep in contact with trainee and company to solve all emerging issues. To follow and report on the progress and evaluate trainees' performance, companies fill in internship diary, students prepare internship report and present evidence on their workplace learning.

> *We choose companies which certainly work. Cafes, known restaurants. For example, some children want to do practical training in a kindergarten or a canteen. We do not recommend or allow it, because those specialize in a narrow production. (LT-R13)*

However, many question appropriateness of workplace curriculum and voice concerns about depth and quality of workplace experience as evidenced by a quote below:

> *It depends on where they get in. I would presume that ten percent are really lucky, they learn new things and receive a lot, much more than school can give. But unfortunately, 80-90 percent go to a basic level pizzeria, as an example, where they can't guarantee that competence and you see that when they return for final qualification exam, their competencies are already a bit deteriorated... Because they had no interest there, they only had to get job done. Let's face it, they don't have time to train students and 'play' with them. But, of course, there are very good places. (LT-R10)*

Poor quality of internship is attributed to general attitude of employers and their unwillingness to accept trainees (*it is not our problem, it is a problem of production process where there is no place for trainees, LT-R2*). Interviewees note the lack of companies' social responsibility and awareness, demotivating administrative burden, paperwork and labor market composition, when, for example, many service workers work individually, have their long-term clients and find it problematic to dedicate their time and knowledge for trainees or even distrust them. A problem is that not all employers agree to follow a planned internship programme (*we don't have measures to force them, LT-R17),* are not motivated to provide learners with diverse vocational situations or sometime delegate them auxiliary tasks that require lower-level knowledge and skills.

Short duration and inflexible sequencing of internship is questioned, although some interviewees admit that due to current modular structure and administrative barriers a shorter internship works better for employers and learners, especially if a school can guarantee

sufficient training resources inside of school. Due to these reasons, learners fail to contextualize and transform knowledge and skills gained while learning in school in new situations. Also, VET centers have difficulties in monitoring the quality of internships, as supervising vocational teachers do not have enough time to monitor the practical learning of all students. Interviews also revealed somewhat ignorant attitude to the internship programme, thus diminishing the opportunity to comprehensively negotiate shared expectations for all sides involved and securing access to diverse meaningful vocational situations and experiences.

4.1.3.4. Integration of theoretical and practical training

As already noted, closer integration of theory and practice is identified as one of the key innovations and the essence of the curriculum reform *(The essence of that reform is that everything must be integrated, everything must be integral. And then knowledge will have its place and its meaning, and practice will be as it should be - based on knowledge, LT-R28).* Modules are oriented at concrete work processes and competence necessary to master them, thus interviewees assess that such a model strengthens theory and practice relationship. The 'integration of theory and practice' for respondents firstly means connection of theoretical and practical training in school environment, selection and appropriation of knowledge for work processes taught and maintaining a close relation between taught knowledge and practical demonstration of work processes.

When reflecting about pedagogical strategies equipped to connect theory and practice, interviewees acknowledged that curriculum change had an impact on their teaching approaches and even professional identity and demanded for new knowledge and practical skills (see also section 4.1.1.). During interviews a narrative of occupationally contextualized knowledge clearly prevailed. Knowledge or theory (these two categories are used interchangeably) in VET curriculum covers diverse types, meaning that teachers become responsible and must possess themselves different kinds of knowledge. Curriculum includes academic disciplinary (scientific) knowledge, which is to a lesser or greater extent recontextualized (reorganized) for vocational area and curriculum purposes, rules and laws from professional literature, principled and procedural (situated, tacit) knowledge of work processes, knowledge of tools and materials, knowledge of new technologies and innovations emerging in occupational area and knowledge, underpinning key competences. Narrative on 'pure' academic disciplinary (scientific) knowledge is present to some extent in interviews of engineering and construction programmes representatives. Just two interviewees defended the position that students need broader, disciplinary, knowledge than provided now and that the mission of conveying this knowledge

is to prepare learners for life beyond their occupation and for career progression, so that they would not position themselves with 'skilled labor'.

Another important observation is that practical skills are clearly prioritized over vocational knowledge and that it is believed that students only need concentrated, specialized vocational know-how for accomplishing professional tasks. In line with legal acts and methodological curriculum development documents respondents stressed that they follow a recommended ratio of theoretical training and practical training (30%:70%) what contributes to downplaying the role of knowledge with a few respondents preferring for further decrease of theoretical training volume (*in these programmes a lot of theory hours are given, this is a small minus, LT-R14)*. Thus, referring to the documents, this devaluation of knowledge in VET curriculum starts already at macro level. Some argue that knowledge is subject to change, it rapidly becomes outdated and therefore it is more important to develop learners' learning to learn attitude and to equip them with information search skills and '*not to put everything in the head of learners, LT-R22*'.

Many refer to the attributes of vocational pedagogy which, according to them, implies that students best learn while engaging with practical work and execution of practical assignments by directly applying what they learn into practice. When progressing in learning they naturally start referring to acquired knowledge to complete tasks in less predicted situations and to solve emerging problems in quality and timely manner and connect knowledge, skills and attitudes in an integrative manner.

Pedagogical models of integrating theory and practice fall under three broad categories summarized in the table below.

Table 13

Models for integrating theory and practice (Lithuania)

Subcategory	Illustration
Gradual integration - theoretical training followed by practical training Clear frames of theoretical and practical training, introductory theoretical part (*instruktažas*), during which a teacher presents theoretical material, is followed with the practical demonstration of skill by teacher and execution of work operations and tasks by learners, concluded with the learners' reflection.	*I convey information using a projector, I show slides, I underline the core things, I show videos, and when we come to practical classes, in our hairdresser cabinet, I demonstrate all that information in practice. We repeat everything, they bring her clients, if there are no clients, we use mannequins and practice on them... (LT-R16)*

Complete integration of theory and practice – combined theoretical and practical training Combined demonstration of the execution of work process and explanation of related and underpinning theory. Learners observe teachers work and then perform work operations themselves under supervision and guidance of teachers. Following this model, some schools have removed theory cabinets and transferred all training to workshops.	*We dedicate more attention to practical training, learning through practice, through trials, there are stands, these are models, real equipment. And all the theoretical knowledge is presented in parallel. (LT-R27)*
Different teachers are responsible for theoretical or practical training segments Teachers tend to specialize either in theory or practice. They cooperate in planning and coordinate different segments of training. The model is adopted by those, who traditionally positioned themselves with 'theory' or 'practice' teacher.	*Let's be honest. I know the process, but I even tell students that they will work better than me in a month time. <…> I always start a lesson with them by asking what they did last time in the workshop. Then I can adjust on what they did. We keep in touch with the practice teacher all the time, we talk about that group. I know how they are doing. I try not to be distant from what they do in the workshop. (LT-R24)*

Interviews disclosed an interesting transformation when VET providers are increasingly supporting the model in which theoretical and practical training is delivered by one teacher. It is already practiced in many schools while some schools declare this intention as seen from the quote below about a persisting problem of theory and practice divide:

> *We are striving for it because, in fact, there is often no conversation. We had made observation of practical training ... Well, the practitioners are not aware of what the theorist taught, and the theorists work on their own, without knowing what the practitioners will teach. It is perhaps because of lack of communication. They should sit down and discuss. But even after communicating, I think they are still watching their own field. I would like that theory could be taught in a workshop. This is what our ambition is for today. (LT-R23)*

Thus, the paradigm of 'theory-practice integration' brought by curriculum modularization is changing the profile of vocational teachers specialized in either provision of the theoretical knowledge or practical skills development. This change helps teachers to build harmony and balance between theory and practice and to ensure interdisciplinary connections. It also motivates them to grow professionally, but at the same time raises new demands in terms of work organization and competences profile and provokes resistance to curriculum change for some of them.

4.1.3.5. Embedded key competences and attitudes development

Legal acts call for 'integration of key competences development' and vocational teachers feel that delegation of responsibility for their development is one of the recent changes brought by reformed CB curriculum (as described in section 'The changes implied by CB curriculum). Informants' reflections about the development of key competences point to a broad and diverse understanding of these competences which exceeds a list of eight key competences defined in EU Council recommendation. Interviewees also note that employers give a high importance to these competences *(But basically what they miss from students is key competences. This means responsibility, cleanliness at work, culture, duty, responsibility, knowledge of languages, the ability to find the necessary information, LT-R3).* Importantly, several teachers underline how crucial is that learners would feel meaningfulness of their vocation, would value it and would start building their own professional identity *(I like to stress that it is the most beautiful occupation. Because I think that they should love it, LT-R15).*

Schools in principle apply two models for key competences development or use a mix of these models. Key competences are either developed solely by vocational teachers or, in addition, teachers of key competences or general education subjects are invoked for this purpose. In any case, teachers reflect that key competences are developed every day, 'in every lesson', sometimes unconsciously, without realizing it *(Every day all this is reminded, especially communication, cooperation, work. Help to each other, such things are reminded every day, LT-R10).* They are part of introductory module, site visits to actual workplace, international mobility visits. Teachers also reflect that at first they were skeptical, confused to take over key competences development, but after preparing intended key competences development 'template table', communication with peers or with management, they agree that to a certain extent development of key competences and occupational competences is integral and they develop them '*as much as their competence allows*' (LT-R25):

> *We saw that we were talking about entrepreneurship all the time. (LT-R14)*
>
> *We tell our teachers: 'Open and look at competences, isn't there citizenship indeed?' And if no, nobody says that it must be written down. When you're conscious to environment, this is a citizenship competence'. (LT-R23)*

These quotes indicate the significance of teachers' tacit knowledge of key competences and their own key competences as well the need for open interpretation and translation of intended curriculum goals.

Key competences development methods are hardly categorizable and sometimes of 'non formal', 'tacit' nature, employing 'a talk', 'reminding', 'underlining' as noted by some of

respondents. The importance of shaping responsible attitudes to work and profession is emphasized and a lot of attention is paid at how to organize workplace, to use work resources responsibly, to follow work discipline, to communicate ethically with clients and colleagues.

In cases where key competences are developed by non-vocational teachers of key competences or general education subjects (entrepreneurship, languages, IT, etc.), the content of training is contextualized to occupation. It emerged that the schools' administrations particularly encourage the connection and adjustment of key competences development assignments to the modules and are 'gate keepers' of integrated key competences development.

> *And we ask teachers of key competences not to teach everything, but to select and to respond to that module. Until the table of key competences development did not exist, everyone was moving his own direction, and with that table everyone started to think. Because if I take a teacher who is a specialist in his occupation and ask him to start speaking a foreign language or to teach a language culture, we will never achieve quality of that competence. We found opportunities to integrate other teachers within the modules. (LT-R19)*

However, judging by the statements of respondents, development of key competences is one of problematic areas. There are schools which consider the process to be successful. However, a part of vocational teachers confess that they don't have necessary background knowledge (entrepreneurship is stressed in particular) and find key competences development a challenging role change. The other part of respondents questions appropriateness of curricular structure for key competences development and even propose to return to dedicated modules of entrepreneurship, foreign languages and IT (see sections 'Interpretations of official curriculum' and 'Adaptation of official curriculum'). Summarizing the situation and referring to the reflections about planning of key competences development it can be judged that development of key competences is often technically and fragmentally 'embedded' into training process and lacks systemic and integral character.

4.1.3.6. Reliance on active, 'experiential, learner-centered training methods

In line with other authors who analyzed vocational pedagogy (Cedefop, 2015c; Lucas et al., 2012; Unwin & Huddleston, 2013), interviews proved that teachers give the priority to active, practice-based, 'experiential' learning methods that enable better connection of theory and practice and practical training of competencies. The categorization of methods that emerged from data is presented in the table below.

Table 14

Categorization of training methods (Lithuania)

Category	Description
Supporting learning through practicing	Incorporates experiential, authentic, problem-based learning. Students learn by executing work operations and accomplishing practical tasks with authentic tools and materials. Practical work is closely related to knowledge, it requires application of accumulated knowledge and searching for necessary knowledge, constructing of new knowledge (*touch and feel, think, respond, comprehend what they do, LT-R18*). Typically, at the start teachers present theoretical material, illustrate it with visual aids, demonstrate work operations, learners observe and later repeat work operations under teachers' guidance. Sometimes, initial skills are developed and 'practiced' at 'laboratories'. As learners progress, their performance becomes more independent. Diverse vocational situations are designed, technological processes (both visually and alive) are analyzed, diverse problematic work situations are solved. Learning is organized in authentic learning situations (setting-activities-products-clients), learners are provided with increasingly complex situations where they must make decisions, find and correct errors. Learning has strong elements of experiential learning, as theorized by Kolb and encompassing experiencing, reflective observation, conceptualization and meaning making and acting (Kolb, 2015). Through transformation of experience, knowledge is constructed. *They need to be able to combine several things into one, to evaluate and to act. They need to be able to calculate. They must be able to choose. They need to be able to evaluate and make a decision. This comes largely with practical skills in the workplace when you work - learning from your mistakes. But for this he must have some theoretical knowledge. (LT-R2)* *I am more and more convinced that modern youth want to smell, to touch, to do. Therefore, I always try to work with such methods. (LT-R18)*
Supporting learning through group work	Students learn in peers or work in groups, engage in group discussions, role-play; teachers facilitate situations when more advanced students help, explain, consult weaker ones. *Suppose one is very capable of performing independently, and the other understands less and not so quickly. When such students are working together, the more experienced and advanced one trains his or her friend and at the same time deepens, strengthens his knowledge. It also works in learning in groups of two or more. (LT-R1)*
Navigation between innovative and more traditional teaching methods	Teachers have a broad repertoire of teaching methods. To keep learners' interest and motivation, particularly, in theoretical material and knowledge, they search for more interesting, innovative teaching methods, design innovative teaching materials, creative and challenging practical work assignments, stress the importance of learners' creativity growth, organize site visits. Teachers search for how to activate learners, for example, by allowing to decide on the content of learning (*search for new recipes*), create learning assignments and theoretical tests for peers. But teaching of vocational knowledge also employs traditional frontal instruction (lesson), learners' (independent) work with manuals, text analysis, knowledge

	testing. Teachers try to justify the usage of more traditional methods in working with less advanced and motivated students. *The more diverse those methods are, depending on the topic, on the competence, the better. It is not possible to stick to one method, because in one case one thing works, in another case another thing works. (LT-R28)* *It is necessary to adapt to the audience. And if, let's say, the audience comes and you see that they're in the mood, 'I'm not interested in you here', then you apply the most uninteresting methods. (LT-R2)*
Supporting learning through reflective and critical thinking	Students are encouraged to reflect on how they accomplished tasks, what they succeeded or failed at. Reflection also includes remembering and considering already accumulated knowledge / experience, questioning why technological processes take place in one way or another. Reflection can take place after each task ('*we discuss')* or more systematically at the end of the lesson / session. Reflection helps to memorize / consolidate knowledge. Teachers recognize the importance of assisting the student to self-assess, since not every student is capable of this. Teachers' role of mentor-consultant is emerging. Elements of critical thinking, when students are invited 'to think', 'to creatively solve problems', 'to select', 'to evaluate and take decisions' are also observable in teaching strategies. *We give them such small assignments of self-evaluation: what have you done wrong in talking with client? What did you talk? Were all topics appropriate? (LT-R6)*
Supporting learning through public presentation	Students are encouraged to publicly present their theoretical or practical assignments, to publicly perform work situations. This serves for developing communication and career management skills. *I promote talking, presentation of practical or theoretical assignments. (LT-R1)*
Application of ICT learning and learning mediation tools	Teaching is aided with digital tools, slides, *Youtube*; training is organized in Moodle or other platforms; electronic diary, social networks (Facebook groups), cloud storage are used for mediating training process. Teachers design online / distance learning content. Computer programs and data platforms (like AUTODATA) are part for training. *If I find a new program I try to install it. We now have a smart board in the classroom. It works very well for me. I can drop the slides, draw, I can turn on the film. It allows me to convey more for them. At the same time, they get more diverse information. I don't like 'dry' text. (LT-R24)*
Instruction through sketching	Learning is supported through reading, creation and testing of schemes, sketching of technological processes. Applied in engineering, construction programmes, but also commonly used in hairdressing. *One thing is to assemble, another thing to understand, to read, to create pneumatic diagrams, to make simple diagrams, because while drawing they learn to read those diagrams. For example, he makes it on a computer, goes to the stand - executes in practice. This way he acquires (competence). (LT-R4)*
Supporting learning through skill competitions	Participation in school level, national or international skills competitions helps to develop both, occupational and key competences (communication skills, speed, resilience, intercultural communication). *I apply it in teaching process too, we organize it and its very interesting. I also allowed students to select a peer – a Portuguese or a Belgian 'chef'*

	and without knowing it they had to prepare everything within an hour and to cook in two hours. (LT-R9) *Many competencies we can develop with them. Creativity unfolds, and work, and speed, and commitment. They develop significantly. We have competitions in every module. (LT-R1)*
Individualization and personalization of learning	Teachers use personalized approach to every learner, and take into account learner attributes, their knowledge level. Individualization of training is necessary due to diversity of learners (age, education level, motivation, experience). *Students in one group are very different, their understanding is different, motivation and everything. And then you have to be very flexible with each, adapt, differentiate tasks and almost to come up to everyone. It's like individualized training. (LT-R1)*

As seen from this categorization, learning through practicing in authentic setting with authentic training resources is considered to be the core principle of vocational teachers' pedagogy. Execution of work operations is supported by learners' knowledge and ability to connect knowledge and practice and their capacity to make decisions, to act independently, 'to judge'. CB curriculum implies a holistic learning cycle: induction to work process, execution of work operations, evaluation of outcome. It is supported by three overarching pedagogical principles: individualization and personalization of learning, facilitation of group-work and supporting learning through reflective and critical thinking.

Interviewees usually refer to active, experiential, authentic, problem-based teaching methods, however teaching of vocational knowledge also employs frontal instruction (lesson), independent work with manuals or text analysis, knowledge testing. There are indications of the need for more dynamic 'innovative' methods, which are more active, experiential, problem-based. These methods help to keep learners' interest in what they learn and help to acquire the needed vocational knowledge with less effort and resistance. Teachers also increasingly design training so that to force learners to think reflectively and critically to make judgements. In the research, invoking and developing students' creativity was regarded as a teaching principle, but teachers also believed that creativity as a personal attribute can become the source for specialized vocational knowledge while working. Creative, innovative teaching methods are cited to work well for this purpose.

4.1.3.7. Combination of formative and summative competence assessment

Interviews pointed to the importance of teachers' decisions about competence domains in their evaluation strategies. They allowed to sense that since national curriculum provides rather general criteria for competence assessment, it is up to schools collectively or for teachers

independently to plan and execute assessment of competence *(Each teacher predicts in long-term planning how many marks there will be for that topic. Or maybe that topic will not be assessed and will be integrated, LT-R27)*. Teachers recontextualize criteria from official curriculum by concretizing them, elaborating assessment grid *(for mark 10, all tasks are executed, the meal was decorated, aesthetically, creatively, LT-R14)* and creating competence assessment assignments. Specifications of competence assessment criteria are considered important for learners. Teachers see them as a kind of 'medium' in communicating these specifications for learners (*They sign, familiarize with criteria on the first day of September, read what they need to do, how much can get for doing this or that, LT-R1)*. Some schools have elaborated a competence assessment strategy with criteria designed in teachers' teams (*We prepare those criteria jointly. If we argue, we say that teacher has the right to change them by ten percent, LT-R25*) and assessment procedures reviewed collectively.

Legal acts stipulate that the introductory module should include a diagnostic assessment of learners' competencies, however, not all teachers realize this in practice. The main reason behind it is the belief that learners at the start of their learning have very few skills / knowledge on which to build their competence. However, as seen from the first quote below, some teachers clearly demonstrate that this provision of legal acts can be applied as a valuable method of inducing learners into occupation and connecting their previous experience with new knowledge and skills. In subsequent modules initial diagnostic assessment seems to be commonly applied.

> *We usually give a hands-on session. It is called 'My first job', 'My first hairdo', or just working with tools. They have to form a hairdo, and through that we see a lot. It can be ordinary work, maybe work with scissors or some other device and we can see how much one is capable of. But that introductory assessment is often a deception. <…> But it is still needed, we see who has the hands, who needs to put more work in, who is creative, but maybe he's having some difficulties. It reveals very well. (LT-R1)*
>
> *We have the first session at the beginning of each module, we have agreed in methodological commission that there is so-called introduction into the module <…>. And during that module the teacher discusses the competencies that the students already have: what modules they have passed, what equipment they already know, what work they have done, maybe someone has personal experience there - already working somewhere in the company or helping someone in the summer, or a friend, or helped his parents and already knows some of the works in that area... (LT-R3)*

It is a common practice to combine formative and diagnostic competence assessment in the course of the modules. Formative assessment incorporates discussion and feedback to a student

on his learning, outcomes and errors observed, questioning his motives of performing one or another way, learners' motivation support and encouragement, facilitation of self-assessment and reflection (see also category 'Supporting learning through reflective and critical thinking'). At the end of each module, hours for learners' counselling at the disposition of teachers may be also used for formative assessment purposes. Analysis of schools' curriculum process documents revealed that application of formative assessment is legitimated by stressing that it should be a part of every lesson. However, formative assessment enactment is not so smooth for everyone as voiced by one respondent:

> *As I've observed lessons this year, I see assessment as a problem, because teachers imagine assessment as a test or an exam. And when you start talking that there are other ways to assess, often it's new to them. <...>. We have very nice examples, but very often 'I do not assess it in this lesson, because, for example, four lessons will be on the same topic'. Fine, maybe do not write grades, but assessment is still needed. Talk to the student, there should be an assessment in each lesson. Some teachers surely do it, but sometimes the theoretical part of a lesson ends without assessment. This is not how it should be. At the very least, student need to get feedback. (LT- R7)*

In intermediate or final diagnostic assessment various assessment methods are applied: it can be tests or more creative tasks (prepare a report, create a recipe), demonstration of practical tasks to assess both, practical skills and capacity to apply knowledge, independent work, portfolio creation. Such an assessment is accompanied by formative assessment. Theory : practice ratio (30%:70%) is observable also in the assessment domain with grades for theory accounting for a smaller share compared to the ones for practical part. Teachers also refer to cumulative assessment which is targeted at collecting information about learners' progress and achievements in a form of cumulative grades and stimulating pro-activeness, initiative, attracting and working with real customers, assistance to others.

The issue of key competences assessment deserves a special attention. It is in this area where tension is felt since inclusion of key competences assessment into cumulative assessment or diagnostic assessment is not always smooth and transparent. Vocational teachers acknowledge that key competences are usually assessed indirectly, i.e. their assessment is integrated into the assessment of occupational competences and is often 'latent'. In cases where key competences are developed by non-vocational teachers, they write grades, but this is not always the case. Some teachers expressed concern that if several teachers implement one module, some of them do not grade their students' achievements (*the teacher had ten hours or fifteen hours and he did not write a single mark, LT-R2*).

Learning in the module is finalized with competence summative assessment which usually covers an assessment of the knowledge (a test) and a practical task enabling demonstration of the competencies developed throughout the module. If several teachers work in the module, they prepare an 'integrated task'. The final grade is derived by summing up the final grade, students' grades from the module as well as a cumulative score. In rarer cases, the final assessment of the module is not performed, and the final grade of the module is based on the average of all grades.

> *And culmination of all these forms is the final examination at the end of module. From all these haircutting forms to design a haircut for concrete client. (LT-R18)*

It also turned out that the final assignment demonstration is becoming increasingly attractive. This is related to the weight of the module completion certificate - the competence is assessed, and with the module completion certificate it is possible to go to the labor market. For this occasion, an external commission may be composed from external teachers and social partners. In some schools this model has already been adopted, while others seek for it.

> *At the end of the module we do an examination with video recording, with documentation, with several teachers, so that it would be objective, because competence is assessed… (LT-R28)*

4.1.3.8. Teachers' collaboration

When exploring different activities to enact curriculum it became clear that these activities are supported by overarching teachers' collaboration, teamwork and peer-learning. Moreover, the need for more intensive work coordination and consultation with other teachers emerged as one of characteristics of changes implied by curriculum reform as felt by vocational teachers (see section 'The changes implied by CB curriculum'.

As voiced by one respondent, a modular, CB programme '*is a team. The programme, which is impossible for one person to realize*' (LT-R7). It is stressed that curriculum translation and interpretation happen not only in individual space, but also in a collective space, similarly as noted by Alvunger (Alvunger, 2018). Curriculum change and more direct introduction of CB approach has resulted in strengthening collective teacher agency. It is a usual practice that when several teachers deliver one module, they co-design, plan and coordinate intended curriculum: prepare a thematic plan, split and share themes, discuss and eliminate potential repetitions, agree on inter-connections and transitions. Similar collaboration happens between teachers from different modules. Prepared plans are presented and discussed with other teachers or in institutionalized teachers' collaboration structures - teachers' methodical groups. Some feel that these collective discussions and negotiations serve as a 'reality filter' in helping

to ‘bring closer’ the intended curriculum to the reality of schools *(‘The largest discussions go along how to make that our plans would not be just on the paper, that we could implement them, LT-R9).*

Next, teachers’ collaboration is the principle of instructional and assessment practices when modules are implemented by several vocational and key competences teachers. In such a case teachers consult during the course of training, coordinate their thematic training content and assignments, realize interdisciplinary, intra and intermodular connections. There are cases when teams of teachers jointly deliver training (for example, theory and practice teacher, vocational teacher and English teacher). Still some respondent view actual collaboration in class as weekly developed due to a lack of institutional collaboration culture.

Cooperation between vocational teachers and teachers of general education subjects is problematized by curricular (due to different educational standards, different teachers) and physical (due to separate departments and buildings for these curriculum areas) boundaries, although promising practices in connecting and specializing mathematics, English, physical sciences to occupational area can be observed. Among the successful collaborative experiences, a technology exam was mentioned, when several teachers collaborate to prepare a student for the exam, which includes multidisciplinary theoretical and practical assignment.

When analyzing teachers’ collaboration and teamwork institutionalization, three collaboration ‘spaces’ have emerged: situated organized (formal) collaboration in institutionalized methodological groups, nonformal collaboration on methodological issues and collaboration beyond school.

The methodological groups revealed to be an important mandatory organizational structure, meeting necessarily before and at the end of the school year, once a month or ‘when necessary’. When asked what methodological groups were doing and what discussions were taking place the informants mentioned design and review of intended school curriculum, preparation, review and approval of teachers’ thematic plans, competence assessment criteria and assignments, work planning, sharing of information on seminars, conferences, project activities, teaching methods, good practices, formulation of proposals for teaching aids, equipment, solving various practical issues. Some representatives of the administration made more critical remarks about the effectiveness of the methodological groups as a ‘subject’ of methodological activity, seeing it as the fulfilment of the requirement: ‘*I am not saying that there is no benefit, but that it would be very crucial in vocational training, I would not say so*’ (LT-R17).

The next level of teacher collaboration is represented by non-formal, group-based collaboration usually happening between teachers implementing a specific module or a whole programme. It is emphasized that collaboration often takes place in an informal format, 'at a lunch table' or in a teachers' room. Teachers share their uncertainties regarding official and intended curriculum, work organization and search together for solutions. Good peer relations and opportunity to 'consult' were inevitable at the start of working with new curriculum: '*Maybe when you start reading the formulations, you think ' what's this?'. But then when I talk to other teachers, and it is easier to understand, LT-R12'.* A rather common practice of open lessons for peer-learning purposes has emerged:

> *We observe other colleagues work in so called open lessons. You visit teachers from other programmes or other teachers of hairdressers. Not to criticize their work. You see it, like it and decide to apply it yourself. Observation is very useful. (LT-R1)*

It emerged that schools' administration often promotes teachers' cooperation and takes actions to connect different teachers and prevent isolated practices. The importance of teacher collaboration in modular training and overcoming personal barriers that complicate it are revealed by the interviewee's observation about teachers' collaboration:

> *Some teachers work very nicely together. In developing thematic plans and anticipating their content, layout, but we also have examples where teachers are not used for that, especially those who have come from practice. It happens that teachers see another teacher as a competitor and do not want to share, 'I know best'. We try to avoid it. (LT-R7)*

A few research participants reflected about the benefit of networking with teachers from other institutions and peer-learning. Teachers take advantage of opportunities to meet each other at national events, training courses, skills competitions and use such occasions for sharing methodological information and good practice. Peers are visited or addressed remotely for advice on curriculum implementation issues. Some of interviewees underlined that they are members of national teachers' methodological commissions, however their input was assessed reservedly.

4.1.4. Implications of curriculum enactment for teachers' competence

To better understand teachers' challenges in enacting CB curriculum the interview guide involved a block of questions about the change of teachers' role and their competence needs (Table 15). To characterize a changed role of teachers, two subcategories have emerged: Transition to CB curriculum have made teachers more versatile and Teacher as a learners' mentor and coacher. Teachers' competence needs are represented by three subcategories:

Pedagogical and andragogical competence needs, Technological competence needs, and Key competences needs. Research also provided insights regarding teachers' training organization and situation.

Interviews revealed that enactment of CB curriculum did have an impact of teachers' competence profile. In the context of curriculum reform several interviewees have noted that a vocational teacher has become 'universal' with 'a combination of versatile competences':

> *In modular program, there are things that are not singled out, you must know and be interested in equipment, hygiene. Sure, it's about cooking, but ... <…> There used to be even a separate teacher for equipment. Now it's the task of chef's teacher's... In that sense, the teacher is developing and developing. You have to be interested. And those devices are new, management is something new, new technologies are emerging. <…> We have to connect to our subject Lithuanian language, English and maths, IT. These vocational training sciences require a lot. (LT-R8)*

Table 15

Framework of categories and subcategories 'Implications of curriculum enactment for vocational teachers' competence' (Lithuania)

Categories	Subcategories
Changes in vocational teachers' role and identity	Transition to CB curriculum has made teachers more versatile Teachers as a learners' mentors and coachers
Vocational teachers' competence needs	Pedagogical and andragogical competence needs Technological competence needs Key competences needs implied by changing teachers role and complex context
Multiple actors and ways of CPD	Schools play a central role in teachers' CPD Social partners contribute to spreading of occupational innovations Demand for systemic technological competence development at real workplace Importance of teachers' agency for personal and professional growth

Teachers changing role has certain implications for transformation of their competences. Under modular programmes they became responsible for connecting theory and practice and integration of key competences development into the modules. In terms of knowledge, teachers reflect that the transition to modular curriculum has demanded broader and deeper vocational knowledge, in particular for those, who were previously responsible for practical training. Teachers of theoretical training remain in some schools but many of them declare the intention to end this duality *(Theory teacher needs to be practitioner. If he is only assisting practice teacher, it is very bad, he is just a 'dry' teacher, LT-R6).*

Transfer of responsibilities for key competences development to vocational teachers proved to be another challenge – teachers not only need knowledge related to key competences (for example, entrepreneurship principles) and attitudes, but also need the capacity to contextualize their development. Key competences development presents a particular challenge as evidenced from the citation below:

> *We were explained that vocational teacher, and not a separate teacher, has to teach, to integrate those key competences. <…> And we delegate their development to vocational teachers, not to other teachers. We can presume that in some cases they lack that knowledge a little. (LT-R15)*

Another clearly noticeable transformation of vocational teachers is the importance of his mentoring capacities. Interviewees refer to a complementary teacher role of 'mentor', 'coacher', 'motivator', 'assistant', 'counsellor', 'guide', 'leader', 'organizer'. This transformation is related to the attributes of current learner generation. Some of them lack learning motivation, whereas others require different, more interactive, pedagogical approach. Teachers' psychological preparation and communication skills become essential in reaching out to learners, developing and changing their attitudes, presenting career prospects, sensing their mood, discovering their needs, being sensible to their social / material problems which also determine their attitudes towards learning. Teachers need to adjust to learners *(If you start demonstrating your teacher authority… It's no good, LT-R12),* to prevent that the mood of one student would not impact learning motivation of others, to invoke their active involvement and participation in learning (thinking and doing) and group interaction. Next, when it comes to competence development, teachers' professionalism and occupational expertise are crucial *(If you are afraid, have no experience, it can happen that students start teaching a teacher, LT-R19).*

Interviewees were invited to reflect and specify on their particular competence needs. It appeared that teachers feel the need for strengthening both, pedagogical / andragogical (didactic) and occupational (technological) competences. The former relate to the pedagogical activities planning and implementation, whereas the latter – to occupational area of teaching. What regards transversal key competences, changing context of teachers work, diversification of learners, increased need for peer-work and heightened role of key competences in current societal and labor market contexts point to the importance of teachers own key competences.
It is noted that not all teachers have participated in academic teacher training, thus a need for pedagogical courses remain, in particular for new teachers or those coming from practice. The

latter position themselves with ‘practitioners’, and don’t have in-depth and sufficient understanding of pedagogical / andragogical processes.

