

The Role of the Key Competences of VET Teachers in Enhancing the Quality of the Teaching Process

DOI: 10.15804/tner.2019.56.2.21

Abstract

Research problem – Today the quality of vocational education and training (VET) and especially the quality of the didactic process in VET highly depend on the capabilities of VET teachers to structure knowledge and skills they impart when dealing with the increasing volume of vocational and professional knowledge, and also on their capability to integrate the requirements of occupation and needs of students when coping with the challenges posed by fast technological development and changing student identity. The goal of this study is to explore the role and potential of key competences of VET teachers and how their development could equip VET teachers with the above-mentioned capabilities. The research methodology is based on both quantitative and qualitative research methods. The quantitative study was carried out by using a standardised questionnaire. Such a study helps disclose the personality traits of VET teachers, ways of their professional development and specific characteristics of their educational process. The participants in this research were VET teachers from different VET schools in Lithuania. Research data were analysed by using mathematical-statistical methods: descriptive statistics, nonparametric hypothesis testing, and factor analysis. Qualitative research was carried out by interviewing VET teachers from different VET schools and centres in Lithuania. Key competences and their development significantly contribute to the development of professional identity and personality factors of VET teachers. There is a direct and positive interdependency between the development of key competences of VET teachers and the quality of didactics, pedagogy and the expertise of VET teachers in the given occupational field. Key competences help VET teachers to shape and develop their professional identity and to cope

with the current methodological and organisational challenges in the fields of curriculum design, organisation of training processes (including application of contemporary educational technologies), and vocational didactics.

Keywords: *key competences, vocational teacher, quality of the didactic process, interactive teaching and learning techniques.*

Introduction

According to the official statistical data (SVIS, ŠMM, 2018), there are 3,481 vocational teachers in the VET schools of Lithuania. A total of 1,738 teachers and trainers in 22 universities of applied sciences in Lithuania teach disciplines related to occupational fields and career. Today, the quality of VET and especially the quality of the didactic process in VET highly depend on the capabilities of VET teachers to structure the provided knowledge and skills in dealing with the increasing volume of vocational and professional knowledge, as well as on the capability of VET teachers to remain open to the occupation and to the world of the student when coping with the challenges posed by fast technological development and changing student identity.

Research Problem

Seeking high quality vocational education and training and higher education, the teaching staff design and apply different educational technologies, which are based on the research paradigms of the quality of training and studies. The search for an acceptable and suitable model of the quality of education usually starts with the identification of the context of the learning and teaching quality and the analysis of different quality concepts and methodological approaches (Nze and Ginestie, 2012).

Ehlers (2007) claims that the quality of learning is not a given feature of the educational environment, but an outcome of the relationship between the learner and the learning environment, which makes it perceivable and assessable only in the factual context. Such a position stresses the importance of constructivist pedagogy and its place in the light of the concept of quality of learning and studies. Looking from this position, the concept of quality of learning in vocational education and training and higher education should be oriented not to the needs of an individual student, but to the partnership and cooperation between students, teachers, employers, researchers and other stakeholders in the

study process. Looking at the quality of teaching and especially at the impact of teaching on the acquisition of vocational competences and development of personality, one of the key factors is complex settings of different competences and abilities of VET teachers and trainers. There is no single prescription for such a setting which would guarantee the quality of teaching and satisfaction of learners. For instance, the study of Tacconi and Gomez (2013) on the factors of success of the Salesian VET centres in Italy revealed the views of former students on the competences, capabilities and personality traits of their teachers, which facilitated their successful learning and becoming successful professionals. The study showed that professional expertise and competence of those VET teachers who really made an impact on successful training and further employment/career of their students were strongly integrated with and linked to a wide range of personal skills and values. Another important aspect of high quality teaching is development of a good work ethic and students' attitude to work. Vocational education and training can and should be a space for searching and disclosing of the meaning of work for a person and society by fostering and developing a feeling and taste of well done work, which in turn pushes and motivates people to work properly (Tacconi, 2016). Discussion about high quality vocational teaching and learning is in a way inseparable from the discourse on the application of competence-based approach in VET teacher training. Day (2017) reminds us that in addition to benefits, such as criteria for teaching quality assurance via a minimal/threshold standard for teacher education, competence-based approach in teacher training also brings significant drawbacks, such as favouring of atomistic and reductionist learning outcomes, and difficulties in ensuring acquisition of holistic capabilities required by increasingly complex tasks of the teaching profession. Wuttke and Seifried (2017) note that competence-based teacher education approaches are heavily influenced by behaviourism and characterised by over-specification and fragmentation of learning. In order to overcome this drawback, current approaches of modelling of teaching competence draw on a more holistic teacher competence model, which consists of professional knowledge and beliefs, motivation and self-regulation (Wuttke and Seifried, 2017).