> *Well, we are former practitioners who have come from production, so for us at least the first year, the biggest challenge is pedagogical skills, such as pedagogical methods. (LT-R14)*

Several interviewees remark that pedagogical competence courses are more oriented at general education issues, and they would welcome courses targeted at vocational pedagogy and andragogy. Respondents also emphasized the need for digital competence. This is again related to the changed students’ generation *(which does not part with their phones)*, the challenges of senior teachers in mastering IT, willing to make lessons more interesting, attractive and comfortable. It should be noted that interviews were conducted prior to COVID-19 pandemic and the need for IT competencies has increased even more.

Table 16

Teachers’ competence needs (Lithuania)

Illustration of pedagogical / andragogical competence needs	Illustration of technological competence needs
Psychology, pedagogical psychology Vocational pedagogy Work with young generation Pedagogical methods, interactive training methods, active training methods, pedagogical innovations, training in diverse learning spaces Learners’ motivation Planning of lesson Understanding learners’ needs Coaching skills Individualization of learning Assessment of learning outcomes and competences, formative assessment, helping learners to self-assess Application of IT solutions in training Assessment of own professional development needs	Knowledge of legal acts and regulations changes in the occupation and sector Knowledge of new tools and materials (for example, in cooking, in construction) Knowledge of authentic work processes (for example, work in restaurant, buildings insulation) Knowledge of technological process innovations (for example, welding) Performance of authentic work operation (for example, hairstyling, bricklaying, preparation of seafood)

The need for continuous update of technological competence in concrete occupational area arises due to expanded role of vocational teachers (connection of theory and practice), technological innovations brought by curriculum reform and constant occupational changes in the field. After curriculum change some schools initiated new training programmes what naturally implied the need for teachers’ continuing professional development (CPD). Still, technological competence development is bounded to the practical training resources of schools as seen from the last quote below.

Yes, training is needed. I know what I would need and I asked for it... I would really like to attend something from building insulation. I would really like to practice it for myself. (LT-R12)

Anyway, I think we should, maybe every year, have the opportunity for a week or two weeks to go out to acquire and deepen those real occupational competencies, get acquainted with all those innovations, try-out those innovations for a while. That we could 'educate' ourselves and tell students what it is. But there will be no benefit of me going and learning if we don't have these innovations in school. Yes, I educate myself, yes, I can tell about them, but I can't show students anything and let them try. (LT-R2)

When it comes to CPD organization, the main actor is the school, which assesses the needs for teachers' competence development, initiates teachers' self-assessment, plans and searches for suitable courses or organizes courses, initiates international mobility projects for this purpose. A support of administrative personnel for building teachers' expertise and encouragement of teachers to develop and grow as personalities is crucial. Some schools stress that they pay a particular attention to the integration of new teachers by providing 'methodological mentoring'.

The school administration is periodically interested in what training is offered for teachers. And during student holidays, when teachers have more free time, seminars, trainings are organized, people are sent out or lecturers come to us and conduct those trainings for the whole school community so that we would not lag behind and know what needs and expectations of future generations and students are. What they see in general education schools and what image they want to see here. Because we also have to change in accordance with surrounding environment. (LT-R3)

VET-labor market cooperation contributes to keeping up vocational teachers' expertise and strengthening their belonging to 'community of practice'. Interviewees refer to the social partners role in updating teachers' awareness on industry innovations. It is a common practice that they demonstrate new technologies, materials, products to teachers and students in schools or invite teachers to site visits or training courses organized for their employees. Teachers favorably assess the benefit of situated, longer-term traineeships in companies targeted at development of teachers' occupational expertise. However, there are complains that there is no systemic approach for building teachers' occupational expertise, courses or traineeships are costly and are possible only with financial support from European projects thus diminishing their availability to all in need.

Car service company in cooperation with the manufacturers of car parts, periodically organize trainings for various car services employees. Teachers from our school and other schools also attend those trainings. (LT-R3)

There are projects now, teachers get that training. But it costs huge money, if we talk about courses on the specifics of occupation. (LT-R5)

Interviews revealed that personal and professional development are the areas where teachers' agency manifests in particular. In interviewees reflections a link between their proactive orientation to their competence and CPD and enthusiasm to work is observable:

> *I possess lots of knowledge, I have attended many seminars. Hairdresser's occupation lives with me constantly. I have such a goal <…>, by teaching the others to develop personally. (LT-R16)*

Teachers show interest in their occupational area and occupational, pedagogical innovations *(If you want to be 'on the wave', you need follow all those technologies, new solutions and to pass them to learners, LT-R3),* demonstrate their wish to grow professionally, search for meaningful CPD opportunities, critically assess the quality of training events based on their applicability, choose higher education studies or approach companies personally to arrange CPD. They self-analyze and reflect on competencies possessed, their personal strengths and areas where they would like to grow.

> *I have overcome many challenges during those years, I always have where to improve, but now, I would say, I have reached my apogee. I'm not scared anymore. I no longer have the fear of getting some new subject as before. I already have a foundation laid everywhere. But there is still room for improvement. (LT-R14)*

Summarizing above, due to curricular innovations and constant occupational developments teachers feel the need to refresh their expertise, however these needs not always may be satisfied by schools. Input from employers is usually limited to familiarization with tools, products and materials, they offer far less opportunities for actual learning in communities of practice, enabling teachers to cross boundaries and maintain 'industry currency', what is important in current context when vocational teachers become the core 'agents' of occupation. Interviewees also point to the need of more 'vocationally' oriented pedagogical courses that would help to establish close and trustful rapport with learners, overcome barriers of communication with young, digitally proficient, learners and facilitate connection of theory and practice and key competences (literacy, numeracy and others) development throughout vocationally oriented modules. Reflections on hardship in finding common language with employers and overcoming employers neglective attitude point to the need for personal key competences that would help to mediate school-workplace connections and crossings. The same refers to key competences related to peer-to-peer collaboration. Insights of present research on the interrelation of teachers' agency and personal / professional growth brings to attention the importance of professional development and self-reflection competence. This competence is part of vocational teacher's qualification in Lithuania however no empirical evidence on its development and manifestation is available.

4.2. Findings of empirical research in Italy

4.2.1. The changes implied by CB curriculum

While exploring the changes implied by CB curriculum, the following subcategories characterizing curriculum and teachers and trainers'[9] activity changes emerged from the data: Shift to a more holistic competence development, Interdisciplinarity and introduction of units, Move towards more consolidated curriculum, Increased teachers and trainers' team-work and interdisciplinary cooperation, Making practical aspect more explicit in academic disciplines and key competences development, Change of perspective to learner-oriented training, Change of competence assessment approach.

Table 17

Framework of categories and subcategories 'The changes implied by CB curriculum' (Italy)

Categories	Subcategories
Curriculum changes	Shift to a more holistic competence development
	Interdisciplinarity and introduction of units
	Move towards more consolidated curriculum
Changes in teachers work	Increased teachers and trainers' team-work and interdisciplinary cooperation
	Making practical aspect more explicit in academic disciplines and key competences development
	Change of didactic strategies and perspective towards learner-oriented training
	Change of competence assessment approach

As reflected by research participants, transition to CB education in VET sector has started more than a decade ago, nevertheless it is still a process in progress with certain conceptual and procedural challenges and dilemmas. When thinking through the meaning of competence concept for teachers / trainers and its transformative effect for their work, research participants referred to occupational / professional and transversal dimensions (cultural axis and key competences as understood in EC recommendation):

> *In 2007 the Law said that there is a cultural axis (...). From that moment we started to think about competence, skills and knowledge and to build competence in the school. It is quite difficult to think about it and that knowledge together with skills can do a competence'. (IT-R20)*

[9] In the description of empirical research findings a word 'teacher' incorporates 'teachers' (*insegnanti*, *docenti*) and 'trainers' (*formatori*) working in VET centers

> *In the design of the technical-occupational competence there were inserted the elements of so called cultural and basic competences. From the one side the descriptions of these competences are strictly related to the descriptions of the work processes, from the other side these competences are treated as human capital which is located in the area of professional activity'. (IT-R17)*

Such an integral and holistic approach to competence with embedded development of key competences from cultural axis next to occupational ones and interdisciplinary curriculum are regarded to be important principles which VET has to follow under CB education paradigm *(Interdisciplinarity is at the heart of competence concept. If there is no integration of different disciplines in education it is not possible to develop competence, but just separate knowledge and skills, IT-R2)*. Still a few participants expressed their concerns over focusing too strongly on the satisfaction of labor market skill needs *(What disturbs me with competence approach is its excessive focus on the productive capacity of person, IT-R16)*.

Similarly to Lithuanian experience, under CB education paradigm a shift to unit-based curriculum may be observed, however, an important difference is that teachers and trainers in Italy autonomously decide on the structure of units (referred by respondents as didactic units, training units, learning units):

> *Beginning to work with competence-based approach made us to redesign our training approaches by introducing units of learning which we call didactic units and which encompass different subjects and disciplines. (IT-R5)*
>
> *<…> the training units described in the form of competence and then operationalized in terms of work tasks. It permits to design different VET courses in providing the necessary competencies in much easier way. (IT-R13)*

There is also a reserved opinion that considering economic and labor market differences among regions reflected in qualifications structure and curriculum contents and regional autonomy in VET agenda *'the process of design of competence-based curricula succeeded in providing consolidated curricula'* (IT-R16). The design of curriculum is informed by the qualification profiles and their referencing to the national registers *(The Atlas of work (Atlante del Lavoro) permits to homogenize the curricula in the regions and they are becoming very similar and close to each other, IT-R17)*.

Finally, what regards the impact of CB education for teachers work, interviewees admit that it contributed to 'adjustments' of teachers work *(A real competence-based approach requires specific didactic techniques, it changes rather significantly the tasks of vocational*

teachers, who, in the major part and for different reasons are not ready for such change, IT-R11).

First of all, CB education implies more intensive teachers' team-work and interdisciplinary cooperation at different stages of curriculum design and implementation, what seems to be a challenging task and sometimes conflicts with teachers' habitual work model:

> *One of the key changes is that already at the stage of curriculum design teachers have to cooperate. <…> A teacher does not work only in his own subject but has to work with others and seek for the inter-sections between the subjects. Teachers have to define the common goals of the curriculum. <…> If previously each teacher was responsible only for own subjects, now it is interdisciplinary. (IT-R15)*
>
> *It is really a big change, because just a few years ago the work of teacher was very autonomous, and now, with this new competence-based approach they have to work in teams and in networks. (IT-R4)*

Respondents also reflect that in the current curriculum model due to overarching idea of competence and larger focus on interdisciplinarity they changed their approach to knowledge formation by making the practical aspect of knowledge application more explicit. This means prioritizing vocational knowledge and purposeful selection of disciplinary knowledge so that it would enable learners to see the perspective of its utility and its application in professional and social environment *(The main idea is to bring to the theoretical training at the classrooms the modalities of practical training taking place in the workshops and labs, IT-R5)*. General education is an important part of curriculum and teachers of these disciplines in particular had to change knowledge formation strategies:

> *In this area the competence lays in the usage of the knowledge of history, law and economics for helping students to understand the society and to execute the duties of citizens. It means that in these disciplines we have to distinguish the knowledge which helps the students to understand the functioning of the society and to engage actively in the citizens duties. This competence aspect also justifies the specificity of teaching history in the VET center, comparing to teaching it in the lyceum, where history is treated as important element of academic development. (IT-R16)*

Analysis of statements about experienced changes which can be attributed to the introduction of the CB education paradigm also points to a larger demand for learner-oriented pedagogical approaches *(Competence-based curriculum design demands from the teacher different preparation and 'investment' very much oriented to the student, IT-R15)* and entirely different learning outcomes assessment strategies *(Other important change concerns assessment. It involved significant work in implementing new system of assessment based on the levels of qualifications and competencies and not just on the classical subject-based assessment. It requires to redesign the assessment strategies and methods, IT-R5).*

4.2.2. Factors having impact on curriculum enactment

Interview data analysis and interpretation allowed identifying the essential external, organizational, and individual factors affecting curriculum enactment process.

Table 18

Framework of categories and subcategories 'Factors having impact on curriculum enactment' (Italy)

Categories	Subcategories
External factors influencing curriculum enactment	Economic and social context
	Technological advancement
	VET policy agenda o Update of national and regional profiles o Freedom granted to VET institutions in curriculum matters o Priority for dual training and apprenticeship o Regional VET agenda and support o Competition among vocational training and VET institutions
	Impact of COVID-19 pandemic
Organizational factors influencing curriculum enactment	Availability of training resources necessary to fulfil curriculum requirements
	Availability of competent and experienced vocational teachers
	Openness of a training institution for change
Individual factors influencing curriculum enactment	Learners' attributes o Learners' young age and limited learning capacities o Learners' disadvantaged background o Learners' lack of learning motivation o *'Contemporary youth is different'*
	Teachers and trainers' attributes o Resistance to change o Flexibility and openness to change o Younger teachers' generation is more agile
	Teachers' attitude towards curriculum reform o Pragmatic-creative o Skeptical-critical

Research participants underline that engagement of employers and their organizations in macro, meso and micro level skill formation processes is a crucial factor for students' competence development. Their contribution is multilevel and includes forecasting and expressing demand for competencies, participation in design of qualifications and training programmes, training of students and supporting teachers' professional development. Such cooperation 'translates' into better correspondence between projected curriculum and learners' outcomes and the actual competencies needs in the labor market and increases mutual trust between education and business.

Interviews reconfirmed how different cooperation experience in different centers is as evidenced by quotations below. Without access to large employers, sometimes facilitated by networks of VET institutions, VET providers find it difficult to establish meaningful and enduring partnerships. Dominated by small and medium business companies, employers often lack interest and resources to contribute to students training and remain rather passive.

> *Relationships with local partners are very strong because all our training courses provide dual training. <…> We also cooperate with enterprises in organizing theory seminars, study visits to enterprises or inviting the professionals from the enterprises to teach technical courses. (IT-R1)*
>
> *Companies of the region have a high trust in VET. (IT-R13)*
>
> *Sometimes I make calls to the companies, especially the bigger ones working nearby, we also send them to review the first drafts of curricula. However, in such cases we often face the problem, that representatives of enterprises do not feel themselves sufficiently competent in the field of training, competences. For this reason, they often lack critical view to these texts and just say, it is OK. (IT-R5)*

Interviewees acknowledge that VET experiences a challenge in coping with high speed of technological advancement which implies more advanced learners' competence, emergence of new qualifications and training programmes, revision and update of current ones, improvement of authenticity of practical training facilities and more intensive training at workplace as well as constant update of teachers' competence.

> *About one year ago we had to revise all the VET curricula<…>. The main reason behind this updating is the change of the activities of enterprises and there has been intention to make the training closer to the needs of the world of work. It concerns the updating of the specific occupational (technical) competencies to the innovations of the enterprises, such as Industry 4.0, professional innovations, etc. (IT-R8)*

From the point of view of VET agenda, a revision of qualification profiles in 2019 and dual training are the dominating policy reform agendas in interviews. The former has implied a revision of curriculum *(The revision of curriculum takes place in cycles of 10-15 years, but today we have to revise also for the reason of introduction of the new national repertory, IT-R13)* and brought in progressive technological aspects into training content; the latter area is believed to be an area worth of strengthening and improving despite somewhat low engagement of Italian companies. Experimentation with dual training contributes to the establishment of partnerships with companies and helps to improve workplace learning in school-based VET track. It is also worth noting different regional VET governance frameworks as having an impact for curriculum enactment. VET institutions need to follow regional specifications and

some VET centers cope with the feeling of abandonment, low interest and lack of support from regional administrations, are demotivated by the control and extent of paperwork to account for regional funding, while others (for example in Lombardia region) feel trusted and supported:

> *Each region dedicates different attention to the funding of VET depending on the importance of VET for the region and its development. There are regions where VET is more generously funded and deserves more attention from the regional authorities and in other regions both, funding and attention of regional policy makers is poor. This influences quantitative and qualitative aspects of VET provision. Central government and legislative powers do not intervene much in the VET and consider it as the priority of regions, even though the financial interventions of the regions into VET are insufficient or absent. (IT-R19)*

Finally, differently from Lithuanian practice, VET centers agree that in the current VET policy framework they and their teachers are given a high level of autonomy in curriculum making decisions 'to decide how to reach competence' and how 'to enrich curriculum' in terms of training content. Present curriculum governance supports teacher agency in terms of influence on training content and own work:

> *Now I would say that there is quite an ample space for teachers' autonomy. The national and regional frameworks define the minimal standards and target competencies to be attained, but the pathway of attainment of these objectives is left to the freedom of teachers. (IT-R1)*
>
> *In the past we were much more focused on the transmission of the planned content <…>. (IT-R4)*

When considering other factors which have an impact on the mode of programme implementation and teachers' activities, interviewees referred to the implications of the COVID-19 pandemic. Training has moved online causing organizational, technological and competence challenges for teachers as well as psychological and emotional problems ('*tiredness'*) and depriving learners of opportunity for practicing at authentic environment either in school or in companies. Participants have also noted that they lacked non-formal communication and networking moments *'in seeking to develop, update their curricula or to make some project work',* since *'new ideas on teaching most often emerge in the everyday contacts and communication between the teachers' (IT-R7)*. The period called for creative solutions on how to cope with apparent restrictions (*The students had to design the schemes of electricity supply of their house, more or less detailed, indicating all the elements*. *<…>. We stayed fixed with the provision of foreseen volume of training by using project work and permitting the students to contact teachers online from time to time in executing autonomously these projects, IT-R8).* The period of pandemics is regarded to be a window of opportunities

for digitalizing training processes *(We have developed the platform for online teaching and succeeded to maintain the same learning community online, which I would never imagine before, IT-R13),* still research participants shared opinion that for developing occupational competence a real contact in the class or at workplace is crucial:

> *Of course, these technologies are effective for teaching, but mainly for adults. However, kids and youth are not yet ready to use these technologies for learning. Now I understand, that also in the future a real contact between the teacher and student will be necessary for effective training. (IT-R5)*

Similarly to counterparts in Lithuania, interviewees from Italy notice the importance of sufficient human and material resources for appropriate and high quality enactment of training programmes. Some of them feel a shortage and note that turnover of teachers becomes a problem, the others, in particular those having close contacts with companies, feel well equipped and more advanced in this respect compared to other regional VET centers or state VET institutes.

> *For the moment the school acquires different instruments and training materials for teaching mechanical technology, but so far it is not enough, and I am struggling a lot in teaching this discipline. From the one side, it is clear that this discipline and knowledge is necessary for the work, from the other side, the preparedness of the school and teachers in terms of didactics and technologies is largely insufficient to train such discipline in competence-based way. (IT-R11)*

Openness of the institution to new curriculum ideas and the organizational culture supporting teachers and their teams in preparing for and coping with diverse challenges brought by new curriculum is also noted to be an important 'facilitating' or 'impeding' factor. One of the most openly manifested work changes is the increased level of cooperation and for a part of the respondents this change is difficult to achieve due to institutional or personal barriers.

> *We are fortunate to work in the school, which has a culture to be ready for change and to innovate. I clearly see this important advantage when communicating with my colleagues teaching in the lyceum and comparing their attitudes to change and innovate with the attitudes of my colleagues in the VET center. Suggesting and introducing the teaching novelty in lyceum is much more complex and challenging task than in our VET center. (IT-R4)*

This brings to the role of teachers' personal attributes in constructing models of curriculum enactment and attitudes towards CB education. In many interviews CB education is opposed to so called 'traditionalist view' which is still characteristic to many experienced senior generation teachers. Interdisciplinary restructuring of training content from traditional disciplines towards concrete work processes and competencies, competence-based assessment, peer-working, pressure to cooperate with other teachers are perceived by some as '*not natural*

process of change', '*a real jump to something new, unexplored*', '*without any clear evidence, that it will work well*'. The cited reasons for such a resistance are the age, lack of personal flexibility and persistence to keep to traditional, personally experienced, studied and utilized discipline-based teaching method.

> *Some vocational teachers still tend to follow such isolated, arrogant and conservative approach to teaching relying only on themselves and following the same approach to training for decades. I would say that today about 30-40 percent of teachers belong to this group. (IT-R9)*
>
> *It is still very challenging to implement all this competence approach for staff in the training practices. The main difficulty is to think, to reason in terms of competence. To design the training project on the basis of competence. Still our training projects often refer to the traditional subject-based programmes. It is very difficult to restructure such programmes in developing annual training plans on the basis of competence. (IT-R19)*

Due to personal disbelieves in competence approach, lack of methodological support or convincing proof of effectiveness of new approach, teachers may choose to superficially accommodate CB education ideas as presented by one of respondents:

> *Very often it leads to a predominantly nominal application of competence in the training practice, not because teachers do not know what is competence, but because they do not know how to apply it in teaching and how to assess the competence. (IT-R2)*

Usually, younger generation teachers have more positive opinion about the value of this approach for their practices and learners' outcomes. They are referred to as much more dynamic, open and ready to change. '*Agility became the style of new generation of teachers*' (IT-R5).

In line with categorization of attitudinal patterns of teachers constructed after analysis of Lithuanian interviews it appeared that Italian respondents matched to two of them representing either skeptical-critical stance or pragmatic-creative orientation. Due to regional VET governance structure and curriculum autonomy of Italian VET providers, standardized and disciplinary – conformist patterns are not relevant to Italian context, although there are reserved observations that country is moving towards more harmonized / consolidated curriculum.

Table 19

Teachers' attitudinal patterns (Italy)

Attitude towards curriculum reform	Illustration
Pragmatic-creative Reform is seen as a positive change and opportunity for teachers to improve quality, to improve theory-practice connection, to be more flexible, to make curriculum more attractive to learners. Due to curriculum-making autonomy, teachers feel free to translate competence statements creatively into teaching practice.	*The description of competence statements in terms of work process tasks is not easy but very rewarding for training. Such descriptors are also very useful for the teachers of cultural competences, who are usually more remote from the concrete work practices, and the understanding of these practices require clear and detailed information. (IT-R18)*
Skeptical-critical Doubts regarding the sense of changing traditional subject / educational discipline-based curriculum and its redesign into interdisciplinary units and their value for learners' outcomes, knowledge and learning progression.	*The existing apology of competence-based approach and its excessive focus on the productive capacities and utilitarian aspects of learning and human work is not very convincing for me. (IT-R16)*

The interviews constructed a slightly different picture of learners in Italian VET system compared to Lithuanian one. Interviewees stress that their curriculum enactment methods are very much bounded by learners' disadvantaged background, young age and insufficient learning capacities as well as learners' preferences for digital learning tools over traditional printed manuals and books. According to interviewees, learners lack sufficient educative experience, have disturbances of behavior, diverse learning difficulties and special training needs, demonstrate lack of learning motivation, often come from socially and culturally disadvantaged and / or migrant background and experience personal or family problems. A trend of different learners' generations observed in Lithuania is not a case for Italy. It is necessary to consider that in Italy learners start VET at relatively young age (starting from 14) and it takes time and effort to reach a certain level of responsible and autonomous 'competitive performance'.

> *Our students extremely need learning experiences which are tightly linked to their everyday work activities. We also have students with very limited capacities of abstract thinking and perception of theories. Therefore, in learning they always need to see and feel the practical, concrete, visible object and concrete result. They just have a different form of intelligence. (IT-R16)*

On the other hand, taking into consideration these factors, research participants commented that curriculum constructed following the structure of work processes and based on

competencies is better suited to their learners compared to traditional, discipline-based curriculum:

> *From my experience I can say that competence-based and work-based approach to learning is better accepted by the students with difficulties or specific needs of learning, because it helps these students to feel the success, to see, that they can succeed in learning. (IT-R4)*

4.2.3. Activities employed to enact curriculum

Interviewees' descriptions of CB curriculum enactment strategies were analyzed using the following categories: Interpretation and translation of intended curriculum, Creation and maintenance of authentic learning and working settings inside of school, Coordination and facilitation of learning at real workplace, Connection of theoretical and practical training, Development of occupational and key competences in integrated way, Reliance on active, 'experiential', learner-centered training methods, Combination of formative and summative competence assessment and Teacher collaboration.

Table 20

Framework of categories and subcategories 'Activities employed to enact curriculum' (Italy)

Categories	Subcategories
Interpretation and translation of intended curriculum	Interpretation of qualification and curriculum documents o Qualification figures and profiles set minimum requirements for obtaining qualification o Qualification figures and profiles provide a flexible framework and reference for teachers work o Not all teachers understand the idea of competence and CB education o The quality of qualification figures and profiles has improved but still some gaps remain Design of school-level intended curriculum Construction of teachers intended curriculum o Recontextualization of prescribed curriculum intentions o Compromising prescribed competence statements with students' background and needs o Compromising prescribed competence statements with local needs o Clustering competencies into operational units o Scheduling and sequencing of training activities o Development of training material o Regular curriculum revision
Creation and maintenance of authentic learning and working settings inside of school	Reconstruction (simulation) of workplaces inside of school Engagement with authentic and meaningful production, services and clients Interaction with employers and professionals from outside

Coordination and facilitation of learning at real workplace	Benefits of workplace experience for learners' competence Familiarization with workplaces throughout programme Securing meaningful and valuable workplace learning o Setting quality requirements for workplaces and workplace learning content o Coordination and monitoring of workplace learning Limitations of school-work boundary crossing
Connection of theoretical and practical training	Setting interdisciplinary links between different curriculum parts Aligning knowledge to practice requirements Facilitating application of knowledge in practice Applying sequenced and systemic knowledge formation scheme Conveying disciplinary knowledge for educational progression, holistic personal development and key competences development
Development of occupational and transversal key competences in integrated way	Employers give importance to key competences Development of key competences cross-cuts all disciplines Developing competence in humanistic way
Reliance on active, 'experiential', learner-centered training methods	Supporting learning through practicing Supporting learning through group work Navigation between innovative and more traditional methods Supporting learning through reflective and critical thinking Application of ICT learning and learning mediation tools Individualization and personalization of learning Supporting learning through project-based teaching method
Combination of formative and summative competence assessment	Competence assessment is challenging Design of criteria to evaluate competence Formative competence assessment Summative competence assessment Importance of teachers' professional judgement
Teacher collaboration	Co-designing of intended curriculum Collaborative instruction and assessment Situated organized methodological collaboration Non-formal methodological collaboration Peer learning and collaboration beyond school

4.2.3.1. Interpretation and translation of intended curriculum

Research participants, when asked to reflect on how they approach and interpret national and regional qualification profiles and other curriculum documents, underlined two aspects. First of all, these competence texts for them signal minimum requirements of a qualification in terms of competencies, skills, and knowledge, which have been agreed between the State and the regions and which VET institutions '*have to follow*' in order to award vocational qualifications and to have a national recognition of issued diploma. The competence standards are perceived as '*linguistically representing the requirements of the world of work*', '*codifying all qualifications and indicating typical competencies*', '*adjusting to the specific requirements of skills and competencies in the different regional economies*', written in '*bureaucratic style*', '*dirty*,' '*mixed'* language which, nevertheless, is working for majority of respondents.

Interviewees elaborations reconfirmed that they perceive competence holistically and do not relate it solely with working processes:

> *These documents include different competencies, such as transversal competencies valid for all occupations or common for the occupational field. Then, there are competencies called connotational, typical for one concrete occupation. The cultural competences are defined by the agreement between the state and regions, which indicates which knowledge and skills have to be provided in the general subjects, like Italian language, maths etc. The descriptors of these cultural competences are much more abstract by just indicating which topics should be covered in teaching these competence fields, but by contextualizing them according to occupational field. (IT-R18)*

Secondly, interviewees refer to standards and profiles as to 'reference', 'framework' for their work, which *vocational teacher has just to introduce in the teaching practice* (IT-R1) and which serves as guidance for them:

> *I used to analyze these documents quite profoundly, coming from my personal interest to find some guidance and support on how to manage the training in the difficult conditions <…>, as well as to understand the formal, legal requirements for the process of handling of curricula and training in the classrooms. (IT-R11)*

The standards are said to have a 'mediating role' in planning training and assessment. As described by one participant, '*The standard is not a defined and finalized list of the elements of training content, but rather a representation of the logical framework of training content*', '*the current standards do not articulate or declinate the finished content, but just indicate the cluster of possible content of training structured in the defined way*' (IT-R17). In this respect the importance of teachers' perspective is important, since '*the straightforward application of these texts without adjustment*' would not work (IT-R17).

It also appeared that still some participants or their colleagues cope with understanding and accepting the CB education idea (*Even for me, working with competence-based approach for more than nine years these things are still very unclear, abstract, IT-R11*) with one participant noting that failing to properly understand '*the logics of competence*' is one of the key risks (IT-R17). The challenges noted are 'thinking and reasoning in terms of competence', 'understanding the goal and destination', 'designing training project on the basis of competence', 'reflecting on what is behind competence statements', 'understanding the vocabulary and logics', 'moving from theory of competence to practice'. Transition to CB education requires additional negotiations and discussions:

> *We have just to explain these teachers that you are already doing competence-based training and just to clarify, to explain the definitions: What is competence? What is learning outcome?*

What is evidence? What does it mean to create, produce the evidence or output of learning? (IT-R18)

When it comes to the opinion about representativeness and quality of standards and profiles, interviewees have voiced that according to them the most recent qualification profiles have improved as seen from the quotation below:

The previous repertory contained some problems and mistakes. There were defined competencies, knowledge and skills, but some definitions were not sufficiently concrete and clear. But this repertory also permitted for the VET schools more ample and flexible interpretation and amendments of the competence statements. The repertory approved in 2019 represents significant advancement, as elaborated together by the national and regional structures, using the experience of ten precedent years. (IT-R1)

Still, in line with academic literature, research participants agree that, from one side, gaps between competence statements and business needs are inevitable (companies either do not find in the standards competencies that are important for them or do not possess instruments for training and assessment of competencies encoded in the standards and curriculum). But from the other side, due to the logics of standards development, they are bounded to remain vague, what stresses the importance of teachers' capacity to interpret and translate intended curriculum:

Interpretation and translation of the national and regional standards in using them for the school curriculum design for theoretical and practical training are very complicated and challenging. Why? Not because it is difficult to enact them, but because sometimes these documents are too far away from what is demanded in the labor market. (IT-R19)

The part of the section above focused on 'interpretation' of competence texts. In the remaining section the processes of 'translation' of these texts into more concrete plans and pedagogical actions will be explored. The interviews revealed that there are no clear boundaries between school level and teacher level curriculum development processes. Only a few respondents referred to designing school level curriculum and cooperation in agreeing on longer term curriculum goals:

We have, if we can call it this way, a training programme which describes what we are going to do in the 1st year, in the 2nd year or 3rd year of study. This programme includes the list of competencies required by the region and on the national level, guidelines on how to implement these competencies and indication of training and learning activities, as well as the types of tools, instruments, equipment, books and other needed resources. (IT-R10)

Such a documented curriculum is submitted for regional administrations who fund VET and serves for monitoring and accountability purposes.

As it is a case in Lithuania, the most intensive curriculum-making work is performed by teachers and their teams. Analysis of how participants describe their actions allowed to construct the model consisting of the following stages: recontextualization of prescribed curriculum intentions, compromising prescribed competence statements with students' background and needs and with local needs, clustering competencies into operational units, scheduling and sequencing of training activities, development of training material and regular curriculum revision.

As pointed out, '*the main difficulty lies not in the understanding and interpretation of the prescribed curricula, but in designing the training/learning pathways for all students to acquire the foreseen learning outcomes'* (IT-R7). '*Teachers are free to choose what to do*' (IT-R20) by introducing new themes in the training plans and curriculum design requires quite a lot of efforts. When starting to work in CB education model, teachers had to adjust their taught subjects and modules to the competence requirements defined by the competence standards. Some teachers perform more intensive 'hermeneutic work' on distinguishing and planning development of occupationally oriented and general/key competences in the fields of languages, humanities, and sciences. At this stage teachers decide on the strategies for attaining the competencies defined in the standards, ways for shaping learners' knowledge, cluster learning outcomes into meaningful units (*We take competencies, skills and knowledge from the document and then organize activities, that are 'educational units' to propose to students, IT-R20*).

In Italian context, differently from Lithuanian, teachers exercise their agency when making certain compromises between prescribed competence statements and students' background and needs as well as with local (companies) needs. This 'translation' is two-ways activity: it includes review of prescribed competencies and their descriptions and making decisions on training goals and content according to learners' level and (or) compensation for noticed deficiencies in knowledge which VET center or a teacher deem to be important to address for learners' further progression.

> *Therefore, some competence statements are taken directly from these standards which we have to respect, other competencies are defined on the basis of the personalization of training course by our training center <…>. We have to adjust the new content brought by these changes to the capacities of our students of 13, 14, 15, 16 years of age. <…>. We cannot just push with upgrading curricula and ignore this factor. We have to find the compromise by the new knowledge and skills requirements posed by the new technologies and limited capacities of our students. (IT-R5)*

We know very well the skills needs of local enterprises, because this information is mediated through the inquiries of enterprises. We seek to find a suitable compromise in the curriculum design in order to provide these competencies demanded by the enterprises. (IT-R13)

In line with Lithuanian experience, organization of CB training and introduction of learning units increases the volume of planning, scheduling and sequencing of training activities *(How to plan the development of the competence, how to schedule the training time and tasks each month?, IT-R16).*

Interviewees also refer to the design of training material as a part of their intended curriculum work. Training materials compensate for the lack of manuals, help to better 'translate' difficult concepts to learners, to present learning phenomena in work processes, illustrate competencies developed and in general help in making competence statements and related learning 'more meaningful':

I also try to help students to read the curriculum, but not this standardized and rigid format, but instead I prepare for students more user-friendly interpretation of the content of curriculum with photos, illustrations, etc., like a small book, on the basis of which you could tell the story. It is very important to introduce the information about curriculum by telling story, by making it more understandable, with clear presentation. (IT-R19)

Finally, referring to limitations of competence standards to capture all aspects of professional and social practice, it is important that teachers would be open for these innovations and changes and would be willing to initiate new qualifications and regularly revise and update their intended curriculum and training practices:

Of course, obsolescence of technologies also requires from us to introduce new technologies and related skills regularly <…>. We have to fill in this gap and are looking for the possibilities to adjust our curricula in the field of ICT to target these skills needs, not by changing the standards or whole curricula, but by making more local adjustments in reacting to the needs of companies. (IT-R13)

In some institutions regular curriculum revision seems to be a situated curriculum-design principle with comprehensive process embracing regular and systemic consultations with local businesses and regional authorities who fund training, examination of qualification profiles content, revision of intended curriculum, training materials and update of teachers' competence.

4.2.3.2. Creation and maintenance of authentic learning and working settings inside of school

Theoretical and practical learning in school (unless it is apprenticeship) accounts for a larger part of training programmes, thus, representativeness of learning spaces to a real world of work enabling to perform authentic work operations is stressed. Considering the age and capacities of learners practical training in authentic conditions in school is 'essential' and 'vital' to learn in safer environment '*how to execute the work tasks in the perfect way <…> before confronting to the real requirements of the world of work*' (IT-R9):

> *We have come to conclusion that we must do our best in training them in the school. For our students the school is about doing something, not about learning. Of course, they work in the enterprise during practical training, but for us it is very difficult to make them learn and work independently, especially at home or in the enterprise. (IT-R18)*

The major concerns are 'bringing in the changing work practices to the practical training', ensuring the level of workshops and labs modernity and equal access to individual workplaces for everyone.

Next, the importance of authenticity of work processes and services, production and interaction with clients is stressed; interviewees value this experience for learners' professional and personal development and sometimes encounter difficulties in arranging them:

> *We seek to involve our students to assist in the organizing of the different events of local community, like different festivals, meetings, events, where our students participate or provide the catering services for the different events. Here the students acquire real practical experience and test their competencies. (IT-R15)*
>
> *In one of our VET centers students are invited several times per year to provide external catering services. But this is valid only for the programme of restaurant service, in other programmes we do not have such training 'production' or business services made by students*. (*IT-R1)*

Several interviewees refer to simulated enterprises inside of schools, which provide possibility for experiencing some level of authenticity of work-experience, helps to intensify connections between theoretical and practical training, development of key competences and '*significantly increase the motivation of students to learn*' (IT-R13).

In recreating authentic workplace environments and work processes schools rely on their connections to companies *(Good relationships with enterprises is a major factor for the successful performance of VET schools, IT-R11)* since without their support they have little opportunity to acquire costly authentic equipment *(It is very challenging, difficult, costly. For this reason, we develop partnerships with the enterprises who also help us with updating of technologies, IT-R5)*. Multi-level strong and continuous relationships with enterprises help

schools to tackle diverse challenges in modernizing their facilities and training teachers according to the Industry 4.0 demands. Reality of business is brought into training by lectures and seminars of companies' employees, who explain development and content of work and business processes, prepare assignments to students and participate in the assessment of their learning outcomes.

4.2.3.3. Coordination and facilitation of learning at real workplace

Interviewees consider workplace experience in the forms of internship, apprenticeship, practical training at workplace as crucial in competence development and regard current VET model of gradual introduction of real workplace experience into the programmes as appropriate. With prioritization of apprenticeship on Italian VET policy agenda, even a more positive opinion on organized practical training periods at workplace may be observed. As reflected in the quotations below workplace experience provides diverse benefits to learners:

> *Work-based learning not only provides defined professional/occupational competencies but also fosters development of knowledge and skills of the different other areas, including general education. For example, if I have to develop empathy and attentiveness to other people in the training course of healthcare programme, I can also develop it by observing how this empathy which is fostered in the lessons can be applied in the work practice. (IT-R2)*
>
> *For them the practical training at workplace helps to further develop their methods of reflection and critical analysis of the work performance. (IT-R7)*
>
> *These are decisive moments in enhancing the motivation of such students. (IT-R1)*

Familiarization with workplaces throughout programme, starting from the beginning of learning, is one of instruction principles which complements 'pure' learning at school environments. Visits to companies serve not only the purpose of familiarizing with how the work process is organized and executed in real enterprise, but also contribute to building professional identity and understanding authentic requirements for work:

> *Teaching about the work environment for the first-year students starts from the visits to enterprises, where they observe work and also meet other students who are doing practical training in these companies. It helps to acquire clear vision of their future work. (IT-R1)*

Italian students have more and longer possibilities for organized learning at workplace compared to their Lithuanian counterparts. To secure meaningful and valuable workplace learning, Italian respondent apply similar measures that can be categorized under two broad groups: setting quality requirements for workplaces and learning content and coordination and monitoring of workplace learning. It is aimed that students would learn and work in dedicated

and responsible companies and responsible persons (coordinators, tutors) are assigned to facilitate interaction between two venues and quality of the workplace period, a detailed training plan is agreed, and students' progress is monitored:

> *These tutors visit the students during their practical training at enterprises at least once per month in order to discuss with the student and the representatives of enterprise the progress of training. For each sector we also have responsible coordinators of training who support students, help to solve their different problems. (IT-R10)*

As admitted by one participant, training at the workplace is often very challenging and difficult both to learners and to companies. Consequently, the critical role is played by the vocational teachers or workplace coordinators. *'Trainers and coordinators in enterprise often need guidance and support instruments to develop key competences of students, especially personal and introspective competences, <…> such as ability to work quickly, precision at work, attention to the safety at work etc. Also, while learning in the enterprises students often face and experience fear and insecurity, so these aspects should also be considered by the enterprise and school in the organization of training'* (IT-R15). These persons are crucial in facilitating school-workplace boundary crossing (*One of my key tasks is intermediate competence assessment which are acquired by the students in the enterprises and transferred to the school, IT-R8*).

Still, like in Lithuania, there are some concerns about the quality of workplace learning and limited school-work boundary crossing situations. These problems arise from the environment of enterprises which sometimes doesn't permit to shape all the foreseen competencies. Interviewees also refer to companies' lack of openness to integrate learners into their work processes and unwillingness to contribute to planning of training and assessment *(The school has to come to compromise with the enterprise all the time, because enterprise claims – we take your student and train him, but the remaining bureaucratical and administrative work must be done by the VET school, IT-R18).*

4.2.3.4. Connection of theoretical and practical training

For Lithuanian respondents integration of theory and practice is one of the key innovations and the essence of the reform facilitating closer connections between vocational knowledge and practical training. In interviews with Lithuanian participants a narrative of contextualized vocational knowledge prevailed and narrative on pure, academic disciplinary knowledge was present to a very little extent. On the contrary, Italian respondents when reflecting about theoretical and practical training referred to different types of knowledge, including knowledge

from pure academic subjects, and to cooperation between teachers of academic disciplines and of vocational (practical) area:

> *For the VET, of course, practical vocational knowledge is the most important. Practical knowledge is very easy to transfer and to translate in the context of work. However, practical work involves application not only of practical knowledge, but also of other kind of knowledge. And here, I would say, that VET schools perform better in translating the general education knowledge into competence than the schools of general education. VET is really prepared to work in competence-based approach because it derives competence from the work practice and not from the theory of knowledge fields. (IT-R18)*
>
> *More challenging issues are faced in the training of cultural competences. For example, how to integrate the learning of maths in the training programme defined by work process. Here we have to look in which concrete work tasks of car mechanic and car body repair the mathematical knowledge and skills can be developed, for example, in usage of math in the financial accounting of the car repair company. (IT-R18)*

The subcategories which emerged to illuminate how theory and practice is connected are presented in the table below.

Table 21

Models for connecting theory and practice (Italy)

Subcategory	Illustration
Setting interdisciplinary links between various parts of curriculum Interdisciplinarity between different curriculum areas is promoted by organically combining different knowledge having natural relationships. Interdisciplinarity is realized through unit-based curriculum model.	*A particular attention was paid to the interlinkages of the application of the knowledge from the different disciplines – exact sciences, natural sciences, technological sciences, to the integration of the application of the interdisciplinary knowledge enabled by the digitalization of work processes and of Industry 4.0. (IT-R17)* *The knowledge of the history of art permits to apply the knowledge of development of all arts, the knowledge of religion – to apply /implement the religious-cultural principles. The knowledge area of sciences also permits to apply some knowledge in accomplishing the project. Students have to use this diverse knowledge in producing some 'meaningful' product. (IT-R7)*
Aligning knowledge to practice requirements Teachers (either of academic disciplines or of vocational area) recontextualize and appropriate knowledge according to practice requirements in order to demonstrate its practical significance for work and for students' daily life.	*The teachers of physics and chemistry can provide a very relevant knowledge helping to understand these technological processes, their principles and functionalities. (IT-R10)* *We paid particular attention to the identification of the elements of knowledge, especially cultural knowledge applied in the work activities. (IT-R17)*

Facilitating application of knowledge in practice Theoretical learning is supported by practical learning, when teachers create learning situations inviting learners to solve working situations and problems and to apply vocational knowledge.	*For our training center the aspect of practical training is very important and relevant in the field of cooking. We dedicate many training hours for practical training and the theoretical lessons are very strongly related to the practical tasks as well as multidisciplinary. (IT-R15)* *<…> we have a project: the students work on the real project which should be completed for the end of each year and during this work they apply both general and vocational knowledge and skills. (IT-R2)*
Applying sequenced and systemic knowledge formation scheme A few participants explained that they apply a more systemic model for knowledge formation when during the first year more attention is paid to knowledge and theoretical learning and during the next years the focus changes to skills and practical learning.	*The training is also specifically distributed through the training years: during the first year the focus is on the knowledge and awareness on the sector and occupation, whereas the next years the focus is on the development of practical skills and competences, economics and management know-how etc. (IT-R12)*
Conveying disciplinary knowledge for educational progression, holistic personal and key competences development Still some participants advocate that a sufficient level of disciplinary (powerful) knowledge is needed for learners' educational progression, their holistic personal development and key competences development.	*Pure competence approach looks reductive because, for example, in training of carpenters during the literature lessons we should have to read only the literature sources about carpenters and carpentry. But if we focus on the development of key competences and use general education for this purpose, I could easily apply very different content of my subject in training this competence. (IT-R2)* *The main problem is how to close the gap in the field of cognitive /knowledge preparation of our graduates comparing to the graduates of the public general education establishments. (IT-R10)*

4.2.3.5. Development of occupational and key competences in integrated way

The key competences narrative is extremely noticeable throughout interviews, however, differently from Lithuanian participants, interviewees from Italy do not confront occupational and key competences but rather approach both in holistic and integrated way. Presumably, respondents in Italy reflect about key competences more openly and deeply due to detailed specifications of these competences provided in educational standards and qualification profiles:

> *We alco clustered these key competences in the areas or blocks by referring to example of the EU key competence framework. <…> In the technological units we have integrated the units of the mathematical and scientific knowledge. <…> Digital competence is also strongly present in the technical-professional area of curricula. <…> We have also developed a table for*

referencing the cultural competences with the other obligatory competences of general education <…>. In Italy, despite of the variety of types of the public VET providers, during the first two years of VET programme there is applied a kind of common core curriculum, containing the basic competences as a background of obligatory part of curriculum. This core part is articulated through four axes which permit to combine the basic and occupational competences without multiplication and expansion of the subjects of modules of curricula. Integration with the occupational dimension is very important here, because by training occupational competences knowledge of general education is developed. (IT-R17)

Teachers plan the ways how to develop key competences and how to integrate their development with the occupational competence. Still development of competence in integral way is perceived as a challenge *(The most important challenge now is that concerning the development of so-called soft skills, in a strongly integrated way with the cultural and technical-professional dimensions, IT-R17)*. Interdisciplinary, cross-curricular activities and projects, group work are cited to serve well for this purpose.

It depends on the subject. Of course, development of transversal competences is covered by all disciplines. Then there are specific competences which require specific approaches. For example, the competence of (self) expression, which is very important to develop and all teachers, including VET teachers and trainers, are engaged in development of this competence. (IT-R10)

Like in Lithuanian part of research, a subcategory on the importance of graduates' key competences has emerged. Key competences are considered to be equally important as occupational ones for graduates as noted in the quotation below:

Employers first of all are looking for the good VET graduates, and secondly, for those new employees who want to learn and to develop their competence. For this the communication skills and key competences in general are of fundamental importance. By good graduate they mean open minded persons with the readiness and capabilities to learn. Therefore, in our educational plans and projects we target the provision of these key competences. <…> Thirdly, relational-communication competences – abilities of graduates to communicate with others in the native language and English, as well as to be a good citizen, by understanding the rights and responsibilities of the citizen. (IT-R1)

A part of the respondents were from the VET centers belonging to the network of Salesian training institutions, the CNOS-FAP Federation. These respondents stressed the integration of educational and labor market dimensions in training:

The goals related to educating 'good Christians and honest citizens' remain the absolute priority, above all other educative goals. For this reason, the competence-based approach is integrated in the way, in which it serves to the educative dimension, but not undermines or

dominates it. First of all, we educate personalities, who are ready to work, have the needed competencies, but, also, young people who have sufficient maturity to participate in society and then in labor market. (IT-R1)

Similar approach was shared by other interviewee underlying the importance of developing competence in 'humanistic way':

Humanism is of fundamental importance for the quality of work and performance at the different workplaces. A person, who is able to tell the stories, to express himself/herself is usually a better worker, not the worse one. Humanities contribute to the development of humanism and humanity and competence approach per se does not impede it, just in order to develop competence in the 'humanistic' way one has to take longer and more complex pathway. (IT-R7)

4.2.3.6. Reliance on active, 'experiential', learner-centered training methods

Italian interviewees discerned similar types of instructional methods to those distinguished by their Lithuanian counterparts. Less manifested was a subcategory of 'Supporting learning through sketching'; moreover, 'Skills competitions' seem to be far less popular in Italian VET system. Compared to Lithuanian counterparts, Italian participants more frequently referred to project work, when learners are engaged in learning projects, working on producing tangible results for extended time.

Table 22

Categorization of training methods (Italy)

Subcategory	Description
Supporting learning through practicing	Incorporates experiential, authentic, problem-based learning. Respondents describe their training strategy as 'reality-based learning', 'based on doing' (*basata nel fare*). Students learn by executing work operations and accomplishing practical tasks with authentic tools and materials. Practical work is closely related to knowledge, it requires application of accumulated knowledge and searching and finding necessary knowledge, constructing of new knowledge (*Here the knowledge is being largely constructed on the experience*, IT-R11). Initial skills are mainly developed and 'practiced' at 'laboratories', simulated companies or by engaging in authentic production or services. As learners progress, their performance becomes more independent. Independent learning is stressed and promoted. Various vocational situations are designed, technological processes (both visually and alive) are analyzed, diverse problematic work situations are solved. Learning has strong elements of experiential learning, as theorized by Kolb and encompassing experiencing, reflective observation, conceptualization and meaning making and acting (Kolb, 2015). Through transformation of experience, knowledge is constructed. *For this I seek to liberate the students from the frontal teaching, and, <…>, to enable students to learn and to act by applying data, information, objects*

	of the working environment, not so much focusing on the theoretical paradigms on how to shape the competence. (IT-R11)
Supporting learning through group work	Students learn in peers or work in groups, engage in group discussions, role-play; teachers facilitate situations when more advanced students help, explain, consult weaker ones. *One of the soft skills, which we prioritize is the ability to act in small groups. Therefore, this approach permits students to develop knowledge, practical skills, communication and group working skills. (IT-R13)*
Navigation between innovative and more traditional methods	Teachers have a broad repertoire of teaching methods. To keep learners' interest and motivation, particularly in theoretical material and knowledge, they search for more interesting, innovative teaching methods and learning spaces, design innovative teaching materials, creative and challenging practical work assignments, stress the importance of learners' creativity growth, organize site visits. Teachers search for how to activate learners, for example, by allowing to decide on the content of learning. But teaching of vocational knowledge also employs traditional frontal instruction (lesson), learners' independent work with manuals, text analysis (*traditional books and writing exercises, these are still important for the students to learn*, IT-R10), standardized instruments, multiple-choice tests. *We try to use the widest possible range of training methods, starting with the classical frontal teaching in the classrooms. (IT-R1)* *So one of the key challenges for vocational teachers is to motivate all students, to involve them in learning process, by leaving no-one behind. To be able to adjust the didactics by considering the potential, possibilities and environmental limitations of every student. (IT-R9)*
Supporting learning through reflective and critical thinking	Students are encouraged to reflect on how they accomplished tasks, what they succeeded or failed at. Reflection also includes remembering and considering already accumulated knowledge / experience, questioning why technological processes take place in one way or another, analyzing difficulties *(because if the student faces difficulties while doing something, they are freer to find solutions, IT-R13)*. Reflection helps to memorize / consolidate knowledge. Teachers recognize the importance of helping the student to observe and self-assess *(without proper methods of observation students are not capable to acquire and develop other competencies, both occupational and general ones. So, each teacher in his /her area seeks this develop this observation competence of students, IT-R2)*. Elements of critical thinking, when students are invited 'to think', to reflect', 'to creatively solve problems', 'to select', 'to evaluate and take decisions' are also observable in teaching strategies. *Students still need more education based on discursive thinking, linear and deductive thinking, based on argumentation. Now young people are used to jump from one concept to another in a very superficial way, without reflection. (IT-R17)* *Myself, when teaching I schedule my lessons in the way that the provision of information is stopped by following the reflection, in the way – thinking, reflecting, thinking, reflecting. It is also related to the previously discussed orientation to the fast output, impulsiveness of the character of the students. (IT-R11)*

Application of ICT learning and learning mediation tools	Teaching is supported by using tablets/ iPad, digital tools, slides, *Youtube*; training is organized in virtual classes, social networks, cloud storage are used for mediating training process, various apps are used both for training and learning purposes and for managing training, keeping in contact with students and colleagues. Teachers design online / distance learning content. Computer programs are part of training. *For example, they prepared tasks requiring from the students to prepare the video presentations for explanation of mechanical processing operations or work processes. During the lockdown the teachers of polygraphy and printing found some software on the Internet which simulates / visualizes the technological process of printing and used them for training. We also created virtual classes where our students can execute different learning activities, to solve the tasks. (IT-R10)*
Individualization and personalization of learning	Personalized approach to every learner, to his attributes and his knowledge level. Individualization of training is necessary due to diversity of learners (age, education level, motivation, experience). *What is my approach in solving this problem? For sure not to lower the requirements and learning materials - students learn to read complex original texts, historical texts. So, not by lowering the content requirements but maximally adjusting and adapting course and methods of learning and teaching, by inserting and providing more robust assistance to students, splitting the learning content into smaller consecutive units, adapting the pace of progress of learning for every student. (IT-R7)*
Supporting learning through project-based teaching method	Students are engaged in different projects which promote interdisciplinarity, practicing authentic work processes, cooperation of learners and development of broad range of their key competences. *It is usually held in the fourth year of training, when the students together design and implement the project in their respective occupational sector by preferably also involving the enterprises, where they undergo practical training and being accompanied by our teachers. Project work then becomes the main part of their qualification examination. (IT-R4)* *If I organize project work in the programme of graphics, there are designed training units involving different vocational teachers in this sector. This project also foresees development of competencies needed for the marketing activities, therefore, the training units involve teachers who teach disciplines related to marketing. This training unit also includes the part of language education, taught by the teachers of language education. (IT-R12)*

4.2.3.7. Combination of formative and summative competence assessment

Interviews showed that respondents do contemplate about the meaning and procedures of competence assessment, however it is expressed to be a '*challenge'*, '*with complex problems'* and '*difficult'*. Many of them claim that they are still working on assessment approaches or institutional models (sometimes referring to competence-based assessment) or are enrolled in targeted projects:

> *The competence assessment is one of the difficulties to be improved - how to evaluate competencies and what kind of methods, approaches to use in this assessment? This is even*

bigger challenge for the wide and complex competencies. <…> For example, in the three years training programme, the occupational competence is usually acquired during the 3rd year of studies. How to evaluate the entire three-year pathway to acquisition of competence? <…> We have designed the model, tested it and will implement in the final examinations of the three year programmes already this year. Of course, this model is still not perfect and we will have to make adjustments. (IT-R1)

The remaining issues to solve are integration of formative assessment into overall assessment scheme and reaching the synergy between formative and summative assessment, lack of assessment instruments, and the quality and validity of assessment. Some claim that competence assessment is executed rather formally, on the basis of traditional, input based, general education practices which are more of a summative character, lack authenticity and are '*not so close to the requirements of the world of work*' (IT-R19).

Assessment is based on qualifications and competence standards and criteria (for instance, predefined scale, rubrics of assessment, coefficients), which are prepared by teachers or by methodological centers of VET centers' federations:

The formative assessment made by teachers is executed according to the defined set of criteria which follow different factors and contain indicators to assess every factor. These sets of criteria are developed by the <…> regional research and development office in collaboration with the vocational teachers from the different centers… (IT-R12)

Definition of such criteria is challenging and time consuming but is also rewarding for both, a teacher and a learner, and makes assessment process '*simpler, transparent and easier to execute*' *(It is really a huge work for the teacher to prepare all this information and to present it to student, IT-R18).*

Formative assessment incorporates discussion and feedback to a student on his learning (see also category 'Supporting learning through reflective and critical thinking'). Additionally, intermediate or annual schooling reports are prepared, records are kept on outcomes and participation of students *(how the students interact in the classrooms and workshops, how do they participate in training processes individually and in groups, how do they learn during the extra-curricular activities, IT-R10),* and companies representatives contribute to formative assessment. Respondents value formative assessment and its potential in improving own work, however, as already noted, its implementation is challenging:

For us the formative assessment of competence is of fundamental value, much more important than summative assessment. It is because formative assessment helps to teachers to evaluate their teaching process and to adjust or revise it upon the need. (IT-R15)

What regards summative assessment, some respondents expressed their reservation about suitability of current methods, scales applied for the assessment of competencies. There is a consensus that summative assessment should be supported by formative because it '*has no power in explaining students what to do, or what not to do'* (IT-R7).

> *Until now we have been assessing occupational and key competences in the school-based VET by using the classical methods and approaches, the scale of 10 grades of assessment. We know that we need to upgrade and improve the competence assessment by applying more strongly the Anglo-Saxon methods of assessment whether the competence is acquired or not. We study those methods but it is not easy to apply them, because it requires to change the mentality of teachers having experience of assessment by using classical school-based methods. (IT-R8)*

Finally, from interview data a subcategory about the importance of teachers' professional judgement in competence assessment has emerged. Respondents underlined the necessity for teachers' capacity to judge whether the competencies were acquired, to perform competence assessment in interdisciplinary projects, to carry out formative and summative assessment of achievement of training goals and learning process *(For us what matters is not only result of learning, but also the process and this attitude influences our assessment. For example, we know the efforts of our students which they made during their training, IT-R15),* to assess key competences (*We asses these key competences by looking to the way of acting in the work process or by referring to the way of being, behaving in the group, for example, by observing their communication, dialogues at the workplaces, IT-R13).*

4.2.3.8. Teachers and trainers' collaboration

The need for more intensive work coordination and consultation with other teachers and trainers emerged as one of characteristics of changes implied by curriculum reform (see section 4.2.1. 'The changes implied by the CB curriculum'). However, together with competence assessment processes, teachers' collaboration is one of the persistent challenges:

> *This aspect of teamworking is still developed rather marginally and requires improvement. Historically, the teachers work in Italy was very autonomous. Each teacher had its own subject programme and delivered it in the classrooms being the full masters of these subjects. (IT-R1)*

CB education requires from teachers and trainers to collaborate at all stages of curriculum enactment. Since interdisciplinarity is stressed, collaboration starts already at curriculum design stage: *'The teacher and trainer does not work only in his own subject but has to work with others and seek for the inter-sections between the subjects. They have to define the common goals of the curriculum' (IT-R15), 'The biggest difficulty lies in the modality of*

training, when the teachers and trainers have to agree about using different training methods in the same unit' (IT-R15).

Compared to Lithuania, in Italy general education curriculum part and vocational training curriculum part are more closely connected, and in this respect a closer cooperation between VET and general education teachers emerges *(Trainers usually help to teachers of general subjects to adjust their curriculum and contextualize it to vocational training in the particular occupational area, IT-R18).*

Enactment of interdisciplinary units also implies teachers and trainers' cooperation in instructional activities, where cooperation between teachers from general education disciplines and vocational area is again stressed *(The teachers of different profiles cooperate in training these units, IT-R12).* Teachers cooperation in assessment is seen as a way to improve the quality and validity of assessment *(Such kind of cooperation and sharing in developing assessment materials and tools also helps to increase the objectivity of assessment, because each teacher individually is not capable to attain it due to inevitable subjectivity, IT-R7).*

A particular role of administration in supporting these processes emerges when special coordinators are assigned or more systemic approach to collaboration is promoted as evidenced from quotation below:

> *We together with vocational teachers analyze the curricula, review the didactic and training units. <…> and after such reviewing in small groups the generated ideas are presented to all colleagues and they are involved in the adjusting of the existing curricula and creating new ones. (IT-R5)*

When analyzing collaboration and teamwork institutionalization, three collaboration 'spaces', which have emerged from Lithuanian interview data, were reconfirmed. They are situated organized (formal) collaboration, nonformal collaboration on methodological issues and collaboration beyond school.

Referring to situated (more formal) teachers and trainers collaboration, similarly to Lithuanian experience, some VET centers establish working groups or didactic commissions dealing with curricular issues *(which target to update the teachers about the conceptual changes in the field of training and to create the transversality and transferability of the content of competencies, IT-R11*) or hold targeted curricular meetings (*Every year some teachers of VET center get together to talk about center, to talk about competencies, to talk about the way to improve the way to reach them, IT-R20).* However, this situated teachers and trainers' collaboration is of less universal character as detected in Lithuania.

The next level of teacher and trainer collaboration is represented by non-formal collaboration. It is emphasized that collaboration often takes place in an informal format, '*in courtyard*', daily or after events, when teachers gather to discuss their difficulties and problems, learners' achievements and share ideas about teaching practices improvements *(The sharing of good practices takes place daily in the format of different consultations in the classrooms. Such consultations are held upon the needs and demand, when teachers and trainers meet and seek to find some common solutions for the emerging momentary problems of training, IT-R8).*

Respondents also appreciate possibilities of interaction and exchange beyond their school within their networks, region or with other experienced VET centers and some of them, in particular those in the regions where VET is underdeveloped, would prefer for more intensive exchange:

> *There is important role of the networking and communication between the VET centers on the regional level in Lombardia. Representatives of the VET centers of the region regularly meet in the different organized platforms to exchange their ideas and to develop new ideas related to training. Regional authorities make a lot of efforts to ensure effective communication and sharing of such ideas and to listen to the different needs of the VET centers. It helps to create the dynamic and flexible regional network of the VET centers open to the changes and innovations and capable to generate them. This is a practice of Lombardia, however, the situation in the other regions is different. (IT-R6)*

4.2.4. Implications of curriculum enactment for teachers' competence

Lithuanian interviews revealed that modularized CB curriculum had a profound impact on vocational teachers' role and identity when transition to it has made teachers more versatile. Another observation was that the role of teacher in general tends to incorporate more learners' mentoring and coaching activities. The latter aspect was also stressed by Italian interviewees and run as a thread through teaching strategies, however respondents to a lesser extent referred to broadening of teachers' competence. This may be explained by the fact that in Italian context CB education is grounded on interdisciplinary work of teachers' teams, whereas in Lithuanian context, not denying the importance of teachers' collaboration in curriculum enactment, teachers have taken over broader tasks and roles after curriculum change.