The quality of cognition in vocational education and training can be perceived and assessed by referring to a range of various indicators.

One of these indicators is a *structured curriculum*, methodologically based on different theoretical schemes (Katterfield and König, 2008). In the case of structured education and training, a VET teacher imparts essential hypothetical knowledge of a discipline to students by establishing the knowledge background.

Another indicator of high quality teaching is the *use of the forefront scientific knowledge* in the curriculum design. Application of technology-based educational measures in vocational education and training leads to depersonalisation of the VET curricula and raises the questions of its validity and trustworthiness. *Use of different forms of cognition for interactive learning and teaching* (Gao, Dai, Fan, Kang, 2010; Jossberger, Brand-Gruwel, van de Wiel et al., 2015). Keeping and maintaining of learning interactivity helps strengthen the emotional factors in the structure of cognition: affective goals, perceptual communication, and reflexive-experiential learning.

Motivating and meaningful learning (Ehlers, 2007; Jen-Her Wu, Tenyson, Tzyh-Lih Hsia, 2010) is highly important in developing the paradigm of praxiological (value-based) education. *Provision of the contents of learning at the level of ego* (McLoughlin, Lee, 2010; Kember et al., 2010) is an important condition to ensure interactive cognition of the object of occupation/a subject being taught by relating the contents of learning with the experience of a student. Another important indicator is the use of *technology-based teaching measures*, a widely explored field (McLoughlin, Lee, 2010). Teaching by applying different ICT measures and virtual environments enables teachers to maintain interactive communication with students during their learning, opens new possibilities for the visualisation of the learning contents and offers possibilities for learners to choose the time, place and pace of learning, to individualise the curricula depending on the needs of learners.

Coaching-based assessment of learning outcomes encourages students to make changes and obtain better learning results. VET teachers can apply a wide range of methods and measures of the coaching-based assessment, including formal and informal assessment methods based on the coaching theory (Armstrong, Fucami, 2009) and belief that each person has sufficient innate capacities to attain the goals of his/her life. *Empathy of VET teachers in the pedagogical relationship* (Duch, Andreasen, 2017)) is an important factor of high quality work of the teacher based on the social constructivist teaching approach.

Research Focus

The goal of this study is to explore the role and potential of the key competences of VET teachers and how their development could equip VET teachers with the above-mentioned capabilities.

Research Methodology

The research was based on the quantitative and qualitative strategies targeted to understand and to assess the importance of the identity of vocational teachers by exploring the manifestations of special and key skills.

The survey was conducted in 2015 and involved 346 VET teachers. In 2016, the survey was also carried out at the universities of applied sciences and involved 114 respondents from these universities. The survey questionnaire consisted of 17 questions on the factor indicators and 22 questions concerning predispositions.

Table 1 presents the diagnostic parts of the survey questionnaire and indicates the number of indicators to be filled in by the respondents. The questionnaire consisted of 2 open questions and 18 semi-open questions.

Table 1. Structure of the social-demographic questions of the survey

Types of questions	Contents	Number of indicators
Demographical	Age, sex and education of respondents	3
Professional status	Teachers' qualification and level of qualification, teaching field, type and location of the VET school	4
Professional experience	Work experience, position, work experience at other educational institutions and outside the education system	5

In order to collect data on the quality of the educational process, questions of the survey on the identification of the typical features of the real didactic process were prepared (Table 2).