Table 23

Framework of categories and subcategories 'Implications of curriculum enactment for vocational teachers and trainers' competence' (Italy)

Category	Subcategory
Vocational teachers and trainers' competence needs	Pedagogical competence needs Technological competence needs Key competences needs
Multiple actors and ways of CPD	Schools actively take care of teachers' CPD Enterprises help to keep 'industry currency' of teachers Schools networks' provide methodological and CPD support Support from Regions is limited and unregular Importance of teachers' agency for personal and professional growth

When invited to reflect on what are teachers' competence needs, Italian respondents, in line with Lithuanian participants, gave importance to all three competence categories, i.e. pedagogical/didactic competence, technological competence in occupational area of teaching and more general key competences.

In the segment of pedagogical/ didactical competence respondents most often referred to understanding and implementation of CB education principles ('*language of competence*'), planning and implementation of cross-curricular / interdisciplinary activities and educational projects, curriculum planning and implementation strategies, competence assessment, adjustment of curriculum according to individual training needs of learners, labor market and technological advancement:

> *Another important point concerns the knowledge of the 'language of competence' - if you want to train by this approach you must understand and be able to communicate in the language of competence, to understand the methodology of competence-based education. This is another field of teacher training where we try to provide through different formats and activities. (IT-R18)*
>
> *And now students don't read books <...>. So, it's another way to work, another way to collaborate, another way to explain to teachers how to work. (IT-R20)*

Italian interviews were carried out during the COVID-19 pandemic, and it is no surprise that many research participants noted digital competence gaps, in particular by more senior teachers:

> *One of the most important competencies for teachers today is the ability to work with ICT tools and the pandemic period significantly contributes to the acquisition and development of this competence. (IT-R9)*

In the segment of occupational competence two broad areas for knowledge and skills of teachers emerged. The first one is related to knowledge about '*how companies function*'. This area is explained to be important for new teachers who come to schools after academic education, for teachers who are more specialized in theoretical training or more general disciplines as well as for those who become responsible for dual training projects. Additionally, many respondents referred to the need to update the competence of working with new materials and new technology under the requirements of technological change, understanding innovations in industry such as automation, robotization and other Industry 4.0 implications:

> *Sometimes the areas of companies' activities are very clear for our sectoral coordinators of practical training, but these things are not so clear for the teachers who teach theoretical disciplines. If some work processes are not clear or familiar for the VET teacher in the classroom, he/she will not be able to pass the needed theoretical knowledge. (IT-R10)*

Interviews provided rich insights on the importance of and demand for key competences based on which the following key competences emerged.

Table 24

Vocational teachers' key competences (Italy)

Competence	Description
Openness to change	Positive attitude and capacity to adjust, improve teaching approaches and the way of work. Signals a capacity to self-assess own needs and project measures for personal professional development. *If the teachers of general education usually follow the same content of teaching for many years, vocational teachers have to update it much more often and here the capacities of adjustment and openness to change become very important. (IT-R1)*
Agility	Capacity to improvise, innovate, be creative and ready for unexpected situations. *Other important competence of vocational teacher is related to VET curriculum design and here they have to be very flexible and agile in order to take into consideration individual training needs of students, changing technological environment and labor market needs <…>. This is a part of creativity of vocational teacher in handling with the potential and resources of the students from the one side, and the possibilities provided by the learning environment (classrooms, workshops, equipment, ICT…) from the other. (IT-R9)*
Resilience	Resilient mentality towards failures of teaching and working. *Not all the students achieve the planned learning outcomes, or some of them face excruciating pathways of learning. Such difficulties often demotivate them and teachers have to motivate, support, encourage all the time, to help maintaining their resilient mentalities and readiness to change. This is very important. The teachers cannot be focused only on*

	their capacities to teach, they should be resilient to failures of teaching process, to the situations, when they cannot attain the teaching goals. (IT-R7)
Communication	Capacity to communicate and negotiate with local actors on curriculum issues. *Supervising of the work-based learning of the students in the enterprises permits for the vocational teachers to enter the enterprises as tutors, to discuss the training with the tutors of enterprise. (IT-R12)*
Teamwork	Capacity to work in group, engage into interdisciplinary teams, assist colleagues, share knowledge and network. *Other important competence for vocational teachers is the ability to share and exchange know-how and experience – vocational teacher cannot work alone, separated from other colleagues, without learning from more skilled and experienced colleagues, using examples of other vocational teachers. (IT-R9)*
Empathy, ethical competence	Sensitiveness to the context and diverse needs of students. Is the foundation for real bonding, pedagogical relationship / contact with learners. *We also pay a lot of attention to the specialized training of the teachers in the fields of ethical and social competences. Teachers are encouraged to share their experiences of working with the different students. (IT-R8)*

With regard to continuing professional development (CPD) organization, the main actor, as it is the case in Lithuania, is the VET center ('*We seek to provide as much as possible teacher training'*, '*training and competence development of teaching staff is under the responsibility of the VET center', 'In our VET center we are lucky to take care about training of teachers')*. Respondents' institutions have internal CPD planning and organization systems (*there is a process which we have in the school for the competence development and motivation of teaching staff, IT-R14*), organize teachers internal and external training, support young teachers and newcomers, provide methodological and didactic support:

> *Then each year there is organized a pedagogical day for training of particular pedagogical competencies according to defined topics. For example, in the last years this topic was assessment. We also provide our teachers with the different reading materials for independent studies, as well as offer the young colleagues the support and expertise of the senior teachers. For example, if a young teacher claims that he/she cannot manage the training process in the classroom we delegate some more experienced teachers to help and to suggest some different approaches to handle the problem. (IT-R13)*
>
> *School management also searches for the external possibilities of training for teachers. Such courses are selected on the basis of our training needs. (IT-R15)*

To sustain occupational expertise, VET centers address companies who share innovations and organize targeted technological competence courses *(And the only way on how to adjust the competencies of teachers to these innovations is training provided by the enterprises, IT-R18).*

Due to contextual differences in VET system governance in Italy, compared to Lithuania, two other CPD and teacher support actors have emerged, namely VET institutions networks (federations) and Regional administration bodies. The former is in particular noticeable CPD and methodological support actor (the case of CNOS-FAP Federation), whereas regional support seems to be developed only in some regions (the case of Lombardia region) and some respondents, in particular those in the regions where VET is underdeveloped, would prefer for more intensive and regular support:

> *(CNOS-FAP) annually organizes the training courses for all teachers and trainers in all sectors. They spend one week in such training courses, dedicated to different topics, such as transversal training, general education, digital education, new technologies in the different sectors, etc. Each year there are prepared the catalogues of training courses for selection… (IT- R12)*
>
> *However, regional authorities do not provide particular support in the field of teacher training, except of some financial support, co-funding for our projects dedicated for specific issues, like digitalization of training processes. There are no external training courses proposed by the region. (IT-R10)*

Finally, interviews revealed the relation between personal and professional development and teacher agency manifestation. Interviewees clearly demonstrated that they take personal actions to build their capacities and that they acknowledge the need for personal and professional change due to current technological and societal alterations as well as educational transformation caused by the COVID-19 pandemic:

> *The vocational teacher must guarantee the provision of lessons, courses, he is also responsible for the adjustment of these lessons and courses to the labor market needs, solution of the problems related to curricula, didactics and other aspects of training. But at the same time the discourse and discussion about assistance to vocational teachers in developing necessary competences for execution of these duties is not sufficient. Here everything is left to the will and possibilities of the teachers. (IT-R9)*
>
> *Other important requirement is the ability to identify the weak points of own competencies and to improve, develop them. (IT-R1)*
>
> *I have not had any specific educational or training background in the competence-based training. I have started to study these issues by myself by reading literature and seeking to understand how the competence-based curricula could be improved. (IT-R11)*

Looking at entire curriculum enactment process, agency manifests in the curriculum interpretation and translation activities, when teachers make decisions about teaching goals and 'compromises' with intended curriculum, negotiations and interdisciplinary collaboration with other teachers, professional judgment regarding competence acquisition. The shift to CB education forces teachers, on the one hand, to modify 'traditionalist' instruction methods which according to respondents do not work anymore for VET, and on the other hand '*to make an extra-mile and to go beyond defined teaching or training plans'* (IT-R2) pointing to their capability to translate intended curriculum into engaging pedagogical actions and enrich it with aspects which are not encoded in curriculum or which are necessary considering learners and local needs (subcategories 'Construction of teachers intended curriculum' and 'Reliance on active, 'experiential', learner-centered training methods'). Professional agency also acted out in self-reflection while questioning other teachers' 'traditionalist' strategies and personal determination to work differently and to treat learners' and their competence development holistically.

To summarize, CB education and related curriculum reform did imply adjustments for teachers and trainers work in Italy. The main alterations have been experienced in a shift to more intensive interdisciplinarity and collaboration, closer connection and integrated development of key and occupational competences, change of perspective to learner-oriented training. Some research participants still confront remaining conceptual dilemmas in enacting 'language of competence'. The cited remaining challenges are integrated development of competences from cultural axis and occupational / professional area, competence assessment and interdisciplinary collaboration of teachers. Teachers and trainers are granted sufficient space for teachers interpretative and translation 'maneuvers', however, as pointed by respondents, not all are able to make use of this enabling factor or resist CB education paradigm by supporting 'traditionalist' approach to curriculum.

Many interviewees point to a challenge of motivating young learners to actively participate in their personal and professional formation thus necessitating creative, learner-centered pedagogical actions and establishing real bonding, pedagogical relationship / contact with learners. Competence assessment is problematized by many participants by acknowledging that formative assessment (assessment for and assessment as learning) is insufficiently applied. In enacting curriculum, Italian respondents give importance to all three teachers' competence dimensions, i.e. pedagogical/didactic competence, technological competence and key competences. Open-mindedness, positiveness, agility and resilience emerge to be important key competences for teachers and trainers and a resource for their agentic capacity which in turn supports their professional judgment in choosing curriculum enactment strategies.

4.3. Enactment of competence-based VET curriculum in Lithuania and Italy: comparison of curriculum enactment models in the context of skill formation systems

According to the conceptual framework (Figure 4), introduced in section 1.5, the curriculum enactment processes are situated at meso level of skill formation system, representing education and labor market institutions. They are tightly connected to and interact with macro and micro levels of the system. Macro level institutions construct, legitimate and institutionalize competence or alternative constructs and its textual representations in a form of standards, profiles and curriculum. They set priorities for and elaborate skill formation strategies, define actions, establish skill formation institutional settings and provide resources to enact these strategies. At meso level education and labor market institutions, teachers and trainers make choices and take actions to implement skill formation initiatives and carry out education and training programmes, whereas at micro level the outcome of enacted curriculum (experienced curriculum) is affected by learners personal learning strategies and efforts to develop their competence.

Macro, meso and micro level processes are subject to influence of various factors, political agenda, institutional framework, social dialogue institutions, labor market regulation and structure, historical legacy, which can be characterized as external and internal to the actors of skill formation and curriculum enactment (Tūtlys, Winterton, et al., 2022). The aim of this section is to provide a comparative analysis of CB curriculum enactment models in Italy and Lithuania (Figures 10 and 11) in the framework of overall skill formation system, building on the analysis of VET curriculum reforms and findings of CB curriculum enactment empirical research. Summary of comparative analysis findings is presented in Annex 3.

4.3.1. CB curriculum enactment model in Lithuania

Lithuania represents a country with statist, state-led transitional skills regime and neoliberal skill formation agenda (Busemeyer & Trampusch, 2012; Busemeyer & Vossiek, 2016; Tūtlys, Gedvilienė, et al., 2022). Skill formation within a VET system relies on the national level dialogue between state institutions, educational institutions and social partners, the latter dominated by employers' representatives, and these institutes negotiate and construct the system of qualifications under apparent efforts of the state to coordinate this dialogue. Still, skill formation system is described as 'very fragmented' with poor policy and initiatives coordination mechanisms at national, regional and local levels and lack of holistic skills policy vision (OECD, 2021).

Qualifications design is aimed at fulfilling two dimensions of VET (KPMPC, 2019c; Strata, 2018, 2020). Within economic dimension it addresses the needs of economy and labor market, whereas social dimension is realized through making VET accessible to diverse groups of learners and offering learning opportunities for occupational competencies development to safeguard smooth integration into the labor market and prevent social exclusion. When it comes to the enactment of qualifications through VET programmes, a move towards more centralized VET curriculum design and restrain of the autonomy of VET institutions on these issues may be observed.

Figure 10

Explanatory framework of CB curriculum enactment in Lithuania

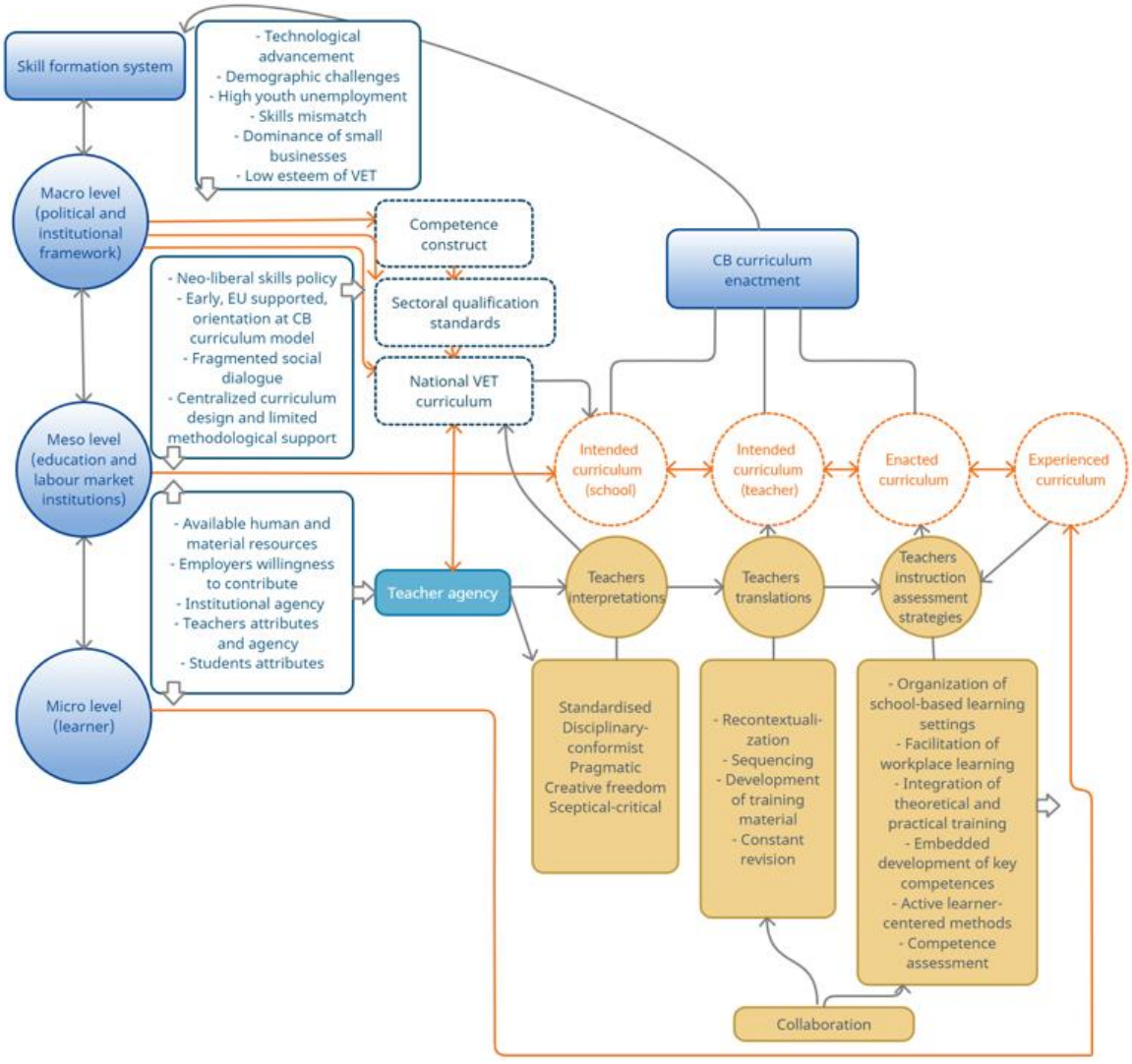
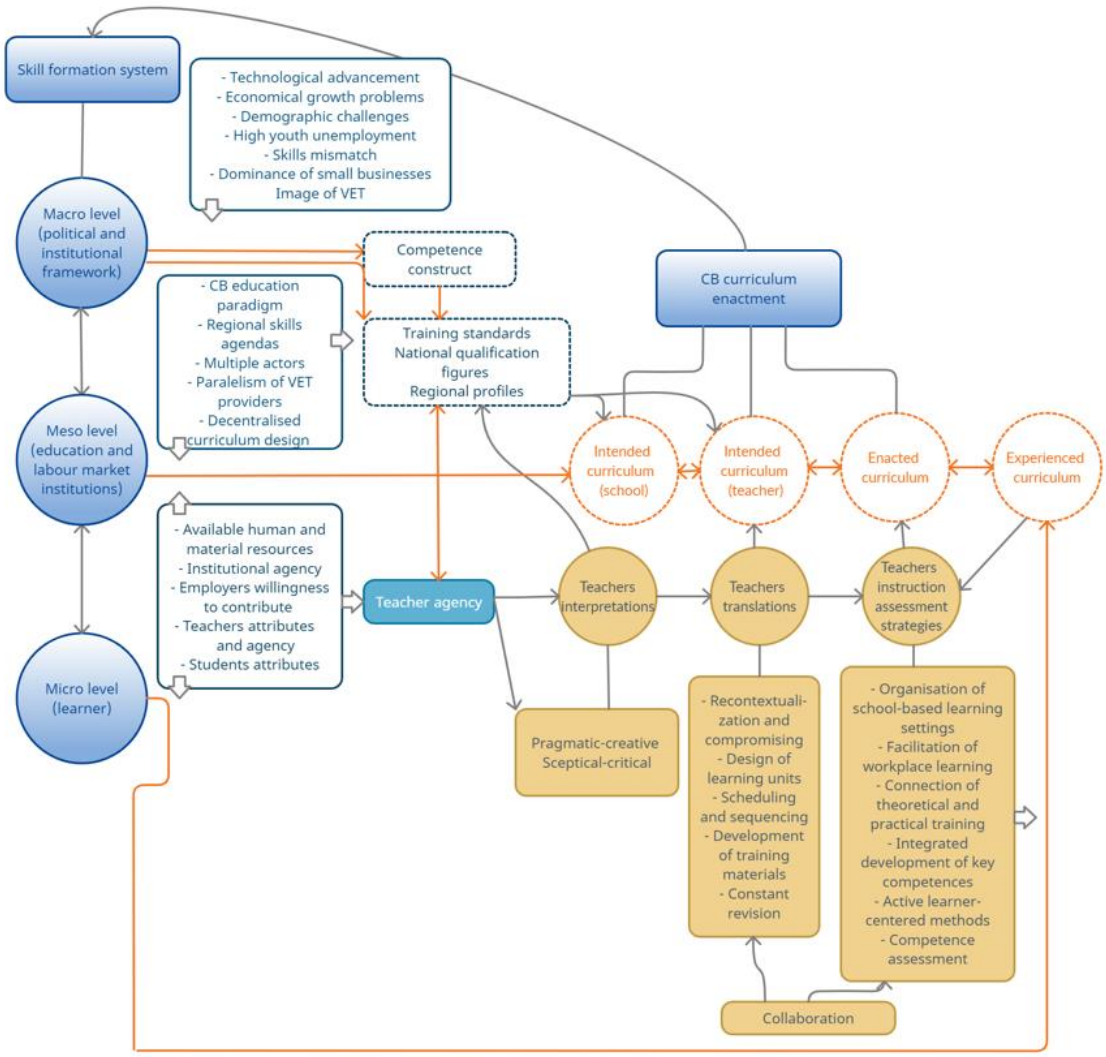


Figure 11

Explanatory framework of CB curriculum enactment in Italy



The principle of 'competence-based' (CB) qualifications and VET programmes has been legitimated in key legal acts, thus a current model of VET qualifications and curriculum is firmly based on competencies which have been defined in standards (called VET standards in the past and sectoral qualification standards or 'occupational' standards presently). Expansion of CB education was conditioned by historical and economical changes under which the country transformed its economy from centrally planned to market economy, gained access to experiences of other Western European countries qualifications and curriculum, became an EU member and subsequently received EU support for policy borrowing and policy learning.

Competence approach and curriculum modularization were encoded into the strategic documents from the very early stages of reform thus creating path-dependent processes (Busemeyer & Vossiek, 2016; Tūtlys, Winterton, et al., 2022). Having modularized

curriculum, competencies became the basis for structuring and framing curricula and have materialized into the object of instructional activities and assessment. Importantly, curriculum modularization model best corresponds to the differentiation concept, where certain modules shaping the core of occupation are mandatory thus preventing fragmented and narrow curriculum (KPMPC, 2012). The construct of competence in VET curriculum has gone through several transformations and the current model is conceptually oriented at a more holistic work-process competence, signaling a conceptual departure from narrow task-based competencies approach (Tūtlys & Spöttl, 2017). Yet, the main focus of standards and curriculum is a work-oriented occupational / functional competence with other dimensions of competence (cognitive and social / key competences) only implicitly manifested in competence texts and other curricular documents.

When it comes to contextual factors for skill formation processes, a high mismatch between skills supply in education system and skills demand in the labor market is noted as evidenced by the low demand for and low use of skills in companies, underskilling and overqualification of workforce (Cedefop, 2020a; OECD, 2021). Such a mismatch shapes a poor perspective for VET graduates. Moreover, it challenges organization of workplace learning in companies and openness of companies for VET-business cooperation initiatives. Passive business contribution and skills mismatch is partly accounted for by the dominance of small companies. Next, it is noted that VET in Lithuania is rather concentrated on traditional sectors, whereas global trends and EU policy call for moving beyond them. Although VET is under pressure to contribute to the economy innovation and transformation, national innovation strategies rarely foresee a more active and substantial role for VET system.

The country is facing a demographic challenge when youth population is decreasing, and the society is aging rapidly. This challenge has twofold implications – on the one hand, learners' composition is changing and vocational teachers need to have a varied repertoire of competencies to work with both, younger and older generation students. On the other hand, considering forecasted demand for mid-level qualifications, making VET more flexible and providing more continuing training opportunities is a macro and meso level implication for a whole skill formation system. High youth unemployment and that of VET graduates also indicates a need to revise the relevance of qualifications and curriculum and questions appropriateness of VET providers resources to train graduates according to labor market demands. Finally, VET institutions are trapped in the image of dealing with poor-performing students, which is changing very slowly. Despite of declared political intentions to attract more learners into VET, academic route remains more attractive and popular. The efforts to improve

the image of VET by fostering work-based learning in the last decades had very limited effects, because of rather slow and cumbersome development of this training form in the initial VET. For these reasons it may be challenging to upscale VET qualifications and programmes, make them more relevant in addressing technological challenges and moving towards higher-value-added activities.

Actual curriculum enactment processes represent a meso level of skill formation system. Empirical research revealed that CB curriculum reform and modularization of curriculum had a substantial impact for teachers work bringing some teachers into a conflict with their professional identity. The major manifested changes are broadening of their work responsibilities and intensified coordination and consultation with other teachers.

The research confirmed that competence texts, curriculum and legal regulations have a strong authority over VET institutions and teachers' actions. It showed that Lithuanian teachers experience divergent degree of autonomy in curriculum design and implementation with some of them feeling constrained by intended curriculum and rules of its implementation and others feeling empowered and supported to creatively adapt it and ready to take a risk of deviating from the intentions beyond the allowed limits. Depending on institutional climate and support, material and social resources available and personal experiences teacher agency manifestations in regard to curriculum change fall under five attitudinal patterns, namely, standardized, disciplinary-conformist, pragmatic, creative freedom and skeptical-critical.

Empirical research also identified a range of problem areas in curriculum enactment and competence development chain under conditions of school-based learning such as challenges in design and implementation of meaningful workplace curriculum; depth and richness of key competences and attitudes development; risks of conveying scarce, overly contextualized vocational knowledge and devaluing of 'powerful knowledge', poor quality of GE curriculum; quality of collaborative instruction and assessment, and the need for strengthening learners' self-assessment and formative assessment dimensions. VET policy makers and stakeholders have had different expectations for the implementation of CB modular curricula, including opening-up space for training and assessment innovations and ICT-based teaching strategies, increasing responsibility and autonomy of teachers in curriculum development, contributing to intensified workplace learning and collaboration with companies, improving links between theoretical and practical training, enabling formation of learners key competences, personality and professional identity, providing more opportunities for teachers' self-realization and self-development and making teachers work more interesting and

meaningful. Empirical research disclosed that by far not all expectations were fulfilled or proved to be relevant.

The curriculum enactment process revealed to be influenced by manifold factors: the extent of local employers' contribution and openness for cooperation, availability of material and human resources to implement curriculum, institutional agency in terms of openness to organizational and educational innovations and institutional actions taken to enact curriculum, learners' and teachers' attributes and their agentic orientation. The institutional agency has manifested as a very important factor since in the absence of external methodological support for school curriculum design and implementation VET institutions had been left alone or in cooperation with others to design their own approaches. Furthermore, they play the main role in teachers' professional development and facilitating collaborative curriculum enactment.

Finally, at micro level to activate learners teachers use active, learner-centered training methods, independent and group learning, create situations of experiential learning to enable knowledge construction and application of theory to practice, practicing in authentic learning situations in simulated or hybrid learning environments. A trend to invoke instructional strategies for developing reflective and critical thinking in learners and to stimulate their judgmental capacity has emerged. To compensate for the lack of intensive learning at workplace and diversify learning contexts learners are challenged with site visits and social initiatives, participation in school, inter-school or international skill competitions. There are views that on account of clearly manifested 'practice' element, current curriculum is better accepted by learners compared to subject-based, more theorized, curriculum of the past.

4.3.2. CB curriculum enactment model in Italy

Winterton (2007) has described Italy as a country with a market-led school-based VET system noting ineffectiveness of skill formation system and conflicting distribution of powers between its actors. Busemeyer and Schlicht-Schmälzle (2014) have attributed Italy to the residual type (or liberal) countries cluster characterized by a weak public commitment to VET and weak employer involvement. According to them (p. 62), Italy has a weak VET system and poorly developed higher education system. Both analyses problematize skill formation system governance and operation. The same weaknesses of skill formation policy have been noted by OECD (2017).

Governance of Italian skill formation system is shared by diverse national and regional actors with the latter playing a pivotal role in skill formation through a regional VET system. As a result, there are significant regional variations depending on whether regions have

systemic and holistic skill formation agendas or are focusing on particular sectors (Angotti et al., 2015). On one hand, due to substantial differences among regions in terms of their economic development and labor market structure regional authorities are in a right place to address local skill needs. They do so by foreseeing regional qualifications, 'borrowing' them from other regions or supplementing nationally defined qualifications with regional specializations. However, at the same time it should be noted that international organizations, such as OECD, call for more nationally coordinated skill formation responses (OECD, 2017). Last decade's qualification system formation and management policy initiatives launched by national authorities, such as national qualifications framework, national repertory of education, training and professional qualifications, Atlas of work and qualifications, competence certification system, may be regarded as the tools for harmonizing these regional differences and facilitating labor mobility between regions. Regional authorities also 'project' internal structure of curriculum, delegating actual curriculum content decisions to VET providers. Social partners contribute to skill formation agenda with policy proposals and participation in technical working groups which elaborate qualification profiles. On the grounds of critical assessment of significance of employers' present role in skill formation, political prioritization of dual and alternate learning in VET and general education is intensifying labor market role in VET.

During the last two decades efforts were made to recognize a regional VET system as a part of national education system, however the identity of the regional system is not yet fully settled and its role and contribution to skill formation system remains ambiguous (Vergani & Rossini, 2017). Regional VET qualifications at NQF/EQF levels 3 and 4, which have been the focus of this research, primarily are targeted at providing alternative route for youngsters' compulsory education and further education and training, thus acknowledging and building on the VET qualifications' social integration and prevention potential in addition to that of preparation for work. At the same time, 'personal development' dimension in VET curriculum is also detectable due to strong emphasis on key competences. VET in Italy and regional VET programmes in particular have been traditionally associated with disadvantaged learners and those at risk, however, evolution of target group from learners in need for a *second chance* to those learners who make a determined, career-linked choice of VET is observed (A. Carlini & Crispolti, 2020). Still, some authors (Vergani & Rossini, 2017) question whether VET system is capable of adjusting to technological changes and modernization and problematize introduction of technological innovations, thus the image of qualifications at lower levels as a

mean for preparing workers for traditional sectors and for solving social integration tasks remains.

Concept of competence has become a ‘paradigm of reference’ in all education sectors (ISFOL, 2014). It is legitimated in key legal acts, training standards, national figures and regional professional profiles of qualifications and the discourse of competence is deeply rooted in educational, didactic, assessment processes. Analysis of literature, legal and methodological documents revealed that construct of competence is still contested by different authors, with some of them pointing to its reductive and instrumental nature and the others defending its meaningfulness for Italian VET system (Gomez & Tacconi, 2015; Nicoli, 2012, 2019; Tagliagambe, 2011).

As regards contextual factors having impact on skill formation policy, social and economic context is far from favorable with remarkably high youth unemployment rate and the largest NEETs rate in Europe, high emigration and subsequent population aging. International organizations note a lagging economy productivity growth, in particular of services sector which attracts many VET students, and low level of innovativeness. Regional differences in economic development, industrial and labor market structure imply the necessity of local skill formation responses and a certain level of VET providers autonomy and flexibility in contextualizing their practices. Regional variations are striking with some regions lacking a firm regional VET subsystem and relying on VET programmes delivered by state technical or vocational institutes. Low level of population skills, weak demand for skills from the labor market side and dominance of small, often family-run, businesses with outdated work practices result in acute skills mismatch and trap in low-skills equilibrium, thus, impeding activation of competence for VET graduates and suggesting poor perspectives for youth labor market integration (OECD, 2017). At the same time, newest forecasts predict strongly increased demand for graduates in manufacturing and construction areas (Unioncamere & ANPAL, 2022).

The empirical research and field analysis disclosed that introduction of CB approach in VET curriculum constructed a more holistic and integral understanding of competence and enhanced interdisciplinarity of training. Teachers of theoretical disciplines and trainers from vocational area had to rethink their approach to competence meaning, rearrange instructional activities by introducing interdisciplinary learning units, change competence assessment and integrate more collaboration and teamwork. This change has challenged acceptance of the idea and goals of CB education and they are still problematized by some teachers. Thus, when analyzing agentic attitudes towards CB curriculum model, two patterns, skeptical-critical

stance or pragmatic-creative orientation, manifested most significantly. Respondents with the former one raised concern about a performativity discourse in VET curriculum and respondents with the latter one felt that traditional models are no longer relevant for changing context and new generations of learners.

The research revealed that integration of theory and practice is achieved through systemic integration of vocational knowledge and general education disciplines knowledge, transforming instructional approaches from linear to transversal ones when teachers from general education disciplines and vocational area collectively contribute to CB curriculum enactment. The research also illuminated the freedom, autonomy and flexibility granted to VET institutions and teachers in choosing strategies to enact qualifications and curriculum. The narrative of flexibility is also traceable to curriculum design documents prepared by Regional authorities (Lombardia Region, 2018; Piemonte Region, 2021; Veneto Region, 2011).

Considering a rather general character of qualifications and competence documents, there is a need to adjust (and sometimes 'compromise') them to local needs and learners' attributes or supplement them to compensate for noted deficiencies, in particular, in terms of learners' knowledge necessary for vertical educational progress. These documents are treated as minimal (threshold) requirements and a reference for curriculum, instruction and assessment, and it is up to VET institutions and teachers to decide 'with what aspects / how to enrich curriculum', 'how to reach competence', how to contextualize curriculum and make it more meaningful for local realities.

Therefore, such an open curriculum model requires teachers interpretative and judgmental capacities. Some research participants note their own or their colleagues' challenges in 'thinking and reasoning in terms of competence' and 'moving from theory of competence to practice'. If language of competence is misinterpreted, the risk of staying 'caged' by the standards and 'downgrading' training by keeping to threshold requirements or 'predominantly nominal application of competence in the training practice' is present.

Analysis and comparison of methodological papers aimed at assisting teachers and trainers in transition to CB education in Italian education and VET system and empirical research findings points that expectations about pedagogical and curriculum changes to a larger extent were adequate (Benadusi & Molina, 2018; Frontini & Psifidou, 2015; Lombardia Region, 2013; Malizia & Tonini, 2015; Nicoli, 2012, 2019; Ronchetti, 2017; Tagliagambe, 2011). Nevertheless, implementation of this curriculum model came with certain challenges. In addition to already noted conceptual and methodological dilemmas, the detected problem areas of curriculum enactment chain include insufficiency of competence assessment system

to adequately evaluate progress in achievement of competencies and to support their development, interdisciplinary collaboration of teachers, as well as bringing-in the changing work practices to the school-based learning.

The curriculum enactment process depends on the established connections with social partners and local companies and openness of local partners for cooperation, availability of material and human resources to implement curriculum and respond to technological innovations of enterprises, institutional agency in terms of support to curriculum enactment and teachers' capacity building, learners and teachers' personal attributes and agentic orientation. It emerged that still many teachers are inclined to traditional, input-based, curriculum approach what provokes their resistance, whereas younger generation teachers are more positive and regard current curriculum model to be working for their learners.

At micro level to activate learners ('*putting learners in condition to perform, to make*') teachers are reliant on learner-centered training methods, in particular on problem-based learning and project work, reflectivity and self-evaluation, group work, they strive to integrate theoretical training aimed at disciplinary knowledge with practice requirements, work to develop higher order thinking and reasoning capacities, integrate and synergize workplace curriculum with school-based teaching. Teachers working in VET and having a status of trainers are regarded to be teaching and learning process experts (in contrast to experts of content); this narrative is present in documents and is shared by research participants.

Referring to the above, the curriculum approach has characteristics of 'educationally strong' curriculum. On the one hand, it is preconditioned by high status of diverse key competences in curriculum in Italian education system in general. On the other hand, VET centers prioritize embedding values and humanistic development in curriculum due to their historic tradition, such as Salesian preventive system. Since many learners come from disadvantaged background or having experienced educational failures and start VET at young age (14 years old), pedagogical practices are aimed at establishment of real bonding, pedagogical relationship with them what seems to reinforce the development of occupational competence. However, the success of the model very much depends on contextual political, societal and labor market factors supporting VET curriculum implementation, transition of graduates to labor market, equal access to employment and deployment of gained competencies in further working and social practice.

4.3.3. CB curriculum in the school-based VET model of Lithuania and Italy: similar or divergent pathways of curriculum enactment?

Exploration of CB curriculum enactment models has revealed certain similarities and differences which may be explained by contextual, historic and cultural factors, differences in governance of VET and skill formation system and curriculum reform targets with Lithuania having chosen to reform curriculum more radically.

In Lithuanian context CB education was pragmatically introduced and further developed to respond to the needs raised by labor market actors, whereas in Italian context CB education is an educational paradigm cross cutting all the education sectors. It is only recently that CB education has gained a more significant meaning for general education curriculum in Lithuania. Another difference is that if qualifications standards in Lithuania serve the purpose of informing VET curriculum design and competence assessment, the aim of qualification figures and profiles in Italy is to address regional differences in qualifications and programmes and to harmonize them, to build the foundation for competences certification and to facilitate labor mobility within the country. By reforming curriculum structure into modular one Lithuania legitimated work-related competencies as a foundation for curriculum whereas in Italian context we can notice a more dynamic interplay and stronger consistency of work-related and key competences.

Based on empirical research it was possible to construct a common framework of curriculum enactment processes illuminating teachers' interpretations and translations of intended curriculum and strategies applied to realize these interpretations and translations. Competence development is grounded on firm work-process based and centrally set modules (Lithuania) or more implicit interdisciplinary training units (Italy) which in both cases call for collaborative curriculum enactment of several teachers. The research traced the curriculum enactment process under conditions of school-based VET. Both countries do not have well developed apprenticeship and dual VET systems and therefore need measures for compensation of lack of learning at workplace. These include construction of authentic hybrid learning and working settings inside of educational institutions, design of meaningful and authentic, work and social reality-based learning and practicing situations, facilitation and mediation of diverse and creative encounter with real working practice and practitioners throughout the programme. Co-involvement of labor market partners into educational processes undoubtedly is a success factor and it seems to be a more challenging task for Lithuanian VET sector.

The main didactic strategy is learning through practicing, when students have a possibility to interact with real materials and create a real product the quality of which can be tested and which has a personal and social value. Looking at what type of VET learner agency is encoded by qualification frameworks and other competence texts one can notice that both countries refer to dimensions of personal autonomy and responsibility as well as ability to act in increasingly diverse and complicated contexts and to solve problems. To nurture these characteristics teachers and trainers turn to learner-centered methods, encourage learners self-reflection and critical thinking, design learning situations that would facilitate application of knowledge in practice and construction of new knowledge.

Italian and Lithuanian cases represent different variants of CB education, when in Lithuania work-related competencies become organizing units of curriculum and in Italy they are rather a horizon to be achieved throughout training. Another important difference is the focus of competence development. If in Lithuania VET curriculum is directed predominantly at work-related competence, in Italian VET centers, on the contrary, educational activities equally address both, occupational and key competences. The narrative of the latter competences in Lithuania needs to be acknowledged, but to which extent and how successfully these competences are enacted depends on VET institutions and teachers. Attitudes towards the importance of knowledge revealed to be different as well, with majority of Lithuanian participants prioritizing skills and very practical knowledge and a number of Italian interviewees questioning increasingly practical aspect in academic disciplines and key competences development.

The curriculum reform in Lithuania was implemented in centralized manner with little space for experimentation, whereas in Italy, the reform has been more decentralized, with cooperation among the regions, educational institutions and local stakeholders playing an important role. A distinguishing feature of Italian VET 'ecosystem' is that there are many strong VET providers with their own traditions and unique methodological approaches to education and training. VET providers may belong to different federations or networks which design their own methodologies and approaches and keep networking and exchange of good practices alive. This factor might have led to a stronger focus on educational goals in curriculum.

In Lithuania, curriculum reform has been influenced by EU policies and support mechanisms as well as by somewhat selective policy learning on improving responsiveness of education to labor market needs. Lithuanian VET system is rather homogeneous, educational institutions did not have elaborated methodological approaches and lacked the capacity to

develop them. Interviews have clearly conveyed the sense of frustration and insecurity felt at the start of the reform. This has contributed to a stronger focus on labor market needs and a 'technocratic' approach to curricula which is still present.

Another important diverging factor for curriculum enactment is found at the level of autonomy in curriculum decisions. Italian teachers and trainers treat qualification and competence documents as minimum requirements, choose and negotiate ways of reaching competence and enriching nationally or regionally prescribed teaching goals. Compared to Italian model, a Lithuanian one may be regarded as more technicists translation and implementation approach, even so, depending on teachers' agency, a certain freedom of maneuvers is possible and enjoyed.

Positioning curriculum enactment processes within skill formation system and consideration of economic indicators and labor market outcomes provide evidence that a tight synergy between VET outcomes and labor market demands is hard to achieve due to social and economic context factors and agency of labor market and VET actors. This has twofold implications. It proves that the quality and effect of enactment of competence texts depends on efforts of curriculum agents, i.e. teachers and trainers, their capacities to contextualize and recontextualize intended curriculum and enrich it. But from the other side, having in mind forecasted future scenarios for VET (Cedefop, 2020d) and current challenges the reconsideration of VET curriculum mission and model from epistemological and didactical point of view may be necessitated, in particular in Lithuanian case. Other researchers' insights suggest the direction towards educationally stronger curriculum, but, at the same time, policy makers in both countries may be tempted to marginalize VET offer and direct it at solving immediate labor market or social integration problems. However, experiences of both countries demonstrate that, taking into consideration contextual political, societal and labor market factors, VET system without other interventions is not capable of fulfilling such an instrumental VET mission.

CHAPTER V. DISCUSSION

This part of the thesis aims at thorough discussion of how competence-based (CB) curriculum is enacted in VET systems and further elaboration of the research findings in the light of academic literature, results of other research and education policy documents.

The intention of the thesis was to understand and reconstruct the reality of CB curriculum in school-based VET systems of Lithuania and Italy from the position of the main actors of the processes, vocational teachers and trainers and other responsible persons, and to explore the implications of these processes for them and for VET mission more generally. It analyzed how the reality around competence development phenomenon is constructed and co-created on macro, meso and micro levels, for and within VET system, and meaning making activities of CB curriculum enactors, their instructional practices and choices taken to enact it.

The chapter is divided into two sections. The first one will focus more generally on CB education in school-based VET systems, its variants and implications for VET mission and goals, whereas the other part will discuss the research findings on CB curriculum enactment.

Revisiting competence-based education in school-based VET systems

The research was initiated out of the need to challenge epistemological and methodological assumptions about CB VET curriculum, its' utility for vocational teachers and trainers, thereof interventions and concerns, and its' value for learners in countries with school-based VET systems.

CB education has become an educational phenomenon and is referred to characterize educational aims (development of learners' 'competence') and curriculum principles in many countries and at supranational level. It has been noted that the question of competence in educational policy is regaining attention (Gasquet et al., 2021). At the same time, recent comparative analyses of VET curriculum constructed in the tradition of CB education mainly are carried out beyond Europe (Baumeler, 2019; Misbah et al., 2019). Hence, it is worth continuing exploration and theorization of unique models of CB VET curriculum, their variants and transformations from instrumental and from value perspective (Biesta & Burbules, 2003).

CB education is a multilayer phenomenon in which competence and competencies become implicit or direct orientation for curriculum design, instructional and assessment activities (Hodge et al., 2020; Mulder & Winterton, 2017). The literature review and comparative analysis of two countries' VET curriculum policies and reforms has shown that CB curriculum model may have different variants in continuum between 'competence as a

horizon' (Italy) and 'competence as an organizing curriculum unit' (Lithuania). The former means that competence frameworks serve as a guidance for curriculum design and implementation and in the latter competencies become a point of departure in designing and structuring curriculum and a point of arrival in assessing learning outcomes.

Based on the grounds of social constructionism, efforts to arrive at a single definition of competence are doomed, a more feasible goal is the agreement on 'viable' conceptualizations that would work for a concrete situation based on the views of people involved, goals and context (Stoof et al., 2002). Although linguistic and epistemological aspects of the concept as such were out of the direct scope of this research, after conducting it the author arrived at a conclusion that the way how narrowly or broadly and holistically competencies are defined has implicit socially constructed meaning and transmits a message about qualities of a person VET system aims to develop. The research clearly demonstrated that competence profiles and curriculum texts have a discursive power on research participants in both countries, thus the way how competence is defined and operationalized needs careful consideration. The authority of these texts was also noted by Ball et al., 2012; Billett, 2016; Edwards & Usher, 1994; Hodge, 2017.

The present model of nationally designed curriculum in Lithuania sufficiently broadly governs curriculum but at the same time leaves certain spaces for teachers' maneuvers depending on teacher agency. However, interviewed teachers claimed that recent introduction of a unified final theory exam for VET graduates limits their agency in terms of flexible and autonomous actions in realizing curriculum. These results match those observed by Tacconi et al. in an earlier study (Tacconi et al., 2020). Qualifications profiles and figures in Italy are broad references with curriculum goals and formal rules decided on regional and local levels. In Italy, the level of autonomy of teachers and trainers in curriculum decisions is different and implies that local school level curriculum making processes are more vital. Curriculum researchers (Kelly, 2009) criticize approaches which limit or do not encourage local school level curriculum making processes and do not contribute to evolution of (educational) curriculum. There needs to be the space 'to negotiate some of the content and design outcomes at the local level' (Billett, 2011, p. 210). Moreover, participation of teachers in the processes of curriculum development impacts the growth of their professional capital (Hargreaves & Fullan, 2012).

One of the research interests was to disclose the transformation of the understanding of competence and its components by the vocational teachers and trainers involved in the design and application of the CB curriculum. Research participants from both countries consider key

competences and work-related or personal attributes to be increasingly important in addition to more specific work-related occupational competence. Their opinion is partly constructed by opinions collected from labor market actors. This is also in line with recent research and theoretical insights about the importance of general personal competences for work readiness of VET graduates (Benadusi & Molina, 2018; de Bruijn et al., 2017; Hager, 2017; Krikštolaitienė et al., 2020; Löfgren et al., 2020; Marini, 2021; Prikshat et al., 2019). A surprising revelation in Lithuanian case appeared to be prioritization of practical skills at the cost of a rather widespread devaluation of knowledge by the vocational teachers, what is a crucial point of criticism accompanying CB education in other academic works (Wheelahan, 2009, 2016; Young, 2004, 2008).

Another issue worth considering is the contemporality and relevance of CB approach for VET practice and VET learners. In this respect the research has touched the tensions between adopted CB curriculum models and the mission and purposes of VET systems. The purposes of VET are socially constructed throughout a lengthy time within certain social, economic, cultural context and are subject to multiple interests, national and international powers. According to Fischer (based on Greinert, 1998), VET fulfils selection and allocation, qualification, utilization and societal integration and retention functions (Fischer, 2020). In current political and academic discussions about a future vision of VET in analyzed countries and beyond them the shift from instrumental VET goals in terms of utilitarian labor market needs satisfaction towards more general goals and holistic personal preparation for occupational and social practice is very noticeable (Albert & Marini, 2022; Allais & Shalem, 2018; Benadusi & Molina, 2018; Cedefop, 2020d; de Bruijn et al., 2017; Krikštolaitienė et al., 2020; Young & Hordern, 2020). Billett (2011) points to economic, personal, social and societal imperatives having influence for VET goals and provides for typology of broad vocational education goals ranging from individual level, occupational culture level, economic and social level and societal level. Fulfilment of labor market needs is not the sole target for VET curriculum anymore and the afore mentioned authors call for transformation of VET curriculum towards the direction of educationally valuable and educationally strong curriculum. Yet, opponents of CB education criticize it exactly for simplification of occupational and social practice, reductionism and narrow focus on competencies needed currently in the labor market. Thus, VET curriculum needs to accommodate the goals of preparing for labor market, social / civic participation, personal growth and further education, however incorporating all these goals is not without problems and may be rejected by some of VET stakeholders (de Bruijn et al., 2017, p. 25).

Variations of CB approaches can be explained by skill formation system. CB approach originated in the 'Anglo-Saxon' or market-based VET systems with strong focus on narrow workplace skills needs and company-based provision of training (Tūtlys & Spöttl, 2017). Acceptance of CB approach in the countries with other models of skill formation is very diverse. Collective skill formation systems accept scrutinous competence frameworks with resistance and precautions, thereof curriculum changes are overly formal and superficial and do not have significant impact on the existing processes of training, since dual apprenticeship already has deep traditions. The countries with school-based VET system, when put under pressure to improve the relevance of VET curricula to labor market needs, are more enthusiastic towards instrumental CB curriculum models. Such models are strongly influenced by policy borrowing and Europeanization (Powell & Trampusch, 2012) and later are negotiated and adjusted to country specifics. It is also necessary to have in mind the impact of labor market structure and economic situation on competence models. For example, there is evidence that large and small companies have different preferences for breadth of competencies of VET graduates (the latter expect more specific) and in favorable economic conditions businesses show less interest in public VET system (Billett, 2017; de Bruijn et al., 2017).

Returning to CB approaches in two countries analyzed, in Italy introduction and penetration of CB principle in VET sector succeeded in securing a more holistic and humanistic VET learner development and balancing equilibrium between key and occupation-specific competences development. Lithuanian VET policy is led by neoliberal and pragmatic labor market needs oriented skills agenda which fails to incorporate broader goals for VET policy and curriculum. Still, as signaled by empirical research in Italy, there is a concern over emerging performativity culture in VET curriculum with competence approach. Competencies validation and certification system reform is gaining speed in Italy; it introduces a powerful discourse and needs a cautious overseeing in order not to devaluate VET curriculum.

Lithuania has recently reformed its approach to qualification standards development and competencies construction with the aim of preparing learners for broader work processes instead of narrow concrete workplaces (Tūtlys & Spöttl, 2017). Similarly, labor process approach for VET curriculum construction is advocated by Gamble, who claims that such approach '*agrees with competence approaches that work should be the basis of vocational curriculum, but disavows an assumption of direct relationality between education and work*' (Gamble, 2016, p. 226). Although broader work processes expressed in a set of competencies have become the basis for curriculum units – modules, this curriculum reform did not yet fully

succeed to completely convey the potential offered by this epistemological and methodological turn as evidenced by participants attitudes towards knowledge and more holistic competence.

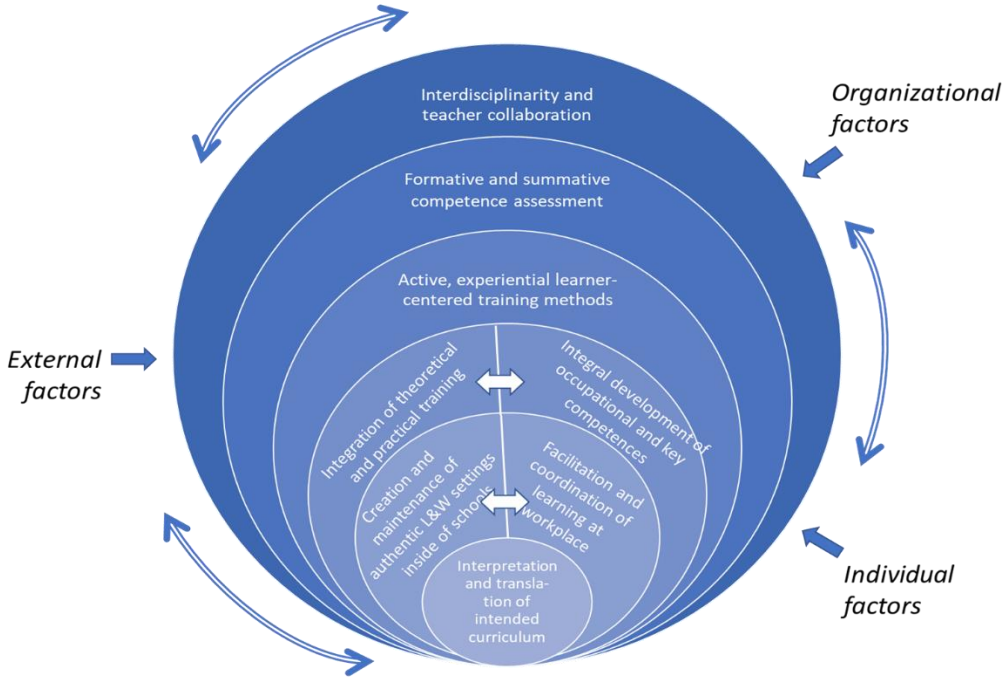
Enacting competence-based curriculum: processes, activities and implications for teachers and trainers

With this research it was aimed to descend to an empirical practice level of doing things (i.e. enactment of competence construct through VET curriculum) in particular contexts of school-based VET systems. By introducing 'enactment' perspective and immersing into teachers and trainers activity level the research complements existing research on comprehensive CB curriculum principles and powerful learning environments in CB education (de Bruijn & Leeman, 2011; Sturing et al., 2011). It also goes beyond interpretation and translation of curriculum texts (Ball et al., 2012) and considers full pattern of teachers and trainers' activities in analyzing curriculum enactment.

The curriculum enactment process has been conceptualized to consist of a wide range of processes (see Figure 12), including: (1) interpretation of documents governing qualifications and curriculum and their translation into intended teachers and trainers' curriculum, (2) creation and maintenance of authentic learning and working settings and situations inside of schools, (3) coordination and facilitation of learning at real workplaces, (4) connection and integration of theory and practice, (5) integral development of occupational and key competences, including work-related and more generic attitudes, (6) reliance on instructional methods that promote learner engagement and active participation, (7) formative and summative competence assessment. All these processes are overarched by (8) collaborative teachers' curriculum enactment: co-construction of curriculum, teamwork-based instruction and assessment strategies, sharing and networking.

Figure 12

Model of enactment of CB curriculum in school-based settings



Curriculum enactment is subject to institutional and personal agency and influences of external and internal factors (Ball et al., 2012; Billett, 2011; Miller et al., 2010) which also act as constraining frames beyond teachers' control (Lundgren, 1981). These frames belong to various levels (macro, meso and micro) and, in line with Lundgren, include constitutional frames (legal acts governing and regulating teachers' activities), organizational frames (organizational structures and decisions having impact on curriculum enactment processes) and physical frames (buildings, workshops, technical-material training resources hindering curriculum enactment). Enactment is also dependent on economic, personal (teachers and learners attributes) and physical resources. These frames together with available social and material resources condition different institutional realities for enacted curriculum and construct diverse cultural ecologies at schools which, in turn, may encourage and nurture or hinder and weaken teacher agentic behavior (Edwards et al., 2009; Priestley et al., 2012).

A key aspect is how this enactment process shapes and transforms teachers and trainers' activity. Research discloses that CB curriculum enactment and vocational pedagogy for developing VET learners' competence have diverse implications for vocational teachers' work, including: (1) fostering integral and holistic approach to competence, (2) evoking teachers' capacity to interpret and translate documents which govern curriculum into rich and authentic educational practice, (3) requiring recontextualization of knowledge to occupational situations,

(4) strengthening teachers' cooperation in defining and enacting intended curriculum, (5) facilitating interdisciplinarity in restructuring curriculum areas and instructional activities, (6) applying learner-oriented didactic techniques and combination of formative and assessment strategies. These findings are in agreement with findings of Tacconi and colleagues who based on quantitative study of teachers and trainers in Italy and in Lithuania suggest the changed contents of work tasks and responsibilities of vocational teachers caused by competence-based orientation of curriculum and work-based learning practices (Tacconi et al., 2020).

In the view of academic literature about reductionist nature of CB curriculum (Avis, 2017; Benadusi & Molina, 2018; Krikštolaitienė et al., 2020; Nicoli, 2019; Wheelahan, 2015) teachers and trainers' critical and reflective curriculum-making decisions become increasingly important. This embraces 'hermeneutically aware focus' at social and occupational practice and its representation in curriculum texts (Hodge, 2018; Hodge et al., 2020), open and critical interpretation and translation of intended curriculum goals into deeper pedagogical actions (Unwin & Huddleston, 2013), professional judgment in selecting competence development and assessment strategies (Hager, 2017). For Doyle (2017) an interpretation of content is 'in the core of curriculum processes in classroom' and is 'an essential component of practical change in teaching' (p. 226). Importance of teachers curriculum interpretative actions and capacities has been addressed by several other authors (Billett, 2016; Gomez & Tacconi, 2015). In the empirical research the phase of intended curriculum interpretation and translation also emerged as an important continuous encounter and interaction with documented VET intentions where teachers and trainers personally or in teams negotiate the meanings, particularize and compromise these statements considering local community, learners' needs, institutional and personal resources, sequence and plan learning situations, prepare training materials. Influence on curriculum implementation discourse at school, affecting own curriculum enactment model, taking risks for curriculum frames and content choices, being reflective towards present and future projections about own work and students' demands is a manifestation of teacher agency (Priestley et al., 2012; Vähäsantanen & Eteläpelto, 2011). In this way, dynamic interpretation and translation stage becomes an important space for experiencing individual and collective agency. As already noted, due to the presence of national curricula in Lithuania this phase is more vital in Italy.

Exploration of the intended curriculum interpretation and its translation into pedagogical actions, interdisciplinarity, integration of theoretical and practical training and integrated development of transversal key and occupational competences has emphasized the process of knowledge recontextualization performed by teachers and trainers. Many authors

(Allais & Shalem, 2018; Billett, 2014, 2016; Gamble, 2016; Heusdens et al., 2016, 2018; Hordern, 2019; Schaap et al., 2009; Spöttl et al., 2020; Wheelahan, 2009, 2012) have researched complexity and diversity of knowledge in VET curriculum and advocated that VET learners need to access diverse types of knowledge. Recontextualization of knowledge incorporates 'selective appropriation, delocation, relocation, refocusing, and relating of discourses' (Bernstein, 2000 cited in Hordern, 2014). Barnett has further elaborated on recontextualization in VET context noting that it embraces two types: reclassificatory recontextualization of disciplinary knowledge and of technological and organizational processes and pedagogical recontextualization by transformation of disciplinary knowledge for academic subjects and of situated knowledge together with already 'reclassified', reorganized disciplinary knowledge for vocational pedagogy (Barnett, 2006). The present research detected the same processes and has led to conclusion that recontextualization is found at all above mentioned curriculum enactment phases, i.e. teachers regularly invoke it in their instructional activities; knowledge is also recontextualized for the sake of key competences development and in construction and implementing interdisciplinary activities. Barnett asks who and at what levels makes framing decisions about knowledge in VET curriculum (selection, classification, framing, sequencing). Our research shows that they are mainly made by teachers and trainers and for this purpose they need to have appropriate strategies.

It should be also noted that for Lithuanian participants CB curriculum reform resulted in closer theory-practice integration through selection of knowledge and its appropriation for work processes and maintaining close relationship between taught knowledge and practical demonstration of work processes. Such an emphasis on theory-practice integration signals two things. First of all, in the past the unity of theory and practice was not so strong and secondly, for the participants this change was so powerful that it has affected their identity, their methods of work, cooperation with other teachers and competence in terms of new knowledge and skills. When compared with other research, theory-practice integration is usually analyzed from dual learning stance (Choy et al., 2018), thus it has emerged as a different phenomenon. Looking at CB curriculum enactment through theory-practice integration stance in two countries and thereof comparison resulted in interesting revelation. Lithuanian research participants reflected mainly on integration between vocational knowledge transmission and practical skills training. For Italian participants the links between theory and practice were sought through interdisciplinary synergies and a more systematic integration of general education, academic, knowledge and vocational knowledge.

Since the research was carried out in the context of school-based systems, one of the issues for consideration is teachers and trainers' actions to develop a 'competent and proficient' learner under particular conditions of school-based training. In school-based training the access to workplace curriculum is limited. This is particularly problematized in Lithuania where deep and rich workplace experience became an issue due to revised curriculum framework and increasing employers' disengagement. Scholars defend the importance of social aspect of learning at workplace by 'legitimate peripheral participation', observation, relation with and gradual integration into 'community of practice' (Lave & Wenger, 1991) and affordance of workplace curriculum with implicit workplace knowledge, skills, and attitudes (Billett, 2014; Hordern, 2014). Availability of school-based and workplace learning settings, taking advantage of knowledge and skills which each of these sites offer and learning from crossing their boundaries is the most rewarding approach to learning (Bakker & Akkerman, 2019; Choy et al., 2018). When these elements are neglected the perspective of work-ready graduates and their smooth integration into community of practice weakens.

This brings us to question how the deficiency of systemic workplace curriculum may be compensated for. It is important to take advantage of school environment offerings by conveying more theoretical and abstract knowledge, teaching learners to self-reflect and interact with peers and designing situations to try-out and practice what they learn in order to integrate knowledge, skills and attitudes (Baartman & de Bruijn, 2011). Indeed, following Jonnaert et al. competence is developed when used in situation (Jonnaert et al., 2007). This research reconfirmed that the core principle for competence development is knowledge-supported practicing in real, authentic and meaningful learning situations by experiencing the entire action or product cycle, from planning to quality evaluation.

Authentic, hybrid learning and working settings, workshops and laboratories with workplace simulations are dominating arena for developing occupational competence. This is consistent with other studies on authentic, powerful and meaningful learning environments within school settings (Biemans et al., 2013; Billett, 2016; Cremers et al., 2016; Jossberger et al., 2010; Placklé et al., 2020). In addition, projects outside of school and actual experience in the field of practice with the aim of doing things and not only observing others serve this purpose. This is in line with findings of Tyson (Tyson, 2016) who explored how to strengthen school-based vocational training and make it more authentic and meaningful in practicing skills through the use of cultural and social projects. Indeed, such social projects with charitable activities beyond school-based experiences (for example, hairdressing services for seniors in retirement homes) are valuable for enriching and diversifying learners' experiences and

developing their key competences. These activities bring multiple value - involvement in meaningful activities shapes learners' occupational competence, learners are stronger connected with vocation (professional identity), they develop and integrate work values, shape civic and responsible approach to the environment, society and its social problems (participation in democracy).

Since work-ready attitude of learners and graduates very much is associated with their competences of more transversal nature and attitudes, such as capacity to adapt and learn, capacity to solve problems, capacity to search for information, flexibility, motivation and responsibility, teachers deliberately integrate these into vocational situations. The same may be said about higher order thinking skills, self-reflection and critical thinking capacities of learners – research participants reflected that these capacities are a part of their teaching strategy. Still, Krikštolaitienė and colleagues note the lack of critical thinking components in VET curriculum and speculate that without it learners and teachers may fail to overcome reductionist, utilitarian and technocratic understanding of vocation (Krikštolaitienė et al., 2020). They underline the necessity to develop key competences and critical thinking in preparing for 'the world of big changes and challenges' and invite teachers to develop learners' openness, constructive questioning, creativity, citizenship and tolerance, to promote sharing of knowledge with others (p. 15).

Self-reflection is considered to be one of the core competences of professionals (Schon, 1983), a meta-competence of practitioners (Cheetham & Chivers, 1998). It is also an intellectual tool for learners to integrate knowledge, skills and attitudes and handle novel situation (Baartman & de Bruijn, 2011). Thus, it is natural that teachers and trainers give significance to its development and internalization. Professional identity formation receives little attention in intended curriculum, however it is another important target for teachers' pedagogical interventions. All this resonates with the conceptual framework of the research in which learners were recognized as micro-level actors of skill formation system by playing their role in experiencing curriculum and later deploying and further developing their competence at labor market. In this way a micro level of skill formation system may be stimulated in school-based learning reality. In the current context of fast social, economical, occupational transformations, micro-level of skill formation becomes crucial as never (Marini, 2021). Empowerment of this level requires certain instructional approaches that would help teachers to develop reasoning, resilient and agentic VET learners.