Table 2. Questions of the survey on the features of the quality of the teaching process

Types of questions	Contents	Number of indicators
Organisation of the teaching process	Implemented model of vocational education and training. Structure and scope of professional activities of the teacher. Teachers' roles.	13 + 2 semi-open, 1 open
Pedagogical relationship	Elements of pedagogical process, ways of pedagogical communication, forms of cognition, teaching methods, and application of the methods of technology-based teaching. Specific characteristics of working with adults. Assessment of learning outcomes and motivation of students.	42 + 7 semi-open, 1 open

Types of questions	Contents	Number of indicators
Teaching and learning quality	Concept of teaching quality. Factors of/ obstacles to teaching quality.	21 + 3 semi-open
Meaningfulness of the pedagogical activity	The reasons for choosing the teaching profession, satisfaction with the professional choice and career.	11 + 3 semi-open

The data of the survey were processed by using the SPSS (*Statistical Package for Social Sciences*) software. Descriptive statistics (nominal and relational frequencies, mode [M], standard deviations [SD]) was used to characterise statistically the situations of professional activity of teachers. Non-parametrical methods of testing of statistical hypotheses were used to evaluate the statistical significance of the differences between surveyed groups and the possibility to generalise the findings of the survey for the surveyed population. The hypotheses were tested by applying χ^2 parameter. All the differences commented on further are statistically significant (significance threshold $p < 0.05$, $p < 0.01$, $p < 0.001$).

The goal of the qualitative research is to identify the most important changes of vocational education and training in recent years directly related to the researched object. Qualitative research was carried out in five establishments of vocational education and training. The participants in the research were selected from:

- 1 vocational training centre and 4 vocational schools;
- 2 big establishments of vocational education and training (with more than 1,000 students) and 3 small establishments of vocational education and training (with a few hundred students);
- 1 establishment in a big city; 1 – in a larger town (about 50,000 population), 1 – in a regional centre; 2 – in rural areas.

Research Results

Results of quantitative research

The findings of the research indicate that there are statistically significant differences in the attitudes of vocational teachers with and without university background to the teaching process ($p < 0.1$).

Table 3. Attitudes of vocational teachers to the teaching process

	University Education	Non-university (vocational, higher professional) education	Mann-Whitney U test		
	Mean (SE)	Mean (SE)	U	p-value	
19.8. Amount of time dedicated to research and analysis (e.g., surveys of students, analysis of activities etc.)	0.76 (0.06)	0.53 (0.10)	7,257	0.077	Vocational teachers with higher developed key competences dedicate more time to research and analysis
20.5 Moral leader, example to follow for students	3.22 (0.09)	3.57 (0.18)	6,469	0.098	Vocational teachers with developed professional competences agree with this aspect to a greater extent
22.2. Trying to create a favourable emotional climate in the classroom by all means	4.53 (0.37)	4.40 (0.07)	8,270	0.066	Is applied more by VET teachers with the university background
24.2. Interactive teaching (enhancing reflection, evaluating problems related to the particular subject)	4.23 (0.05)	3.95 (0.10)	6,980.5	0.007	Is applied more by VET teachers with higher developed key competences
24.7. Methods of practical activity	4.18 (0.05)	4.41 (0.10)	7,572	0.056	Is applied more by VET teachers with higher developed professional competences

The vocational teachers with higher developed key competences dedicate more time to research and analysis. The teachers with better developed key competences tend to be more involved in the activities related to research and analytics.

The vocational teachers with developed professional competences agree with the statement that they must be moral leaders and examples to follow for students more.

The VET teachers with university background also try to create a favourable emotional climate in the classroom by all means more.