Analysis of teachers pedagogical strategies resulted in identifying a wide repertoire of active learner centered instructional methods very much in line with categorization of learning

and teaching methods in vocational education by Lucas and colleagues (Lucas et al., 2012). The aim of these methods is, on the one hand, to pass knowledge and connect theory and practice in a more powerful and meaningful for learners' way, and on the other - to keep learners engaged and active, responsible for their learning and shape their professional identity. A number of authors have claimed that CB curriculum presupposes greater self-regulation and self-initiative from learners (Biemans et al., 2013; Bohne et al., 2017; Khaled et al., 2016), yet enactment of these intentions is not without problems both from the point of view of teachers' instructional and learners' learning strategies. In this respect, research participants' notions on transformation of a teacher role to incorporate learners' coaching are making sense.

Competence development is supported through formative assessment and Lithuanian curriculum model with clear competence-based modular frames and learning outcomes facilitates such type of occupational competence assessment, whereas for Italian respondents it appears to be more challenging. However, formative assessment of key competences remains latent and underdeveloped, thus teachers do not take advantage of an important part in shaping of key competences and attitudes in terms of *assessment for learning* and rarely incorporate *assessment as learning* of key competences (learners' self-assessment and self-reflection) into assessment practices. Other studies exploring competence assessment detect similar challenges and problems (Eizagirre Sagardia et al., 2018; Fastré et al., 2014; Morselli, 2018).

A final important consideration is implications of CB curriculum model for teachers' competence and their agency. Unless training is shared by different teachers (dominating practice in Italy), CB education is constructing a more versatile teacher (increasingly dominating practice in Lithuania) who is a labor market agent and an expert of occupation, an educationalist conveying knowledge and developing key competences and a coach with a capacity of preparing work-ready students with needed resources, attitudes and values. Hence, the research sends a message of growing requirements for teachers' competence. This does not conflict with the collaborative curriculum enactment principle – collaboration is a thread running through all curriculum enactment processes. Importance of teachers collaboration in implementing CB curriculum has been also noted by other authors (Gulikers et al., 2010; Runhaar et al., 2016; Tillema et al., 2000; Truijen et al., 2013; Wijnia et al., 2016).

In line with other studies on teachers engagement with reforms (Goodson & Ümarik, 2019; Priestley et al., 2015; Vähäsantanen, 2015; Vähäsantanen & Eteläpelto, 2009, 2011) the research revealed that teacher agency in CB curriculum model may manifest diversely from being supportive of change and motivated to creatively innovate to compliant, resistant or critical stances. The proactive stance depends on the level of engagement with the reform, for

instance, by contributing to national core curriculum design in Lithuania, attending capacity building events or roundtable discussions for devising new qualifications in Italy.

It is obvious from Lithuanian curriculum reform example that top-down reforms, of which CB education is a part, need to be launched differently if we wish that teachers would contribute to them with their professional agency. In contrast to macro level reforms and initiatives teachers manifest stronger agency in taking decisions about their personal strategies and actions. In both countries CB curriculum models imply more intensive collaborative work what shapes not only individual but also collective agency as also noted by Hökkä and colleagues (Hökkä et al., 2017). This collective agency manifests in negotiations of curriculum texts, devising institutional approaches, collaborative instruction and even assessment. Thus, collective agency can also be considered as a factor supporting personal teacher agency. If reinforced, it has a meaningful influence on schools' curricular discourses and, at the same time, resources individual teachers' work.

Buchanan (2015), Vähäsantanen and Eteläpelto (Vähäsantanen, 2015; Vähäsantanen & Eteläpelto, 2011) highlight the interrelatedness of professional agency and professional identity where the former shapes and maintains the latter, but at the same time, the latter is the resource for the former (Vähäsantanen, 2015, p. 10). As noted by Vähäsantanen and Eteläpelto (2011), conflicts between current and expected identity problematize negotiations of professional identity and, consequently, professional agency. In Lithuanian case due to in-depth changes brought by new curriculum model teachers indeed experienced changes in their professional identity, in terms of transformation of their professional roles, negotiations of work values and future prospects. Professional identity negotiations supported emergent professional agency when pressed to cross boundaries between theory and practice teaching, professional and key competence development. In Italian case the curriculum change also has induced teachers' personal and collective negotiations and critical assessment of educational objectives and personal or peers' strategies, questioning of 'traditional' educational approaches as well as increasing practical aspect in knowledge discourse, as a result, challenging, constraining or reinforcing or manifestations of professional agency.

Thus diverse orientations and reactions to curriculum change may be explained by teachers' professional identity and agency defined and mediated by institutional ecologies, available social, material, methodological resources inside and beyond school, constraining frames, past education and labor market experiences, own current and projective determination to progress, to innovate, to develop own capacities, to take risks of committing to develop holistic, agentic learners considering their future prospects (Benadusi & Molina, 2018; Marini,

2021; Mičiuliene et al., 2020; Winch, 2014). When the vision of learners' competences as capabilities for occupational and life projects confronts affordances of curriculum, agentic teachers take risks to negotiate and adjust it according to their values and beliefs. Teachers with firmer pragmatic and creative-freedom attitude patterns are better prepared to overcome reductionist nature of curriculum, to resolve deficiencies and take out positive aspects and creatively build on them instructional strategies.

CHAPTER VI. CONCLUSIONS

With this research it was aimed to understand the contexts, institutional framework, process, features and changes of enactment of CB curriculum from the perspective of vocational teachers and trainers working in school-based VET pathway. Italy and Lithuania have been chosen to introduce comparative perspective and seeking to better understand the phenomenon and its varieties in different historical, cultural, economic contexts. The research took a multi-level focus and theorized the 'what' and 'how' of curriculum enactment processes in the context of overall skill formation system. The results revealed many important themes: remaining conceptual contradictions, dilemmas and tensions in the language of 'competence' and 'competence-based education', the curriculum enactment processes, constraining and supporting factors of curriculum enactment, manifestation of teachers' agency in these processes.

The investigation of the CB curriculum model (*the what*) has shown how varied the phenomenon is in different countries. The founding principles of competence constructs and the level of relatedness of competence frameworks and curriculum are among the reasons for these variations. In the Italian approach occupational and more transversal competences are regarded as a horizon to be achieved at the end of curriculum, whereas Lithuania structures curriculum units on the basis of intended, primarily work-related, competencies. The research disclosed limitations of VET curriculum in which the perceived goal is the development of learners' occupational 'competencies' (similar to practical skills) and promises of more balanced, educationally strong vocational curriculum underlying integrated 'competence' and incorporating its functional/occupational and more transversal cognitive, personal and social dimensions.

The curriculum enactment process (*the how*) appeared to consist of a complex pattern of activities starting with interpretation of intended goals and curriculum and finalizing with assessment of learners' competence achieved. This process is founded on teachers and trainers' collaborative activities. More specifically the research has shown that:

- The intended curriculum interpretation and translation phase appears to be vital for experiencing of teacher agency. It incorporates sense-making and evaluation of curriculum governing documents and specifications of competence expected from VET graduates, negotiation with personal knowledge and experience, adjustment, recontextualization, sequencing and transformation of competence and curricular texts into own intended curriculum;

- The development of learners' competence in school-based setting relies on (1) design of powerful and meaningful learning situations organized in learning settings mirroring workplaces, which showcase and help learners to experience authentic production and services and interact with real clients and practice agents - employers and practitioners, and (2) coordination and facilitation of meaningful and valuable experience at real workplaces organized throughout the programme;
- CB education model sets competence as a target of curriculum and this has a potential to make curriculum more integrated. This integration is achieved with two common strategies: firstly, by strengthening unity of theoretical and practical training (the Lithuanian CB education model) and unity of vocational knowledge, skills and disciplinary knowledge (the Italian CB education model) and, secondly, integrated development of occupational and key competences, including attitudes;
- CB education model is supposed to contribute to 'activating' a learner by mobilizing his internal resources to handle diverse situations and solve problems autonomously and responsibly. Active, experiential, learner-centered methods serve the purpose of motivating learners for knowledge-based practicing and knowledge construction, shaping of learners' key competences and attitudes and building their professional identity.
- In CB education model learning is finalized with attesting that a person has achieved competence in accordance with a set standard or competence profile. In the research competence assessment emerged as a complex process consisting of multiple stages. Formative assessment, initial and intermediate diagnostic assessment and summative assessment stages have been differentiated. This phase was rather problematized by research participants in Italy. It was also shown that assessment of key competences is underdeveloped and is very often carried out latently.
- Finally, collaborative enactment emerged as the key principle and transformation in curriculum enactment for both countries. Co-design, collaborative instruction and assessment, teamwork and peer-learning are part of all phases of enactment.

Curriculum enactment processes emerged as a very dynamic and relational process in continuous interaction with macro level (national policies, authorities) and micro level (learner experiences and actions) and subject to manyfold external and internal factors constraining or supporting enactment.

The main country differences that emerged in curriculum enactment (*the how*) are related to the level of autonomy in curriculum decisions with Italian teachers and trainers

having higher freedom in decisions on how to reach competence and to respond to local and learners needs. A Lithuanian model revealed to be a more technicists translation and implementation approach, at the same time stressing the role of teachers' agency in enriching intended and enacted curriculum. The differences were also found at learning setting arrangements level with Lithuanian participants counting more on hybrid learning and work environments and Italian participants succeeding in more intense workplace learning, level of connectivity between different curriculum parts (stronger connectivity in Italian cases), situated methodological collaboration (more systemic in Lithuanian cases), competencies' formative assessment (more advanced in Lithuanian cases). In general, it may be concluded that CB curriculum model in Lithuania, which is based on firmly classified modules, had a much more powerful transformative effect on vocational teachers work and professional identity.

Although majority of research participants see the meaningfulness of CB approach for their work and find more gains than losses in CB curriculum model, the enactment is far from flawless. The approach has potentially valuable attributes for VET curriculum and VET learner, nevertheless, the research has problematized the analyzed curriculum model in several aspects.

Considering critical literature about CB education model, the risk of impoverished curriculum is plausible. Decisions on curriculum goals and model are implications for macro-level skill formation processes. The research demonstrated how teachers and trainers may be impacted and succumb to the authority of detailed curriculum documents with scrutinized lists of competencies and learning outcomes, indicative frames for theoretical and practical training. Furthermore, detailed assessment criteria or final exam tasks may become a constraining factor for teachers' autonomy and creative curriculum enactment decisions. Such an approach frames and limits teacher agency and brings into discord the possessed professional capital and self-realization. The other areas brought to attention which call for teachers deeper pedagogical strategies are access to and meaningfulness of workplace curriculum, balanced attention to all aspects and dimensions of competence, treatment of curriculum documents more holistically and overcoming narrow focus of VET towards satisfaction of immediate skill problems by integrating professional and personal development axis.

Finally, a number of important limitations of the research need to be considered. In the conceptual framework curriculum enactment process was positioned on meso-level of skill formation system, thus interviews did not include macro-level actors and investigation of this level was based on document analysis. The research has examined only intended and enacted

curriculum and did not explore how it is experienced from the perspective of students. This is important limitation since learners are the ones on who the final achievement of competence is dependent. By adopting qualitative paradigm, the research focused on processes in the field and did not aim at analyzing the effect of CB curriculum in terms of learners' social or economic gains. The research would have been enriched by pedagogical processes observation and analysis, however it was not possible due to constrains of the COVID-19 pandemic.

Further research might explore how learners experience CB curriculum in order to understand what influence it has on their agency, how different aspects of holistic competence occur and what is their meaningfulness for professional and personal development. It would be interesting to extend the research to countries with other skill formation systems (such as collective and liberal) using the same conceptual framework and curriculum enactment model. The stage of intended curriculum interpretation and translation is often overlooked with only few scholars having dealt with it in VET context, thus it could be explored in further research taking discourse analysis or narrative analysis perspective.

CHAPTER VII. RECOMMENDATIONS

The research findings lead to a number of policy and practice recommendations.

The research has revealed that many teachers and administration staff representatives experienced various tensions and dilemmas at the start of the curriculum change. Moreover, research participants from both countries noted that they still find 'competence language' ambiguous and that they need guidance on how to transform theoretical and methodological aspects of competence into concrete, daily instructional activities. VET curriculum reform, as any other educational innovation, needs to be implemented in a cyclical and iterative manner covering the stages of model of systemic innovation in education as proposed by OECD: identification of needs, development of innovation, implementation, monitoring and evaluation with a foundational role of knowledge and evidence (OECD, 2009). Evidence on curriculum change and its positive effect for learners together with observed weaknesses and the ways to address them should be properly communicated to community of practitioners through dedicated thematic events and training seminars, reports, articles and guidance material. Teachers and trainers should be adequately supported with training resources, guidance and reference materials, capacity building events and on-the-spot methodological consultation in preparing for and throughout curriculum change. Information campaign preceded by negotiations and discussions about the change and its value needs to be in place.

The thesis points to the need for competence texts (standards, profiles and similar), curriculum and its governing documents that would support and not hinder teachers' agentic capacity in planning and implementing curriculum. Competence texts should trustfully reflect broad work processes and competencies, knowledge, skills, attitudes needed to handle them professionally. The quality of these documents shouldn't be questioned by labor market authors, and they should be recognized by educationalists. This implies the need for well balanced and active involvement of all these actors in the design, development and maintenance of the competence texts.

The empirical research has detected certain epistemological problems and tensions when a concrete occupational competencies become a structuring unit of training programme signaling risks to knowledge base and development of key competences of learners. A reasonable approach to tackle it is further strengthening and promotion of the 'work process' or 'labor process' logic as the basis for curriculum. Key competences and attitudes development can be appropriately and systemically addressed through interdisciplinary and

collaborative co-construction and co-implementation of curriculum by securing a certain space in curriculum for this purpose at the local discretion of teachers and trainers.

Conceptualized curriculum enactment model proposes a framework for continuing professional development (CPD) courses and may serve as a heuristic devise for teachers and trainers self-reflection and independent learning. In designing teachers and trainers' capacity building all phases of curriculum enactment cycle, its' problematized areas as well as ontological and epistemological foundations of learners' competence development need to be taken into account. Thus, a combination of theory-based and practice-based CPD is highly appropriate.

The empirical research revealed a broadening competence profile of teachers towards a 'universal teacher'. Capacity building should address pedagogical / andragogical, transversal and occupational competences demands. Teachers and trainers need broader pedagogical education and diverse pedagogical knowledge and capacities for realizing richer and deeper pedagogical practices, securing appropriate level of learners' knowledge and key competences, enriching curriculum with broader educational and personal development goals and preventing superficial application of CB principles and fragmented and reductionist focus on narrow occupational competencies. Challenging of teachers' perspective, for example through academic studies, is needed. While considering school-based learning specificity and limitations of authentic workplace curriculum under this model, training for the occupational expertise has to be organized in a more systematic and regular manner and in close cooperation with labor market actors.

In reference to more educationally strong and valuable competence-based curriculum model implementation, it is recommended to direct CPD of vocational teachers and trainers to the following areas: meaningful connection of theory and practice, development of learners' key competences, personal and work-ready attitudes, technological innovations in the occupational area, reflective design of competence-based curriculum, personalization and individualization of learning processes, mentoring and guidance of learners, mediation of boundary-crossing between school-based and workplace learning, synergy of formative and summative competence assessment, curriculum co-design and co-teaching. This also implies significant change of the occupational status and even level of qualification of the vocational teacher and trainer in the school-based VET system.

REFERENCES

Adamson, B., & Morris, P. (2007). Comparing curricula. In M. Bray, B. Adamson, & M. Mason (Eds.), *Comparative education research: Approaches and methods* (pp. 263–282). Springer Netherlands. https://doi.org/10.1007/978-1-4020-6189-9_11

Addis, M., & Winch, C. (2018). Introduction. In M. Addis & C. Winch (Eds.), *Education and expertise* (pp. 1–20). John Wiley & Sons, Incorporated.

Albert, L., & Marini, D. (Eds.). (2022). *La valutazione dell'esperienza duale nell'istruzione e formazione professionale: Linee di sviluppo del sistema nazionale*. Il mulino.

Allais, S. (2017). Labour market outcomes of national qualifications frameworks in six countries. *Journal of Education and Work*, *30*(5), 457–470. https://doi.org/10.1080/13639080.2016.1243232

Allais, S., Raffe, D., & Young, M. (2009). *Researching NQFs: Some conceptual issues*. International Labour Office, Employment Sector, Skills and Employability Department. https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_119307/lang--en/index.htm

Allais, S., & Shalem, Y. (Eds.). (2018). *Knowledge, curriculum, and preparation for work*. BRILL. https://doi.org/10.1163/9789004365407

Alvesson, M., & Sköldberg, K. (2009). *Reflexive methodology: New vistas for qualitative research* (2nd ed). SAGE.

Alvunger, D. (2018). Teachers' curriculum agency in teaching a standards-based curriculum. *Curriculum Journal*, *29*(4), 479–498. https://doi.org/10.1080/09585176.2018.1486721

Anderson-Levitt, K., & Gardinier, M. P. (2021). Introduction contextualising global flows of competency-based education: Polysemy, hybridity and silences. *Comparative Education*, *57*(1), 1–18. https://doi.org/10.1080/03050068.2020.1852719

Andriušaitienė, D. (2018). Occupational standards: A key to improving match between skills and labour market needs in Lithuania. *Economics and Culture*, *15*(2), 88–98. https://doi.org/10.2478/jec-2018-0023

Angotti, R. (2018). *Vocational education and training in Europe: Italy*. Cedefop. https://libserver.cedefop.europa.eu/vetelib/2019/Vocational_Education_Training_Europe_Italy_2018_Cedefop_ReferNet.pdf

Angotti, R., Del, A., & Dordit, L. (2015). La struttura dell' offerta di formazione professionale pubblica in Italia. *Scuola Democratica*, *3*, 597–616.

Apple, M. W. (2008). Curriculum planning: Content, form, and the politics of accountability. In *The SAGE handbook of curriculum and instruction*. SAGE Publications Inc.

https://dx.doi.org/10.4135/9781412976572

Atkinson, P., & Coffey, A. (2004). Analysing documentary realities. In D. Silverman (Ed.), *Qualitative research. Theory, methods and practice* (2nd ed.). SAGE Publications.

Avis, J. (2014). Workplace learning, VET and vocational pedagogy: The transformation of practice. *Research in Post-Compulsory Education*, *19*(1), 45–53. https://doi.org/10.1080/13596748.2014.872920

Avis, J. (2017). Beyond competence, thinking through the changes: Economy, work and neo-liberalism. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 183–202). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_9

Baartman, L. K. J., & de Bruijn, E. (2011). Integrating knowledge, skills and attitudes: Conceptualising learning processes towards vocational competence. *Educational Research Review*, *6*(2), 125–134. https://doi.org/10.1016/j.edurev.2011.03.001

Bagnall, R. G., & Hodge, S. (2017). Using an epistemological perspective to understand competence-based vocational and professional education. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 125–144). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_6

Bakker, A., & Akkerman, S. (2019). The learning potential of boundary crossing in the vocational curriculum. In *The Wiley handbook of vocational education and training* (pp. 349–372). https://doi.org/https://doi.org/10.1002/9781119098713.ch18

Bakker, A., & Akkerman, S. F. (2014). A boundary-crossing approach to support students' integration of statistical and work-related knowledge. *Educational Studies in Mathematics*, *86*(2), 1439–1449. https://doi.org/10.1007/s10649-013-9517-z

Ball, S. J., Maguire, M., & Braun, A. (2012). *How schools do policy: Policy enactments in secondary schools*. Routledge. https://doi.org/10.4324/9780203153185

Barabasch, A. (2017). Quality management of competence-based education. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 649–665). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_30

Barnett, M. (2006). Vocational knowledge and vocational pedagogy. In M. Young & J. Gamble (Eds.), *Knowledge, curriculum, and preparation for work for South African further education* (pp. 143–157). Human Sciences Research Council.

Barrick, R. K. (2017). Competence-based education in the United States. In M. Mulder (Ed.),

Competence-based vocational and professional education: Bridging the worlds of work and education (pp. 255–272). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_12

Baumeler, C. (2019). Competence-based vocational education and training and its cultural context sensitivity. *European Education*, *51*(1), 1–15. https://doi.org/10.1080/10564934.2017.1344503

Bazeley, P., & Jackson, K. (2014). *Qualitative data analysis with NVIVO* (2nd ed.). SAGE.

Benadusi, L., & Molina, S. (2018). *Le competenze: Una mappa per orientarsi*. Fondazione Agnelli, Il Mulino.

Berger, P. L., & Luckman, T. (1966). *The social construction of reality: A treatise in the sociology of knowledge*. Penguin Books.

Bertagna, G. (Ed.). (2020). *Il nuovo repertorio IEFP: Motivi, contenuti e opportunità di un rinnovamento a lungo atteso*. Studium edizioni. https://riviste.gruppostudium.it/sites/default/files/nuova_professionalita_3_2020_0.pdf

Biemans, H., de Bruijn, E., den Boer, P. R., & Teurlings, C. C. J. (2013). Differences in design format and powerful learning environment characteristics of continuing pathways in vocational education as related to student performance and satisfaction. *Journal of Vocational Education and Training*, *65*(1), 108–126. https://doi.org/10.1080/13636820.2012.755211

Biemans, H., Nieuwenhuis, L., Poell, R., Mulder, M., & Wesselink, R. (2004). Competence-based VET in the Netherlands: Background and pitfalls. *Journal of Vocational Education and Training*, *56*(4), 1–11. https://doi.org/10.1080/13636820400200268

Biemans, H., Wesselink, R., Gulikers, J., Schaafsma, S., Verstegen, J., & Mulder, M. (2009). Towards competence-based VET: Dealing with the pitfalls. *Journal of Vocational Education and Training*, *61*(3), 267–286. https://doi.org/10.1080/13636820903194682

Biesta, G., & Burbules, N. C. (2003). *Pragmatism and educational research*. Rowman & Littlefield.

Biesta, G., & Tedder, M. (2007). Agency and learning in the lifecourse: Towards an ecological perspective. *Studies in the Education of Adults*, *39*(2), 132–149. https://doi.org/10.1080/02660830.2007.11661545

Billett, S. (1995). Constructing the curriculum: National curriculum, teachers' practice and change. *New Horizons in Education*, 30–45. https://research-repository.griffith.edu.au/handle/10072/11001

Billett, S. (2011). *Vocational education: Purposes, traditions and prospects*. Springer.

https://doi.org/10.1017/CBO9781107415324.004

Billett, S. (2014). Integrating learning experiences across tertiary education and practice settings: A socio-personal account. *Educational Research Review*, *12*, 1–13. https://doi.org/10.1016/j.edurev.2014.01.002

Billett, S. (2016). Beyond competence: An essay on a process approach to organising and enacting vocational education. *International Journal of Training Research*, *14*(3), 197–214. https://doi.org/10.1080/14480220.2016.1254365

Billett, S. (2017). The Dutch vocational education system: Institutional focus and transformations. In E. de Bruijn, S. Billett, & J. Onstenk (Eds.), *Enhancing teaching and learning in the Dutch vocational education system: Reforms enacted* (pp. 269–294). Springer International Publishing. https://doi.org/10.1007/978-3-319-50734-7_13

Billett, S. (2019). Vocational education and the individual. In *The Wiley handbook of vocational education and training* (pp. 41–62). https://doi.org/https://doi.org/10.1002/9781119098713.ch3

Blossing, U., Roland, P., & Sølvik, R. M. (2019). Capturing sense-made school practice: The activities of the interviewer. *Scandinavian Journal of Educational Research*, *63*(7), 1007–1021. https://doi.org/10.1080/00313831.2018.1476404

Bogdan, R. C., & Bilken, S. K. (2007). *Quality research for education: An introduction to theory and methods* (5th ed.). Pearson.

Bohlinger, S. (2019). Ten years after: The 'success story' of the European qualifications framework. *Journal of Education and Work*, *32*(4), 393–406. https://doi.org/10.1080/13639080.2019.1646413

Bohne, C., Eicker, F., & Haseloff, G. (2017). Competence-based vocational education and training (VET): An approach of shaping and networking. *European Journal of Training and Development*, *41*(1), 28–38. https://doi.org/10.1108/EJTD-07-2016-0052

Boldrini, E., Sappa, V., & Aprea, C. (2019). Which difficulties and resources do vocational teachers perceive? An exploratory study setting the stage for investigating teachers' resilience in Switzerland. *Teachers and Teaching*, *25*(1), 125–141. https://doi.org/10.1080/13540602.2018.1520086

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

Brinkmann, S., & Kvale, S. (2015). *InterViews: Learning the craft of qualitative research interviewing*. SAGE Publications.

Brockmann, M., Clarke, L., & Winch, C. (2008). Knowledge, skills, competence: European

divergences in vocational education and training (VET)-the English, German and Dutch cases. *Oxford Review of Education*, *34*(5), 547–567. https://doi.org/10.1080/03054980701782098

Brockmann, M., Clarke, L., & Winch, C. (2009). Competence and competency in the EQF and in European VET systems. *Journal of European Industrial Training*, *33*(8), 787–799. https://doi.org/10.1108/03090590910993634

Bryman, A. (2015). *Social research methods* (5th ed.). Oxford University Press.

Buchanan, R. (2015). Teacher identity and agency in an era of accountability. *Teachers and Teaching*, *21*(6), 700–719. https://doi.org/10.1080/13540602.2015.1044329

Bunning, F. (2006). *The transformation of vocational education and training (VET) of reforms and developments*. Springer.

Busemeyer, M. R., & Schlicht-Schmälzle, R. (2014). Partisan power, economic coordination and variations in vocational training systems in Europe. *European Journal of Industrial Relations*, *20*(1), 55–71. https://doi.org/10.1177/0959680113512731

Busemeyer, M. R., & Trampusch, C. (2012). The comparative political economy of collective skill formation. In M. R. Busemeyer & C. Trampusch (Eds.), *The Political Economy of Collective Skill Formation* (pp. 3–38). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199599431.003.0001

Busemeyer, M. R., & Vossiek, J. (2016). Global convergence or path dependency?: Skill formation regimes in the globalized economy. In *The Handbook of Global Education Policy* (pp. 145–161). Wiley Online Books. https://doi.org/https://doi.org/10.1002/9781118468005.ch8

Carlini, A. (2017). *L' istruzione e formazione professionale (IeFP) nell 'esperienza degli imprenditori*. INAPP. https://inapp.org/sites/default/files/Paper_IeFP_Imprenditori.pdf

Carlini, A., & Crispolti, E. (2020). *Formarsi per il lavoro: Gli occupati dei percorsi IFTS e IeFP*. INAPP.

Carlini, D., & Infante, V. (2016). *Supporting teachers and trainers for successful reforms and quality of vocational education and training: Mapping their professional development in the EU – Italy*. Cedefop. http://libserver.cedefop.europa.eu/vetelib/2016/ReferNet_IT_TT.pdf

Cedefop. (2010). *Learning outcomes approaches in VET curricula. A comparative analysis of nine European countries*. Publications Office of the European Union. https://doi.org/10.2801/28989

Cedefop. (2012). *Curriculum reform in Europe. The impact of learning outcomes*. Publications

Office of the European Union. https://doi.org/10.2801/13194

Cedefop. (2014). *Terminology of European education and training policy: A selection of 130 terms* (2nd ed.). Publications Office. https://doi.org/10.2801/15877

Cedefop. (2015a). *Apprenticeship review: Lithuania. Signposting the apprenticeship path in Lithuania*. Publications Office. https://doi.org/10.2801/710428

Cedefop. (2015b). *The role of modularisation and unitisation in vocational education and training.* Publications Office. https://doi.org/10.2801/38475

Cedefop. (2015c). *Vocational pedagogies and benefits fort learners: Practices and challenges in Europe*. Publications Office of the European Union. https://doi.org/10.2801/294434

Cedefop. (2017a). *Apprenticeship review: Italy. Building education and training opportunities through*. Publications Office. https://doi.org/10.2801/63364

Cedefop. (2017b). *Defining, writing and applying learning outcomes: A European handbook*. Publications Office. https://doi.org/10.2801/566770

Cedefop. (2018). *Developments in vocational education and training policy in 2015-17: Italy. Cedefop monitoring and analysis of VET policies*. Cedefop. https://www.cedefop.europa.eu/files/italy_-_vet_policy_developments.pdf

Cedefop. (2020a). *Developments in vocational education and training policy in 2015-19: Lithuania. Cedefop monitoring and analysis of VET policies.* https://www.cedefop.europa.eu/files/developments_in_vocational_education_and_training_policy_in_2015-19_lithuania.pdf

Cedefop. (2020b). *Enhancing European cooperation in VET: Outcomes of the Riga cycle. Progress in common priorities for 2015-20: Final report*. Publications Office. http://data.europa.eu/doi/10.2801/79719%0AA

Cedefop. (2020c). *Key competences in initial vocational education and training: Digital, multilingual and literacy. Cedefop research paper No 78*. Publications Office of the European Union. http://data.europa.eu/doi/10.2801/671030%0AA

Cedefop. (2020d). *Vocational education and training in Europe, 1995-2035: Scenarios for European vocational education and training in the 21st century*. Publications Office. http://data.europa.eu/doi/10.2801/794471

Cedefop. (2022). *The future of vocational education and training in Europe. Volume 1: the changing content and profile of VET: epistemological challenges and opportunities* (Vol. 1). Publications Office of the European Union. http://data.europa.eu/doi/10.2801/215705

Cheetham, G., & Chivers, G. (1996). Towards a holistic model of professional competence. *Journal of European Industrial Training*, *20*(5), 20–30. http://www.alm-

online.net/images/ALM/proceedings/alm-01-proceedingsalm8.pdf#page=185

Cheetham, G., & Chivers, G. (1998). The reflective (and competent) practitioner: A model of professional competence which seeks to harmonise the reflective practitioner and competence-based approaches. *Journal of European Industrial Training*, *22*(7), 267–276. https://doi.org/10.1108/03090599810230678

Choy, S., Wärvik, G.-B., & Lindberg, V. (2018). *Integration of vocational education and training experiences: Purposes, practices and principles*. Springer Nature Singapore Pte Ltd. https://doi.org/10.1007/978-981-10-8857-5

Cremers, P. H. M., Wals, A. E. J., Wesselink, R., & Mulder, M. (2016). Design principles for hybrid learning configurations at the interface between school and workplace. *Learning Environments Research*, *19*(3), 309–334. https://doi.org/10.1007/s10984-016-9209-6

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). SAGE Publications Inc.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. SAGE Publications Inc.

Cunliffe, A. L. (2008). Orientations to social constructionism: Relationally responsive social constructionism and its implications for knowledge and learning. *Management Learning*, *39*(2), 123–139. https://doi.org/10.1177/1350507607087578

Daukilas, S., Mačiulienė, R., Kovalčikienė, K., & Kasperiūnienė, J. (2016). *Profesijos pedagogų veiklos turinys: Profesinis tobulėjimas, identitetas, ugdymo turinio metodologija ir kokybė*. Aleksandro Stulginskio universitetas.

Day, C. (2017). Competence-based education and teacher professional development. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 165–182). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_8

de Bruijn, E. (2012). Teaching in innovative vocational education in the Netherlands. *Teachers and Teaching: Theory and Practice*, *18*(6), 637–653. https://doi.org/10.1080/13540602.2012.746499

de Bruijn, E., Billett, S., & Onstenk, J. (2017). Vocational education in the Netherlands. In E. de Bruijn, S. Billett, & J. Onstenk (Eds.), *Enhancing teaching and learning in the Dutch vocational education system: Reforms enacted* (pp. 3–36). Springer International Publishing. https://doi.org/10.1007/978-3-319-50734-7_1

de Bruijn, E., & Leeman, Y. (2011). Authentic and self-directed learning in vocational education: Challenges to vocational educators. *Teaching and Teacher Education*, *27*(4),

694–702. https://doi.org/10.1016/j.tate.2010.11.007

Deij, A. (2021). *Policies for human capital development: Eastern partnership. An ETF Torino process assessment*. European Training Foundation. https://www.etf.europa.eu/en/publications-and-resources/publications/policies-human-capital-development-eastern-partnership-etf

Denzin, N. K., & Lincoln, Y. S. (2017). *The SAGE handbook of qualitative research* (5th ed.). SAGE Publications Inc.

Edwards, R. (2016). Competence-based education and the limitations of critique. *International Journal of Training Research*, *14*(3), 244–255. https://doi.org/10.1080/14480220.2016.1254366

Edwards, R., Miller, K., & Priestley, M. (2009). Curriculum-making in school and college: The case of hospitality. *The Curriculum Journal*, *20*(1), 27–42. https://doi.org/10.1080/09585170902763981

Edwards, R., & Usher, R. (1994). Disciplining the subject: The power of competence. *Studies in the Education of Adults*, *26*(1), 1–14. https://doi.org/10.1080/02660830.1994.11730594

Eizagirre Sagardia, A., Imaz Bengoetxea, J. I., & Rekalde Rodríguez, I. (2018). Characterisation of best practices in the development of cross-curricular competences in vocational education and training: Case study in the Basque Country. *Journal of Vocational Education and Training*, *70*(1), 47–65. https://doi.org/10.1080/13636820.2017.1392998

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, *4*(1), 1–10. https://doi.org/10.1177/2158244014522633

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Endreß, M. (2016). On the very idea of social construction: Deconstructing Searle's and Hacking's critical reflections. *Human Studies*, *39*(1), 127–146. https://doi.org/10.1007/s10746-016-9395-3

Engeström, Y. (1999). Activity theory and individual and social transformations. In Y. Engeström, R. Miettinen, & R.-L. Punamaki (Eds.), *Perspectives on activity theory* (pp. 19–38). Cambridge University Press.

Ermenc, K. S., & Mažgon, J. (2015). Bureaucratisation of the teaching profession in decentralised vocational education-the case of Slovenia, Europe. *International Education*

Studies, *8*(5), 12–20. https://doi.org/10.5539/ies.v8n5p12

Eteläpelto, A., Vähäsantanen, K., Hökkä, P., & Paloniemi, S. (2013). What is agency? Conceptualizing professional agency at work. *Educational Research Review*, *10*, 45–65. https://doi.org/10.1016/j.edurev.2013.05.001

ETF. (2002). *Vocational education and training and employment services in Lithuania*. Office for official publications of the European Communities.

European Commission. (2010). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A new impetus for European cooperation in vocational education and training to support the Europe 2020*. https://www.eumonitor.eu/9353000/1/j4nvke1fm2yd1u0_j9vvik7m1c3gyxp/vkcweek9hnzz/v=s7z/f=/com(2010)296_en.pdf

European Commission. (2015). *Riga conclusions 2015 on a new set of medium-term deliverables in the field of VET for the period 2015-2020, as a result of the review of short-term deliverables defined in the 2010 Bruges communiqué*. https://education.ec.europa.eu/document/riga-conclusions-2015

European Commission. (2017). *Digital transformation monitor: Italy: "Industria 4.0."* https://ec.europa.eu/growth/tools-databases/dem/monitor/content/italy-"industria-40"

European Commission. (2019). *ESCO handbook: European skills, competences, qualifications and occupations* (2nd ed.). https://doi.org/10.2767/934956

European Parliament and Council of the European Union. (2008). Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European qualifications framework for lifelong learning. *Official Journal of the European Union*, *C 111*, 1–7. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008H0506(01)[

Evans, K. (2020). Comparative vocational education and training research: What purposes does it serve? In M. Pilz & J. Li (Eds.), *Comparative vocational education research: enduring challenges and new ways forward* (pp. 3–19). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-29924-8_1

Fastré, G. M. J., van der Klink, M. R., Amsing-Smit, P., & van Merriënboer, J. J. G. (2014). Assessment criteria for competency-based education: A study in nursing education. *Instructional Science*, *42*(6), 971–994. https://doi.org/10.1007/s11251-014-9326-5

Fastré, G. M. J., van der Klink, M. R., & van Merriënboer, J. J. G. (2010). The effects of performance-based assessment criteria on student performance and self-assessment skills.

Advances in Health Sciences Education, *15*(4), 517–532. https://doi.org/10.1007/s10459-009-9215-x

Fischer, M. (2020). Beyond typologies: Alternative ways of comparing VET systems. In M. Pilz & J. Li (Eds.), *Comparative vocational education research: Enduring challenges and new ways forward* (pp. 23–41). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-29924-8_2

Fleetwood, S. (2005). Ontology in organization and management studies : A critical realist perspective. *Organization Articles*, *12*(2), 197–222. https://doi.org/10.1177/1350508405051188

Frommberger, D., & Krichewsky, L. (2012). Comparative Analysis of VET Curricula in Europe. In M. Pilz (Ed.), *The Future of Vocational Education and Training in a Changing World* (pp. 235–257). Fachmedien Wiesbaden GmbH. https://doi.org/10.1007/978-3-531-18757-0

Frontini, S., & Psifidou, I. (2015). Education and training governance through learning outcomes: Possibilities and constraints in Italy. *Bordon*, *67*(1), 149–163. https://doi.org/10.13042/Bordon.2015.67110

Gamble, J. (2016). From labour market to labour process: Finding a basis for curriculum in TVET. *International Journal of Training Research*, *14*(3), 215–229. https://doi.org/10.1080/14480220.2016.1254367

Gasquet, C., Hocquelet, M., Vero, J., Bonleu, A., Sulzer, E., Toutin-Trelcat, M.-H., Sigot, J.-C., Joseph, O., & Aline, V.-W. (2021). Introduction. *In and around: Do Firms Facilitate the Construction of Competences?*, *2–2021*, 7–10. https://www.cereq.fr/en/node/10083/printable/print

Gedvilienė, G., Laužackas, R., & Tūtlys, V. (2010). *Mokytojų kvalifikacijos tobulinimo poreikiai. Mokslo studija*. VDU.

Gibbs, G. (2007). *Analyzing qualitative data*. SAGE Publications.

Gomez, G. M., & Tacconi, G. (2015). Una guida per progettare l'azione didattica. In G. Tacconi (Ed.), *Tra scuola e lavoro. Una prospettiva didattica sul secondo ciclo del sistema educativo di istruzione e formazione* (pp. 244–255). LAS.

Goodson, I. F., & Ümarik, M. (2019). Changing policy contexts and teachers´ work-life narratives: the case of Estonian vocational teachers. *Teachers and Teaching: Theory and Practice*, *25*(5), 589–602. https://doi.org/10.1080/13540602.2019.1664300

Gulikers, J. T. M., Baartman, L. K. J., & Biemans, H. (2010). Facilitating evaluations of innovative, competence-based assessments: Creating understanding and involving

multiple stakeholders. *Evaluation and Program Planning*, *33*(2), 120–127. https://doi.org/10.1016/j.evalprogplan.2009.07.002

Gulikers, J. T. M., Bastiaens, T. J., Kirschner, P. A., & Kester, L. (2008). Authenticity is in the eye of the beholder: Student and teacher perceptions of assessment authenticity. *Journal of Vocational Education and Training*, *60*(4), 401–412. https://doi.org/10.1080/13636820802591830

Hager, P. (2017). The integrated view on competence. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 203–228). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_10

Hager, P., & Smith, E. (2004). The inescapability of significant contextual learning in work performance. *London Review of Education*, *2*(1), 33–46. https://doi.org/10.1080/1474846042000177465

Hargreaves, A., & Fullan, M. (2012). *Professional capital: Transforming teaching in every school*. Teachers College Press.

Heusdens, W., Baartman, L., & de Bruijn, E. (2019). Know your onions: An exploration of how students develop vocational knowledge during professional performance. *Scandinavian Journal of Educational Research*, *63*(6), 839–852. https://doi.org/10.1080/00313831.2018.1452291

Heusdens, W., Baartman, L. K. J., & de Bruijn, E. (2018). Knowing everything from soup to dessert: An exploratory study to describe what characterises students' vocational knowledge. *Journal of Vocational Education and Training*, *70*(3), 435–454. https://doi.org/10.1080/13636820.2018.1437065

Heusdens, W., Bakker, A., Baartman, L. K. J., & de Bruijn, E. (2016). Contextualising vocational knowledge: A theoretical framework and illustrations from culinary education. *Vocations and Learning*, *9*(2), 151–165. https://doi.org/10.1007/s12186-015-9145-0

Hodge, S. (2007). The origins of competency-based training. *Australian Journal of Adult Learning*, *47*(2), 179–209.

Hodge, S. (2016). Alienating curriculum work in Australian vocational education and training. *Critical Studies in Education*, *57*(2), 143–159. https://doi.org/10.1080/17508487.2015.1009842

Hodge, S. (2018). Standardised curriculum and hermeneutics: The case of Australian vocational educators. *Journal of Curriculum Studies*, *50*(1), 38–55. https://doi.org/10.1080/00220272.2016.1278042

Hodge, S., Atkins, L., & Simons, M. (2016). Towards an epistemically neutral curriculum model for vocational education: From competencies to threshold concepts and practices. *International Journal of Training Research*, *14*(3), 230–243. https://doi.org/10.1080/14480220.2016.1256895

Hodge, S., Mavin, T., & Kearns, S. (2020). Hermeneutic dimensions of competency-based education and training. *Vocations and Learning*, *13*(1), 27–46. https://doi.org/10.1007/s12186-019-09227-y

Hökkä, P., Vähäsantanen, K., & Mahlakaarto, S. (2017). Teacher educators' collective professional agency and identity: Transforming marginality to strength. *Teaching and Teacher Education*, *63*, 36–46. https://doi.org/10.1016/j.tate.2016.12.001

Hordern, J. (2014). How is vocational knowledge recontextualised? *Journal of Vocational Education and Training*, *66*(1), 22–38. https://doi.org/10.1080/13636820.2013.867524

Hordern, J. (2019). Knowledge, practice, and workplace learning. In S. McGrath, M. Mulder, J. Papier, & R. Suart (Eds.), *Handbook of vocational education and training: Developments in the changing world of work* (pp. 1121–1134). Springer International Publishing. https://doi.org/10.1007/978-3-319-49789-1_63-1

Hyland, T. (2006). *Reductionist trends in education and training for work: Skills, competences and work-based learning*. https://doi.org/10.1007/978-94-007-1911-8

INAPP. (2021). *Report tecnico: XVIII rapporto di monitoraggio del sistema di istruzione e formazione professionale e dei percorsi in duale nella IeFP a.f. 2018-19*. INAPP. https://www.lavoro.gov.it/temi-e-priorita/orientamento-e-formazione/focus-on/Formazione/Documents/INAPP-Monit-percorsi-Iefp-Sistema-duale-2018-19 bis.pdf

ISFOL. (2014). *Trasparenza delle qualificazioni e delle competenze: sperimentazioni e pratiche di attuazione della raccomendazione ECVET*. ISFOL. http://www.agenziaformativa.editarea.com/res/site12355/res681920_Trasparenza-delle-qualificazioni-e-delle-competenze-sperimentazioni-e-pratiche-di-attuazione-della-Raccomandazione-ECVET.pdf

ISFOL. (2015). *L'offerta di formazione professionale nelle regioni italiane: i risultati dell'indagine ISFOL-OFP. Volume I – l'indagine qualitativa*. ISFOL. https://inapp.infoteca.it/search/detail/lofferta-di-formazione-professionale-nelle-regioni-i-risultati-dell-indagine-isf/20393

James, P. (2002). Discourses and practices of competency-based training: Implications for worker and practitioner identities. *International Journal of Lifelong Education*, *21*(4), 369–391. https://doi.org/10.1080/02601370210141039

James, P., & Mulcahy, D. (2000). Competency-based training and beyond: Action research and reflective practice in vocational education and training. *Educational Action Research*, *8*(3), 515–532. https://doi.org/10.1080/09650790000200132

Jocienė, J. (2014). Modulinio ir dalykinio profesinio mokymo programų skirtumai. *Andragogika*, *1*(5), 86–96. https://core.ac.uk/download/pdf/233175631.pdf

Jonnaert, P., Masciotra, D., Barrette, J., Morel, D., & Mane, Y. (2007). From competence in the curriculum to competence in action. *Prospects*, *37*(2), 187–203. https://doi.org/10.1007/s11125-007-9027-9

Jossberger, H., Brand-Gruwel, S., Boshuizen, H., & van de Wiel, M. (2010). The challenge of self-directed and self-regulated learning in vocational education: A theoretical analysis and synthesis of requirements. *Journal of Vocational Education and Training*, *62*(4), 415–440. https://doi.org/10.1080/13636820.2010.523479

Jovaiša, T., Laužackas, R., Spūdytė, I., & Tūtlys, V. (2008). Kvalifikacijos metodologija. In *Lietuvos kvalifikacijų sistemos metodologija: Monografija* (pp. 9–31). Lietuvos darbo rinkos mokymo tarnyba.

Jucevičienė, P., & Lepaitė, D. (2000). Kompetencijos sampratos erdvė. *Socialiniai Mokslai*, *1*(22), 44–50. http://etalpykla.lituanistikadb.lt/fedora/objects/LT-LDB-0001:J.04~2000~1367166612843/datastreams/DS.002.0.01.ARTIC/content

Kelly, A. V. (2009). *The Curriculum: Theory and practice* (6th ed.). SAGE.

Kemmis, R. B., & Green, A. (2013). Vocational education and training teachers' conceptions of their pedagogy. *International Journal of Training Research*, *11*(2), 101–121. https://doi.org/10.5172/ijtr.2013.11.2.101

Khaled, A., Gulikers, J., Biemans, H., & Mulder, M. (2016). Occurrences and quality of teacher and student strategies for self-regulated learning in hands-on simulations. *Studies in Continuing Education*, *38*(1), 101–121. https://doi.org/10.1080/0158037X.2015.1040751

Klein, I., Saniter, A., Busch, J. A., Tūtlys, V., Genuté, G., Rutkienė, A., Perini, M., Tacconi, G., Sartori, R., & Ceschi, A. (2020). *Profiles and competences of VET teachers and trainers: Comparative report on the development of teaching competences of VET teachers and trainers in Germany, Lithuania and Italy*. Institut Technik und Bildung (ITB), Universität Bremen. https://media.suub.uni-bremen.de/bitstream/elib/4410/4/FB_69.pdf

KPMPC. (2012). *The concept of the modular vocational education and training*. https://www.kpmpc.lt/kpmpc/wp-content/uploads/2015/11/The_Concept_of_the_Modular_Vocational_Education_and_Tr

aining_System.pdf

KPMPC. (2016). *Key competences in vocational education and training – Lithuania. Cedefop ReferNet thematic perspectives series.* http://libserver.cedefop.europa.eu/vetelib/2016/ReferNet_LT_KC.pdf%0AAuthor:

KPMPC. (2019a). *Formaliojo profesinio mokymo programų rengimo metodika*. https://www.kpmpc.lt/kpmpc/wp-content/uploads/2019/04/Moduliniu_programu_rengimo_metodika_2019.pdf

KPMPC. (2019b). *Profesinio standarto rengimo metodika*. KPMPC. https://www.kpmpc.lt/kpmpc/wp-content/uploads/2015/08/Profesinio-standarto-rengimo-metodika_final_2020.pdf

KPMPC. (2019c). *Vocational education and training in Europe: Lithuania. Cedefop ReferNet VET in Europe reports 2018.* http://libserver.cedefop.europa.eu/vetelib/2019/Vocational_Education_Training_Europe_Lithuania_2018_Cedefop_ReferNet.pdf

Krikštolaitienė, K., Daukilas, S., & Krikštolaitis, R. (2020). Darbo vertybės profesinio ugdymo turinyje. Instrumentalizmas ir tobulėjimas. *Pedagogika, 139*(3), 5–34. https://doi.org/10.15823/p.2020.139.1

Landman, T. (2003). *Issues and methods in comparative politics. An introduction*. Taylor & Francis. https://doi.org/10.4324/9780203428252

Landman, T., & Carvalho, E. (2016). *Issues and methods in comparative politics: An introduction* (4th ed.). Routledge. https://doi.org/10.4324/9781315725376

Lassnigg, L. (2012). "Lost in translation": Learning outcomes and the governance of education. *Journal of Education and Work, 25*(3), 299–330. https://doi.org/10.1080/13639080.2012.687573

Lassnigg, L. (2017). Competence-based education and educational effectiveness. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 667–693). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_31

Laužackas, R. (2000). *Mokymo turinio projektavimas: standartai ir programos profesiniame rengime*. VDU.

Laužackas, R. (2005). *Profesinio rengimo metodologija*. VDU.

Laužackas, R., & Danilevičius, E. (2006). Vocational education and training in Lithuania: Reform processes and tendencies. In *The transformation of vocational education and training (VET) in the Baltic states: Survey of reforms and developments* (pp. 69–92).

https://doi.org/10.1007/978-1-4020-4342-0_5

Laužackas, R., Tūtlys, V., & Spūdytė, I. (2009). Evolution of competence concept in Lithuania: From VET reform to development of national qualifications system. *Journal of European Industrial Training*, *33*, 800–816. https://doi.org/10.1108/03090590910993643

Le Deist, F. D., & Winterton, J. (2005). What is competence? *Human Resource Development International*, *8*(1), 27–46. https://doi.org/10.1080/1367886042000338227

Legislative Decree No 13. (2013). *Definizione delle norme generali e dei livelli essenziali delle prestazioni per l'individuazione e validazione degli apprendimenti non formali e informali e degli standard minimi di servizio del sistema nazionale di certificazione delle competenze, a norm*. https://www.gazzettaufficiale.it/eli/id/2013/02/15/13G00043/sg

Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In *The SAGE handbook of qualitative research* (4th ed., pp. 97–129). SAGE Publications.

Lindgren, B. M., Lundman, B., & Graneheim, U. H. (2020). Abstraction and interpretation during the qualitative content analysis process. *International Journal of Nursing Studies*, *108*. https://doi.org/10.1016/j.ijnurstu.2020.103632

Lithuanian Parliament. (1997). *Profesinio mokymo įstatymas*. https://www.e-tar.lt/portal/lt/legalAct/TAR.44FA08A7226F/asr

Löfgren, S., Ilomäki, L., & Toom, A. (2020). Employer views on upper-secondary vocational graduate competences. *Journal of Vocational Education and Training*, *72*(3), 435–460. https://doi.org/10.1080/13636820.2019.1635633

Lombardia Region. (2013). *Dossier. La didattica per competenze. Approcci e strumenti dell'USR Lombardia*. https://usr.istruzione.lombardia.gov.it/wp-content/uploads/2016/11/dossier_competenze-lug2013-1.pdf

Lombardia Region. (2018). *Quadro regionale degli standard professionali: Criteri metodologici e regole descrittive per la definizione delle competenze e dei profili professionali*. https://qrsp.servizirl.it/qrsp/#/home

Lucas, B., Spencer, E., & Claxton, G. (2012). *How to teach vocational education: A theory of vocational pedagogy*. http://www.cityandguildsinstitute.com/pdf/How-to-teach-vocational-education.pdf

Lum, G. (1999). Where's the competence in competence-based education and training? *Journal of Philosophy of Education*, *33*(3), 403–418. https://doi.org/10.1111/1467-9752.00145

Lum, G. (2013). Competence: A tale of two constructs. *Educational Philosophy and Theory*,

45(12), 1193–1204. https://doi.org/10.1080/00131857.2013.763593

Lum, G. (2015). On the functions of a system of vocational qualifications. *Journal of Education and Work*, *28*(2), 187–206. https://doi.org/10.1080/13639080.2014.1001336

Lundgren, U. P. (1981). *Model analysis of pedagogical processes* (2nd ed.). LiberLäromedel.

Malizia, G., & Tonini, M. (2015). *Organizzazione della scuola e del CFP*. CNOS-FAP. https://www.cnos-fap.it/sites/default/files/pubblicazioni/Organizzazione_Scuola_CFP.pdf

Marini, D. (2021). *Lessico del nuovo mondo: una lettura dei mutamenti sociali ed economici*. Marsilio.

Markowitsch, J., & Luomi-Messerer, K. (2008). Development and interpretation of descriptors of the European qualifications framework. *European Journal of Vocational Training*, *42*, 33–58.

Marope, M. (2019). *Reconceptualizing and repositioning curriculum in the 21st Century: A global paradigm shift*. International Bureau of Education. http://www.ibe.unesco.org/sites/default/files/resources/reconceptualizing_and_repositioningexecsummary.pdf

Marope, M., Griffin, P., & Gallagher, C. (2019). *Future competences and the future of curriculum*. International Bureau of Education. http://www.ibe.unesco.org/sites/default/files/resources/future_competences_and_the_future_of_curriculumexecsummary.pdf

Matlay, H. (2000). S/NVQs in Britain: Employer-led or ignored? *Journal of Vocational Education and Training*, *52*(1), 135–148. https://doi.org/10.1080/13636820000200111

Maton, Karl, & Moore, R. (Eds.). (2012). *Social realism, knowledge and the sociology of education*. Bloomsbury Publishing.

Maxwell, J. A. (2013). *Qualitative research design: An interactive approach*. Sage, Thousand Oaks, CA.

Mayring, P. (2014). *Qualitative content analysis: Theoretical foundation, basic procedures and software solution*. https://doi.org/10.4135/9781446282243.n12

Mičiuliene, R., Kovalčikiene, K., & Daukilas, S. (2020). Vocational teacher's inclination to impart values in vocational training: The importance of pedagogical-didactical and psychological factors. *European Journal of Contemporary Education*, *9*(2), 350–364. https://doi.org/10.13187/ejced.2020.2.350

Miles, M. B., Huberman, M. A., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. SAGE.

Miller, K. H., Edwards, R., & Priestley, M. (2010). Levels and equivalence in credit and qualifications frameworks: Contrasting the prescribed and enacted curriculum in school and college and college. *Research Papers in Education*, *25*(2), 225–243. https://doi.org/10.1080/02671520902928507

Ministry of Education and Science. (2007). *Praktinio profesinio mokymo išteklių plėtros programa*. https://www.e-tar.lt/portal/lt/legalAct/TAR.8EF99218F148/asr

Misbah, Z., Gulikers, J., & Mulder, M. (2019). Competence and knowledge development in competence - based vocational education in Indonesia. *Learning Environments Research*, *22*(2), 253–274. https://doi.org/10.1007/s10984-018-9276-y

Mittendorff, K. (2010). *Career conversations in senior secondary vocational education*. Technische Universiteit Eindhoven. https://doi.org/10.6100/IR657943

Mittendorff, K., Beijaard, D., den Brok, P., & Koopman, M. (2012). The influence of teachers' career guidance profiles on students' career competencies. *Journal of Vocational Education and Training*, *64*(4), 491–509. https://doi.org/10.1080/13636820.2012.727853

Moore, R. (2013). Social realism and the problem of the problem of knowledge in the sociology of education. *British Journal of Sociology of Education*, *34*(3), 333–353. https://doi.org/10.1080/01425692.2012.714251

Moore, R., & Young, M. (2012). Reconceptualizing knowledge and the curriculum in the sociology of education. In *Social realism, knowledge and the sociology of education: Coalitions of the mind* (pp. 14–34). Continuum.

Morselli, D. (2018). How do Italian vocational teachers educate for a sense of initiative and entrepreneurship? Development and initial application of the SIE questionnaire. *Education and Training*, *60*(7–8), 800–818. https://doi.org/10.1108/ET-03-2017-0046

Mulder, M. (2012). Developing comprehensive competence-based education and training – some practical guidelines. *Journal of Agricultural Education and Extension*, *18*(3), 305–314. http://www.mmulder.nl/wp-content/uploads/2011/11/2012-Mulder-Competence-based-Education-and-Training-Editorial-JAEE-18-3.pdf

Mulder, M. (2014). Conceptions of professional competence. In S. Billett, C. Harteis, & H. Gruber (Eds.), *International handbook of research in professional and practice-based learning* (pp. 107–137). Springer. https://doi.org/10.1007/978-94-017-8902-8_5

Mulder, M. (2017). Competence theory and research: A synthesis. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 1071–1106). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_50

Mulder, M. (2019). Foundations of competence-based vocational education and training. In *Handbook of vocational education and training: Developments in the changing world of work* (pp. 1167–1192). https://doi.org/10.1007/978-3-319-49789-1_65-1

Mulder, M., Weigel, T., & Collins, K. (2007). The concept of competence in the development of vocational education and training in selected EU member states: A critical analysis. *Journal of Vocational Education and Training, 59*(1), 67–88. https://doi.org/10.1080/13636820601145630

Mulder, M., & Winterton, J. (2017). Introduction. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 1–43). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_1

Navikienė, Ž., & Tūtlys, V. (2009). Modulinio profesinio mokymo(-si) struktūros metodika. *Profesinis Rengimas: Tyrimai Ir Realijos, 18*, 140–154.

Nicoli, D. (2012). *Linea guida sulla progettazione formativa di percorsi di istruzione e formazione professionale*. CNOS-FAP. https://www.cnos-fap.it/sites/default/files/rapporti/Linea_guida_Progettazione_Formativa.pdf

Nicoli, D. (2019). *Imparare realmente. Intrapresa vocazionale, laboratori tematici e academy formativa*. CNOS-FAP. https://biblioteca.cnos-fap.it/pubblicazione/imparare-realmente-intrapresa-vocazionale-laboratori-tematici-e-academy-formativa/

Nissila, P. (2015). Towards competence-based practices in vocational education: What will the process require from teacher education and teacher identities? *Center for Educational Policy Studies Journal*, *5*(2), 13–35. https://doi.org/10.26529/cepsj.140

Norkus, Z. (2006). Apie Baltijos Siciliją ir Lombardiją: Postsocialistinės kaitos pasiekimų Baltijos šalyse skirtumai ir priežastys. *Politologija, 41*, 71–119. https://etalpykla.lituanistikadb.lt/fedora/objects/LT-LDB-0001:J.04~2006~1367155329390/datastreams/DS.002.0.01.ARTIC/content

Nussbaum, M. (2000). *Women and human development: The capabilities approach*. Cambridge University Press.

Nylund, M., Rosvall, P. Å., & Ledman, K. (2017). The vocational–academic divide in neoliberal upper secondary curricula: The Swedish case. *Journal of Education Policy*, *32*(6), 788–808. https://doi.org/10.1080/02680939.2017.1318455

Oates, T. (2005). The role of outcomes-based national qualifications in the development of an effective vocational education and training system: The case of England and Wales. *Policy Futures in Education, 2*(1), 53–71. https://doi.org/10.2304/pfie.2004.2.1.9

OECD. (2009). *Working out change: Systemic innovation in vocational education and training*.

OECD Publishing, Paris.

OECD. (2011). *Towards skills strategy*. https://ueanorwich-my.sharepoint.com/personal/pkw15hpu_uea_ac_uk/Documents/SM4/oecd 2011.pdf

OECD. (2017). *OECD skills strategy diagnostic report: Italy*. OECD.

OECD. (2021). *OECD skills strategy Lithuania*. OECD Publishing.

Palmberger, M., & Gingrich, A. (2014). Qualitative comparative practices: Dimensions, cases and strategies. In U. Flick (Ed.), *The SAGE handbook of qualitative data analysis* (pp. 94–108). Sage Publications Ltd. https://www.doi.org/10.4135/978144628224

Piemonte Region. (2021). *Allegato A. Standard di progettazione dei percorsi IeFP di qualifica e diploma professionale*. https://www.regione.piemonte.it/web/sites/default/files/media/documenti/2020-06/all_b_standard_di_progettazione.pdf

Pilz, M. (2012). International comparative research into vocational training: Methods and approaches. In M. Pilz (Ed.), *The future of vocational education and training in a changing world* (pp. 561–588). Springer Fachmedien Wiesbaden GmbH. https://doi.org/10.1007/978-3-531-18757-0

Pilz, M., & Li, J. (2020). *Comparative vocational education research: Enduring challenges and new ways forward*. Springer VS Wiesbaden. https://doi.org/10.1007/978-3-658-29924-8

Pilz, M., Li, J., Canning, R., & Minty, S. (2018). Modularisation approaches in initial vocational education: Evidence for policy convergence in Europe? *Journal of Vocational Education and Training*, *70*(1), 1–26. https://doi.org/10.1080/13636820.2017.1392994

Placklé, I., Könings, K. D., Struyven, K., Libotton, A., van Merriënboer, J. J. G., & Engels, N. (2020). Powerful learning environments in secondary vocational education: Towards a shared understanding. *European Journal of Teacher Education*, *43*(2), 224–242. https://doi.org/10.1080/02619768.2019.1681965

Powell, J. J. ., & Trampusch, C. (2012). Europeanization and the varying responses in collective skill systems. In *The political economy of collective skill formation*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199599431.003.0011

Preston, J. (2017). *Competence based education and training (CBET) and the end of human learning. The existential threat of competency*. Palgrave Macmillan.

Priestley, M., Biesta, G., Philippou, S., & Robinson, S. (2015). The teacher and the curriculum: Exploring teacher agency. In D. Wyse, L. Hayward, & J. Pandya (Eds.), *The SAGE handbook of curriculum, pedagogy and assessment* (pp. 187–201). Sage Publications Ltd.

https://doi.org/10.4135/9781473921405.n12

Priestley, M., Edwards, R., Priestley, A., & Miller, K. (2012). Teacher agency in curriculum making: Agents of change and spaces for manoeuvre. *Curriculum Inquiry*, *42*(2), 191–214. https://doi.org/10.1111/j.1467-873X.2012.00588.x

Prikshat, V., Kumar, S., & Nankervis, A. (2019). Work-readiness integrated competence model: Conceptualisation and scale development. *Education and Training*, *61*(5), 568–589. https://doi.org/10.1108/ET-05-2018-0114

Pukelis, K. (2009). Ability, competency, learning/study outcome, qualification and competence: Theoretical dimension. *Aukštojo Mokslo Kokybė=The Quality of Higher Education*, *6*, 12–36.

Pukelis, K., & Smetona, A. (2012). Harmonising the microsystem of the educational concept competence. *Aukštojo Mokslo Kokybė=The Quality of Higher Education*, *Nr. 9*.