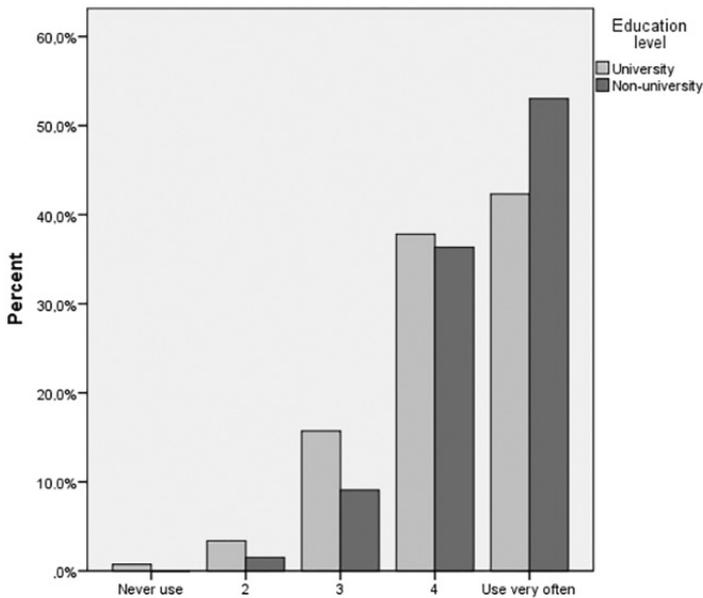


Figure 1. Use of methods based on practical activity.

The VET teachers who do not prioritise the development of key skills in the process of their personal development tend to use teaching methods that develop the skills of reproduction activity more (Figure1). Such methods are more applied by the teachers with higher level professional competences (p-value 4.41 [0.10] for the teachers without university background, 4.18 [0.05] for the teachers with university background). It can be related to different understanding by these teachers of the role of key skills and their development in the training process, when these teachers do not see or value key skills per se, but only see them in the context of a specific work process, work performance and work ethic (Tacconi, Gomez, 2013; Tacconi, 2011).

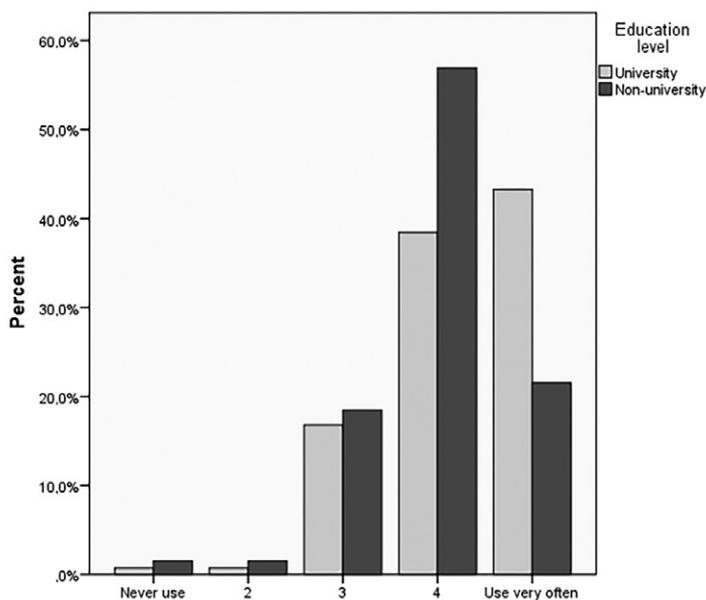


Figure 2. Use of interactive methods of teaching that promote reflection and evaluation of problems related to the specific subject.

The VET teachers with better expressed key skills pay more attention in the teaching process to the interactive cognition of the objects of work: p-value 4.23 (0.05) for the teachers with university background and 3.95 (0.10) for the teachers without university background (Figure 2). It can also be explained by better abilities of such teachers to articulate professional expertise and know-how and to combine them in the teaching process with the abilities of open and reliable communication with students (Tacconi and Gomez, 2013; Tacconi, 2011).

The VET teachers with better expressed key skills pay more attention in the teaching process to the interactive cognition of objects of work and occupation: p-value 4.53(0.37) for the teachers with university background and 3.95 (0.10) for the teachers without university background (Figure 3). This allows them to create interactive educational environments and to communicate with students better and more effectively. The teachers with higher level professional competences agree with the statement about the importance to be a moral authority for students more: p-value 3.57 (0.18) for the teachers without university background and 3.22 (0.09) for the teachers with university background (Figure 4).

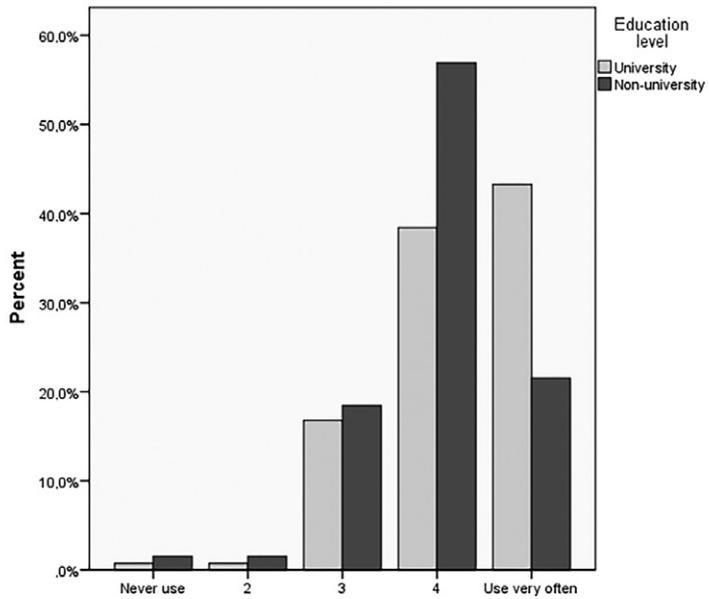


Figure 3. Trying to create a good emotional environment during lessons.

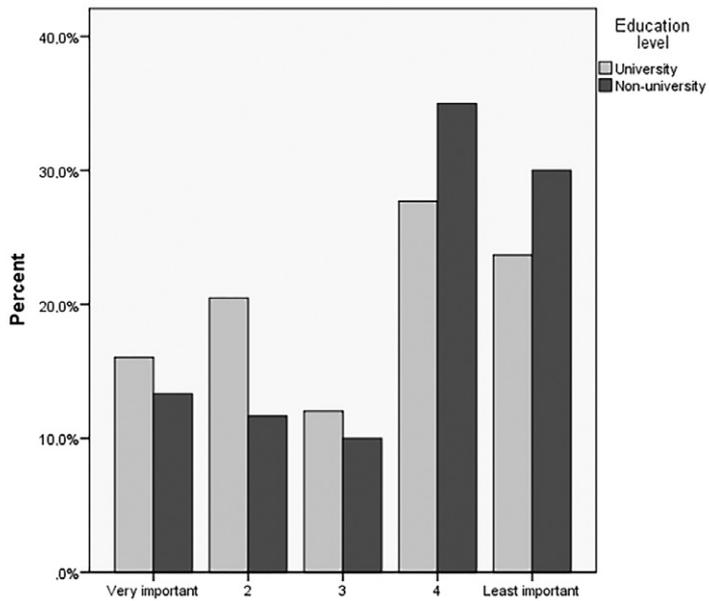


Figure 4. Being a moral example to students.

The stronger influence of the special competences of the teacher is defined by the identity of the student, when he/she prefers cognition of the objects of chosen occupation at the level of reproductive cognition.