Rekkor, S., Ümarik, M., & Loogma, K. (2013). Adoption of national curricula by vocational teachers in Estonia. *Journal of Vocational Education and Training*, *65*(4), 489–506. https://doi.org/10.1080/13636820.2013.841277

Remillard, J. T., & Heck, D. J. (2014). Conceptualizing the curriculum enactment process in mathematics education. *ZDM Mathematics Education*, *46*(5), 705–718. https://doi.org/10.1007/s11858-014-0600-4

Ronchetti, M. (2017). Competence-based education in the Italian context: State of affairs and overcoming difficulties. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 407–427). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_19

Runhaar, P. (2017). Factors influencing professional development in teacher teams within CBE contexts. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 755–773). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_35

Runhaar, P., Bednall, T., Sanders, K., & Yang, H. (2016). Promoting VET teachers' innovative behaviour: exploring the roles of task interdependence, learning goal orientation and occupational self-efficacy. *Journal of Vocational Education and Training*, *68*(4), 436–452. https://doi.org/10.1080/13636820.2016.1231215

Ryan, M., Gwinner, K., Mallan, K., & Livock, C. (2017). Preparing work-ready nurses: Reflexive learning for diverse students in the Australian vocational education and training sector. *Studies in Continuing Education*, *39*(3), 268–285. https://doi.org/10.1080/0158037X.2017.1279136

Salatin, A. (2018). *La promozione delle competenze relative agli "assi culturali" nei percorsi di IeFP: Settore elettrico-elettronico*. Tipolitografia Istituto Salesiano Pio XI. https://biblioteca.cnos-fap.it/pubblicazione/la-promozione-delle-competenze-relative-agli-assi-culturali-nei-percorsi-di-iefp-settore-elettrico-elettronico/

Saldana, J. (2009). *The Coding Manual for Qualitative Researchers*. Sage Publications Ltd.

Schaap, H., de Bruijn, E., van der Schaaf, M. F., & Kirschner, P. A. (2009). Students' personal professional theories in competence-based vocational education: The construction of personal knowledge through internalisation and socialisation. *Journal of Vocational Education and Training*, *61*(4), 481–494. https://doi.org/10.1080/13636820903230999

Schiro, M. S. (2012). *Curriculum theory. Conflicting visions and enduring concerns* (2nd ed.). SAGE Publications.

Schon, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.

Schreier, M. (2012). *Qualitative content analysis in practice*. Sage Publications Ltd.

Seezink, A., Poell, R., & Kirschner, P. (2010). SOAP in practice: Learning outcomes of a cross-institutional innovation project conducted by teachers, student teachers, and teacher educators. *European Journal of Teacher Education*, *33*(3), 229–243. https://doi.org/10.1080/02619768.2010.490911

Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (3rd ed.). Teachers College Press. https://doi.org/10.1037/032390

Sen, A. (1999). *Development as freedom*. Anchor Books.

Sluijsmans, D. M. A., Straetmans, G. J. J. M., & van Merriënboer, J. J. G. (2008). Integrating authentic assessment with competence-based learning in vocational education: The protocol portfolio scoring. *Journal of Vocational Education and Training*, *60*(2), 159–172. https://doi.org/10.1080/13636820802042438

Spöttl, G., Loose, G., & Becker, M. (2020). *Work-process based development of advanced detailed curricula*. Peter Lang Verlag. https://doi.org/10.3726/b17224

State-Regions conference. (2019). *Accordo tra il Ministro dell'Istruzione, dell'Università' e della Ricerca, il Ministro del Lavoro e delle Politiche Sociali, le Regioni e le Province Autonome di Trento e Bolzano riguardante l'integrazione e modifica del Repertorio nazionale delle figure*. https://www.statoregioni.it/it/conferenza-stato-regioni/sedute-2019/seduta-del-01082019/atti/repertorio-atto-n-155csr/

Stoof, A., Martens, R. L., van Merriënboer, J. J. G., & Bastiaens, T. J. (2002). The boundary approach of competence: A constructivist aid for understanding and using the concept of

competence. *Human Resource Development Review*, *1*(3), 345–365. https://doi.org/10.1177/1534484302013005

Strata. (2018). *Profesinio mokymo būklės apžvalga*. STRATA. https://strata.gov.lt/images/tyrimai/profesinio-mokymo-bukles-apzvalga-2018.pdf

Strata. (2020). *Vocational education and training in Lithuania*. UAB „Baltijos kopija“. https://strata.gov.lt/images/tyrimai/2021-metai/20211118-vocational-education-and-training-in-Lithuania-2020.pdf

Strata. (2021). *Lietuvos žmogiškojo kapitalo būklė*. Vyriausybės strateginės analizės centras. https://strata.gov.lt/images/tyrimai/2021-metai/20210524-lietuvos-zmogiskojo-kapitalo-bukle-2021.pdf

Sturing, L., Biemans, H., Mulder, M., & de Bruijn, E. (2011). The nature of study programmes in vocational education: Evaluation of the model for comprehensive competence-based vocational education in the Netherlands. *Vocations and Learning*, *4*(3), 191–210. https://doi.org/10.1007/s12186-011-9059-4

Tacconi, G., Tūtlys, V., Perini, M., & Gedvilienė, G. (2020). Development of pedagogical competencies of the vocational teachers in Italy and Lithuania: implications of competence-based VET curriculum reforms. *European Journal of Training and Development*. https://doi.org/10.1108/EJTD-03-2020-0041

Tagliagambe, S. (2011). La spinosa questione delle “competenze.” *I Quaderni Della Ricerca*, *4*, 28–37. https://laricerca.loescher.it/i-quaderni-della-ricerca-04/

The Council of the European Union. (2017). Council recommendation of 22 May 2017 on the European qualifications framework for lifelong learning and repealing the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European qualifications framew. *Official Journal of the European Union*, *C 189*, 15–28. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017H0615(01)

The Council of the European Union. (2020). Council recommendation of 24 November 2020 on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience 2020/C 417/01. *Official Journal of the European Union*, *C 417*, 1–16. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020H1202(01)

Tillema, H. H., Kessels, J. W. M., & Meijers, F. (2000). Competencies as building blocks for integrating assessment with instruction in vocational education: A case from the Netherlands. *Assessment and Evaluation in Higher Education*, *25*(3), 265–278. https://doi.org/10.1080/02602930050135130

Trainito, R., & Negro, M. (2020). Un approccio innovativo: STEM, Industria 4.0 e digitale. In *Il nuovo repertorio IeFP: Motivi, contenuti e opportunità di un rinnovamento* (pp. 75–80). Studium edizioni. https://riviste.gruppostudium.it/sites/default/files/nuova_professionalita_3_2020_0.pdf

Truijen, K. J. P., Sleegers, P. J. C., Meelissen, M. R. M., & Nieuwenhuis, A. F. M. (2013). What makes teacher teams in a vocational education context effective? *Journal of Workplace Learning, 25*(1), 58–73. https://doi.org/10.1108/13665621311288485

Tūtlys, V., & Aarna, O. (2017). Competence-based approach in the education reforms of Lithuania and Estonia. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 381–406). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_18

Tūtlys, V., Gedvilienė, G., Kaminskienė, L., & Stasiūnaitienė, E. (2022). Lithuania: Between neoliberalism and statism. In V. Tūtlys, J. Winterton, J. Markowitsch, & S. Pavlin (Eds.), *Skill formation in Central and Eastern Europe: A search for patterns and directions of development* (pp. 65–93). Peter Lang GmbH.

Tūtlys, V., & Kaminskienė, L. (2008). Social partnership in accrediting Lithuanian VET qualifications. *European Journal of Vocational Training, 45*(45), 32–49.

Tūtlys, V., Kaminskienė, L., & Pileičikas, G. (2015). *Kompetencijų vertinimo užduočių sudarymo metodika*. KPMPC. https://www.kpmpc.lt/kpmpc/wp-content/uploads/akreditacija/Kompetenciju_vertinimo_uzduociu_sudarymo_metodika.pdf

Tūtlys, V., Markowitsch, J., Winterton, J., & Pavlin, S. (Eds.). (2022). *Skill formation in Central and Eastern Europe: A search for patterns and directions of development*. Peter Lang GmbH. https://doi.org/10.3726/b19799

Tūtlys, V., & Spöttl, G. (2017). From the analysis of work-processes to designing competence-based occupational standards and vocational curricula. *European Journal of Training and Development, 41*(1), 50–66. https://doi.org/10.1108/EJTD-10-2015-0078

Tūtlys, V., & Spūdytė, I. (2011). Implementing a national qualifications framework in Lithuania. *Journal of Education and Work, 24*(3–4), 429–448. https://doi.org/10.1080/13639080.2011.584701

Tūtlys, V., Winterton, J., Markowitsch, J., & Pavlin, S. (2022). Skill formation in the post-communist CEE countries. In V. Tūtlys, J. Winterton, J. Markowitsch, & S. Pavlin (Eds.), *Skill formation in Central and Eastern Europe: A search for patterns and directions of development* (pp. 27–63). Peter Lang GmbH.

Tyson, R. (2016). When Expectations Clash: Vocational education at the intersection of workplace and school. *Interchange*, *47*(1), 51–63. https://doi.org/10.1007/s10780-015-9271-5

UNESCO, ETF, & Cedefop. (2019). *Global inventory of regional and national qualications frameworks 2019. Volume II: National and regional cases*. Luxembourg: Publications Office.

Unioncamere, & ANPAL. (2022). *Previsioni dei fabbisogni occupazionali e professionali in Italia a medio termine (2022-2026). Scenari per l'orientamento e la programmazione della formazione*. Unioncamere. https://www.anpal.gov.it/documents/552016/586456/report_previsivo_Excelsior_2022-26.pdf/33487145-b93d-8594-46be-f65b1f26b75d?t=1644593762030

Unwin, L. (2004). Twenty-first century vocational education in the United Kingdom: What would Dickens think? *Pedagogy, Culture and Society*, *12*(2), 175–200. https://doi.org/10.1080/14681360400200195

Unwin, L., & Huddleston, P. (2013). *Teaching and learning in further education: Diversity and change* (4th ed.). Routledge. https://doi.org/10.4324/9780203105399

Ure, O. B. (2019). Learning outcomes between learner centredness and institutionalisation of qualification frameworks. *Policy Futures in Education*, *17*(2), 172–188. https://doi.org/10.1177/1478210318774689

Vähäsantanen, K. (2015). Professional agency in the stream of change: Understanding educational change and teachers' professional identities. *Teaching and Teacher Education, 47*, 1–12. https://doi.org/10.1016/j.tate.2014.11.006

Vähäsantanen, K., & Eteläpelto, A. (2009). Vocational teachers in the face of a major educational reform: Individual ways of negotiating professional identities. *Journal of Education and Work, 22*(1), 15–33. https://doi.org/10.1080/13639080802709620

Vähäsantanen, K., & Eteläpelto, A. (2011). Vocational teachers' pathways in the course of a curriculum reform. *Journal of Curriculum Studies*, *43*(3), 291–312. https://doi.org/10.1080/00220272.2011.557839

Vähäsantanen, K., Paloniemi, S., Hökkä, P., & Eteläpelto, A. (2017). Agentic perspective on fostering work-related learning. *Studies in Continuing Education, 39*(3), 251–267. https://doi.org/10.1080/0158037X.2017.1310097

Vaitkutė, L. (2016). *Supporting teachers and trainers for successful reforms and quality of vocational education and training: mapping their professional development in the EU – Lithuania. Cedefop ReferNet thematic perspectives series.*

http://libserver.cedefop.europa.eu/vetelib/2016/ReferNet_LT_TT.pdf%0AAuthor:

Valstybės kontrolė. (2020). *Ar profesinis mokymas organizuojamas efektyviai*. Valstybės kontrolė.

van den Akker, J., Bannan, B., Kelly, A. E., Nieveen, N., & Plomp, T. (2013). *Educational design research. Part A: An Introduction* (T. Plomp & N. Nieveen (Eds.)). Stichting Leerplan Ontwikkeling (SLO).

van der Vleuten, C., Sluijsmans, D., & Joosten-ten Brinke, D. (2017). Competence assessment as learner support in education. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 607–630). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_28

van Griethuijsen, R. A. L. F., Kunst, E. M., van Woerkom, M., Wesselink, R., & Poell, R. F. (2020). Does implementation of competence-based education mediate the impact of team learning on student satisfaction? *Journal of Vocational Education and Training*, *72*(4), 516–535. https://doi.org/10.1080/13636820.2019.1644364

Veneto Region. (2011). *Linee guida per la pratica didattica, la valutazione e la certificazione*.

Vergani, A., & Rossini, S. (2017). *The changing nature and role of vocational education and training in Europe. External factors influencing VET - Understanding the national policy dimension: Country case studies. Case study focusing on Italy*. https://www.cedefop.europa.eu/files/italy_cedefop_changing_nature_of_vet_-_case_study.pdf

Vicini, R. (2020). I nuovi standard culturali di base della IeFP. In *Il nuovo repertorio IeFP: Motivi, contenuti e opportunità di un rinnovamento*. Studium edizioni. https://riviste.gruppostudium.it/sites/default/files/nuova_professionalita_3_2020_0.pdf

Vonken, M. (2017). Competence, qualification and action theory. In M. Mulder (Ed.), *Competence-based vocational and professional education: Bridging the worlds of work and education* (pp. 67–82). Springer International Publishing. https://doi.org/10.1007/978-3-319-41713-4_3

Wesselink, R., de Jong, C., & Biemans, H. (2010). Aspects of competence-based education as footholds to improve the connectivity between learning in school and in the workplace. *Vocations and Learning*, *3*(1), 19–38. https://doi.org/10.1007/s12186-009-9027-4

Wesselink, R., Dekker-Groen, A. M., Biemans, H., & Mulder, M. (2010). Using an instrument to analyse competence-based study programmes: Experiences of teachers in Dutch vocational education and training. *Journal of Curriculum Studies*, *42*(6), 813–829. https://doi.org/10.1080/00220271003759249

Wesselink, R., & Zitter, I. (2017). Designing competence-based vocational curricula at the school-work boundary. In E. de Bruijn, S. Billett, & J. Onstenk (Eds.), *Enhancing teaching and learning in the Dutch vocational education system: Reforms enacted* (pp. 175–194). Springer International Publishing. https://doi.org/10.1007/978-3-319-50734-7_9

Wheelahan, L. (2007). How competency-based training locks the working class out of powerful knowledge: A modified Bernsteinian analysis. *British Journal of Sociology of Education, 28*(5), 637–651. https://doi.org/10.1080/01425690701505540

Wheelahan, L. (2009). The problem with CBT (and why constructivism makes things worse). *Journal of Education and Work*, *22*(3), 227–242. https://doi.org/10.1080/13639080902957913

Wheelahan, L. (2010). *Why knowledge matters in curriculum: A social realist argument*. Routledge. https://doi.org/10.4324/9780203860236

Wheelahan, L. (2012). Competency-based training, powerful knowledge and the working class. In K. Maton & R. Moore (Eds.), *Social realism, knowledge and the sociology of education: Coalitions of the mind*. Bloomsbury Publishing.

Wheelahan, L. (2015). Not just skills: What a focus on knowledge means for vocational education. *Journal of Curriculum Studies*, *47*(6), 750–762. https://doi.org/10.1080/00220272.2015.1089942

Wheelahan, L. (2016). Patching bits won't fix vocational education in Australia–a new model is needed. *International Journal of Training Research*, *14*(3), 180–196. https://doi.org/10.1080/14480220.2016.1254368

Wheelahan, L., & Moodie, G. (2017). Vocational education qualifications' roles in pathways to work in liberal market economies. *Journal of Vocational Education and Training, 69*(1), 10–27. https://doi.org/10.1080/13636820.2016.1275031

Wheelahan, L., Moodie, G., Lavigne, E., & Samji, F. (2018). *Case Study of TAFE and public vocational education in Australia. Preliminary report*. Education International.

Wijnia, L., Kunst, E. M., van Woerkom, M., & Poell, R. F. (2016). Team learning and its association with the implementation of competence-based education. *Teaching and Teacher Education, 56*, 115–126. https://doi.org/10.1016/j.tate.2016.02.006

Winch, C. (2010). *Dimensions of expertise: A conceptual exploration of vocational knowledge*. Continuum International Publishing Group. https://doi.org/10.1108/heswbl.2011.1.3.289.1

Winch, C. (2014). Education and broad concepts of agency. *Educational Philosophy and*

Theory, *46*(6), 569–583. https://doi.org/10.1080/00131857.2013.779211

Winters, A., Meijers, F., Kuijpers, M., & Baert, H. (2012). Can training teachers stimulate career learning conversations? Analysis of vocational training conversations in Dutch secondary vocational education. *Journal of Vocational Education and Training*, *64*(3), 333–350. https://doi.org/10.1080/13636820.2012.691536

Winterton, J. (2007). Building social dialogue over training and learning: European and national developments. *European Journal of Industrial Relations*, *13*(3), 281–300. https://doi.org/10.1177/0959680107081742

Winterton, J. (2009). Competence across Europe: Highest common factor or lowest common denominator? *Journal of European Industrial Training*, *33*(8), 681–700. https://doi.org/10.1108/03090590910993571

Winterton, J. (2012). Varieties of competence: European perspectives. In M. Pilz (Ed.), *The future of vocational education and training in a changing world* (pp. 455–480). VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-531-18757-0_25

Winterton, J., Le Deist, F. D., & Stringfellow, E. (2005). *Typology of knowledge, skills and competences: Clarification of the concept and prototype*. Cedefop.

Wolf, A. (2001). Competence-based assessment. In *Competence in the learning society* (pp. 453–466). Peter Lang.

Young, M. (2004). Conceptualizing vocational knowledge: Some theoretical considerations. *Workplace Learning in Context*, 185–200. https://doi.org/10.4324/9780203571644

Young, M. (2008). *Bringing knowledge back in: From social constructivism to social realism in the sociology of education*. Routledge.

Young, M. (2013). Overcoming the crisis in curriculum theory: A knowledge-based approach. *Journal of Curriculum Studies*, *45*(2), 101–118. https://doi.org/10.1080/00220272.2013.764505

Young, M., & Hordern, J. (2020). Does the vocational curriculum have a future? *Journal of Vocational Education and Training*, *00*(00), 1–21. https://doi.org/10.1080/13636820.2020.1833078

Zagardo, G. (2020). *La IeFP nelle regioni. Una risposta all'Europa ai tempi del Covid*. Tipolitografia Istituto Salesiano Pio XI. https://biblioteca.cnos-fap.it/pubblicazione/la-iefp-nelle-regioni-una-risposta-alleuropa-ai-tempi-del-covid/

Žydžiūnaitė, V., & Sabaliauskas, S. (2017). *Kokybiniai tyrimai: principai ir metodai. Vadovėlis socialinių mokslų studijų programų studentams*. Vaga.

ANNEXES

ANNEX 1

Interview guide

Competence-based education in VET centres

This interview is conducted within the PhD research project of Lina Vaitkute, a student of PhD study programme Verona University, Italy, and Vytautas Magnus university, Lithuania. The research is being carried out in Lithuania and in Italy.

The aim of the research is to explore how the work, competencies and qualifications of vocational teachers and trainers change in Italy and in Lithuania due to the introduction of competence-based qualifications and curricula.

The research addresses the following research questions:

1) How introduction of competence-based qualifications and curricula change every-day vocational teachers' and trainers' practices in Italy and in Lithuania?

2) What experiences of vocational teachers and trainers enact competence-based curriculum in Lithuania and in Italy?

Interview questions

Introduction

1. Can you please describe the main curriculum (training programme related) change and development trends that you experience now in your VET centre?
2. Are you familiar with competence-based education (teaching through competence) approach? Please illustrate the example of competence-based education in your centre.

Curriculum level - Interpretation of competency texts

3. What is your role in curriculum making (curriculum interpretation and translation) at school level?
4. How do you feel about reading prescribed texts – qualification profiles, national curricula? Do you always understand the meanings of competencies, learning outcomes and what is required from teachers?
5. What power do you have to modify and adapt the 'national' / regional curriculum to 'local' concerns and issues? Or you completely align with prescribed texts?
6. What are the challenges?
7. What other personal and organisation challenges do you face?

Organisation of learning

8. Can you make an example about how you organise students learning environments so that students would have an opportunity to acquire necessary competencies?
   How do you coordinate training in classroom, laboratory and at workplace?
   How teachers in VET centre cooperate to develop students' competencies?
   To your opinion, how important and how successful is cooperation with companies in developing learners' competencies? In which professional areas cooperation is strongest?

9. What are the challenges?
10. What other personal and organisation challenges do you face?

Learning and instruction

11. To your opinion, what learning and instruction aspects are critical in developing competencies and learning outcomes?
12. What type of knowledge, according to your opinion, is relevant for VET?
13. How do you help learners to construct knowledge in classroom, laboratory, workplace? *Which activities do you apply to knowledge construction? Please give a practical example how you integrate knowledge, skills and attitudes in students teaching and learning?*
14. Do you think that XXIst century skills (generic, transversal) are important and if so, how do you integrate them with occupational competencies?
15. What instructional methods are presently the most appropriate to nowadays' VET students and for competence-based education?
16. What are the learning and instruction-related challenges?
17. What other personal and organisation challenges do you face?

Competence assessment

18. To your opinion – do assessment procedure allow reliable assessment of learners knowledge, skills and attitudes achieved during learning (i.e. competence assessment)? How do you balance formative and summative assessment?
19. What are the challenges?
20. What other personal and organisation challenges do you face?

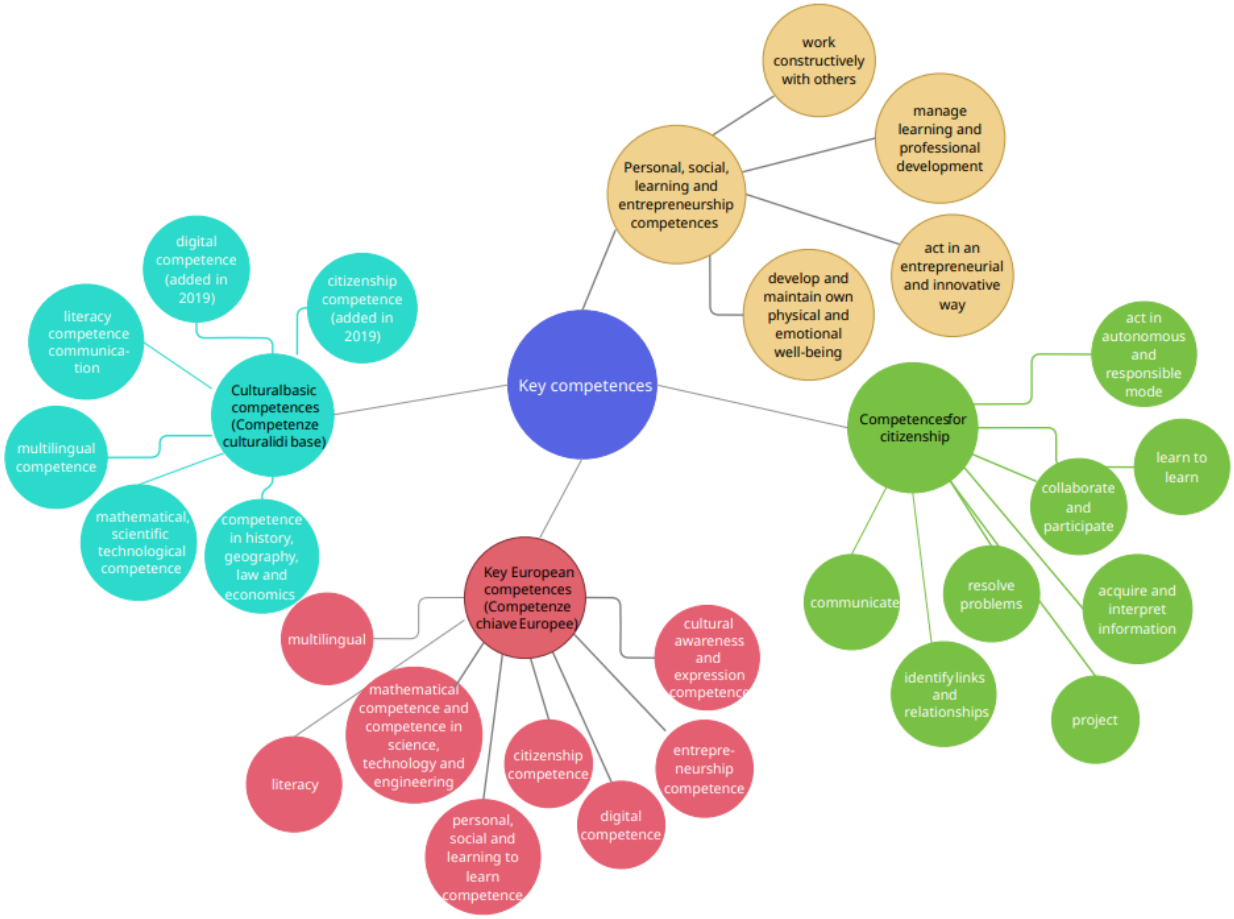
Competence-related challenges

21. Do you feel that your role as a VET teacher has changed in recent years? In which way?
22. In which areas in terms of your competencies you feel strong?
23. In which areas you feel that you lack competencies?
24. Is there anything else that you would like to tell?

ANNEX 2

Figure 2.1

Taxonomies of key competences in Italy



ANNEX 3

Table 3.1

Summary of findings of comparative analysis

Level	Comparison unit	Italy	Lithuania
Macro level skill formation (political and institutional framework)	Institutional framework	Multiple national and regional actors of skill formation system Institutionalization of social partners' involvement in qualifications content design and endorsement Weak public commitment and weak employer involvement to VET 'Dichotomy and parallelism' of national and regional sub-systems of VET Decentralized VET curriculum design and autonomy of VET institutions	National level skill formation and VET policy governance structure Institutionalization of social partners' involvement in qualifications content design and endorsement Fragmented and unsustainable social dialogue in skill formation Centralized VET curriculum design with restrained autonomy of VET institutions
	Skill formation and VET curriculum policy	Regional skill formation agendas with diverse VET focus Competence as paradigm of reference for all education system Standardization of work-related and key competences in national and regional documents Policy support to the development and implementation of national qualifications framework, national repertory of education, training and professional qualifications and competence certification system inspired by EU policies Strong positions of key competences and personal development dimension in VET curriculum Policy support for alternate training (*Alternanza Scuola Lavoro)* and dual training	Domination of neoliberal policy agenda for skill formation and VET policy at the same time acknowledging social dimension of VET Prompt policy orientation at competence approach after regaining of State independence Policy borrowing and experience transfer of Anglo-Saxon and German qualifications models EU supported qualifications system, competence-based standards and modularized VET curriculum initiatives in line with EU recommendations and tools Reform of final competence examination system EU supported establishment of sectoral practical training centers School-based VET system with declared policy goals to expand dual VET

	Curriculum manifestations	Social and economic efficiency curriculum ideology with elements of progressive learner centered ideology Basic frames of curriculum in terms of education and training standards requirements (e.g. cultural axis) and curriculum structure with autonomy of school in planning VET and GE curriculum contents Strong position of curricular key competences falling under several typologies Detailed specifications of work-related competence components (knowledge and skills) and key competences in national and regional legal and curricular documents	Social and economic efficiency curriculum ideology Detailed curriculum frames in terms of modules and learning outcomes specifications for teaching activities set by the national VET programmes with a possibility to adjust it by 15% Loosely described components of competence (i.e. knowledge, skills and attitudes) in qualification standards Loosely described module assessment criteria in VET programmes Separate curricula (programmes) for general education and VET Prioritization of practical training in curriculum documents Instrumental approach to developing key competences (10% of curriculum) with loosely described related targets and learning outcomes Reduced required length of workplace learning
	Contextual factors	Significant differences among regions in terms of economical development, labor market structure, North-South divide Lagging productivity growth, low level of innovativeness Demographic challenge: emigration and aging of society Dominance of small businesses in economy Mismatch of skills supply demand, trap in low-skills equilibrium High unemployment of youth, one of largest NEETs rate in EU Poor employment perspectives for youth Image of ‘second chance’ and ‘alternative route’ VET with signs of attitudes change	Dominance of small businesses in economy Demographic challenge: decreasing population, emigration and aging of society Mismatch of skills supply and demand High youth unemployment Poor employment perspectives for VET graduates Low esteem of VET, high educational attainment of population and preferences for academic education Pressure of technological advancement

Meso level skill formation (education and labor market institutions)	Curriculum enactment in education institutions (teachers and trainers' activities)	Interpretation and translation of national qualification figures and/ or regional qualification profiles and other documents describing competences Creation and maintenance of authentic learning and working settings inside of school (workshops, laboratories, simulated companies, hybrid learning and working places to lesser extent) Coordination and facilitation of learning at real workplace Connection of theoretical and practical training Development of vocational and key competences in integrated way Reliance on active, 'experiential', learner-centered training methods Gaps in formative and summative competence assessment Teacher collaboration	Interpretation and translation of intended, nationally developed, curriculum and sectoral qualification standards Creation and maintenance of authentic learning and working settings inside of school (workshops, laboratories, simulated companies, hybrid learning and working places) Coordination and facilitation of learning at real workplace Integration of theoretical and practical training Embedded key competences and attitudes development Reliance on active, 'experiential', learner-centered training methods Institutionalized approaches to formative and summative competence assessment Teacher collaboration
	Contribution of labor market institutions	Limited contribution to curriculum design at school level Sharing of occupational innovations, contribution to teachers CPD Solid contribution to organization of workplace learning	Limited contribution to curriculum design at school level Sharing of occupational innovations, contribution to teachers CPD Restrained contribution to organization of workplace learning
	Implications of curriculum for teachers' agency and competences	Pragmatic-creative and skeptical-curriculum attitudes to curriculum reform Teachers in general feel free and autonomous in their curriculum decisions and are engaged in intensive curricular work CB education model is resisted by 'traditional view' teachers CB education implies 'adjustment' of teachers work and closer interdisciplinary collaboration	Standardized, disciplinary-conformist, pragmatic, creative freedom and skeptical-critical attitudes to curriculum reform Diverse degree of autonomy as experienced by teachers in curriculum decisions depending on their agency manifestation Challenges for teachers' professional identity Broadening of teachers' activities (broader work processes, theory and practice integration, vocational and key competences development,

			closer peer cooperation, formative and summative competence assessment)
	Contextual factors	Challenges of coping with technological advancement Institutional agency (openness and acceptance of new ideas, support for teachers, securing teachers collaboration) Background, young age and capacities of learners sometimes require to 'compromise' standards requirements and influences pedagogical strategies and work-based learning Availability of numerous methodological guidelines and academic papers related to curriculum reform and implementation	Institutional differences in terms of availability practical training resources and facilities Lack of human resources to implement curriculum Institutional agency (openness and acceptance of new ideas, support for teachers, securing teachers collaboration) Increasing diversity of learners Scarce methodological guidance to implement curriculum reform
Micro level skill formation (learner)	Experienced curriculum by learners	Integrated development of work-related and transversal competences and development of personality Active, 'experiential' training methods, bonding / pedagogical rapport with learners Learning experience based on learning and practicing in laboratories and workshops in schools and at workplaces	Development of work-related and key competences with prioritized development of the former Active, 'experiential' training methods, coaching and mentoring to support and activate learners Learning experience based on authentic learning and practicing situation in schools, sectoral practical training centers, hybrid learning and working settings Limited authentic workplace experience