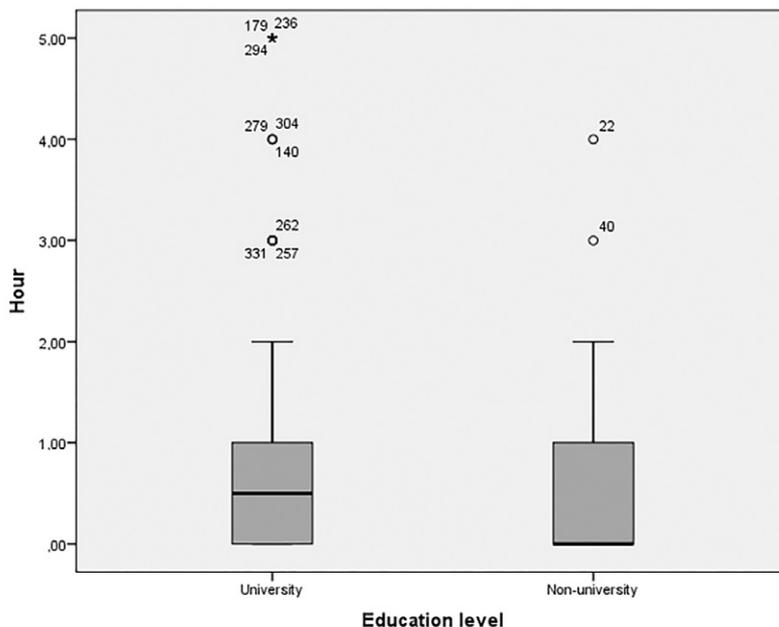


Figure 5. Hours dedicated to research and analytical activities (surveys of students, analysis of activities, etc.)

The persons with better developed key competences tend to be more involved in the activities related to research and analytics (Figure 5). The teachers with higher level key competences dedicate more time to analytical and research activities: p-value 0.76 (0.06) for the teachers with university background and 0.53 (0.10) for the teachers without university background.

Results of the qualitative study

Qualitative research was aimed to disclose the processes of professional development of the VET teachers, as well as the institutional and socio-economic context of these processes.

The research disclosed that the VET teachers perceive continuous professional development as a natural process and inherent part of the qualification require-

ments. One of the key drivers of continuing professional development is curriculum change and development of new modular VET curricula. This change requires teachers to adapt their teaching to the requirements of competence-based training.

“This teaching year I have to prepare for teaching in management and business economics by preparing new teaching material according to the requirements of the competence-based modular training” (R4).

The VET teachers are also forced to search for the ways on how to satisfy changing competence needs of the enterprises in order to ensure employment of graduates.

“Now companies require that construction workers have the certificate for working in the height before accepting them for the job. Therefore, we have to ensure the provision of corresponding competences for our students and graduates.” (R51).

Implementation of the new competence-based modular curricula also tends to contribute to increasing turnover of the teaching staff in the VET schools.

“We have hired new VET teachers to teach new modular curricula such as management or logistics” (R4).

However, new VET teachers often lack different competences. VET teachers with the background qualification in the field of teaching often lack professional competences in a given teaching field.

“Before starting the teaching in the field of car repair I myself had to complete the training course in this field” (R15).

Some teachers feel the internal need for professional development, while others are driven only by imposed obligation or extrinsic motivation, which often presents an obstacle.

“The financial motivation for continuous training of teachers is absent, because your wage will not change due to training. It is just a formal obligation which drives teachers to learn” (R16).

Development of professional and, especially, technological competences is regarded as a key precondition of the successful transition from the subject-based teaching to the modular competence-based teaching and training.

“When teaching in the module VET teacher just must know how to work with the real equipment in the different fields like welding, mechanical metalworking or woodworking. That is why competence development in a specific professional field is of highest importance here.” (R35).

VET change and curriculum reform also implies significant change of the teaching and learning processes and related pedagogical relationships. The scope of pedagogical activity of VET teachers and pedagogical relationship with students are more strongly focused on the satisfaction of work and employment requirements.

It is required to pay much more attention to the practical training on the job, which creates a challenge, on how to ensure sufficient provision of the theoretical knowledge.

“I work with students by giving them a concrete work task in assembling of aggregates and when I see the problems and obstacles that they face, I go to the blackboard and start to explain related theoretical issues.” (R7).

The VET teachers also notice subjective factors of VET curriculum change related to the changing attitudes of students. For example, students increasingly show their preference for the shorter training courses and faster transition from school to the labour market.

“Duration of training course today is very important for students. They become more and more interested in acquiring the skills and competences as fast as possible.” (R23).

Changing attitudes of students to learning requires from the teachers to adapt their teaching strategies accordingly.

Discussion

What are the implications of higher education for the pedagogical and didactical performance of the VET teachers? The research showed that higher education is an important factor for the development of key skills and personal-social values of VET teachers. This facilitates strengthening of the focus on the development of key skills and values in the teaching process. It is an important finding to be considered in the reforms and changes related to VET teacher training. However, very often the existing institutional and socio-economic conditions and pressures, such as the shortage of resources, insufficient number of VET teachers, urgencies in “replacing” the teaching staff, difficulties in attracting new recruits to the teaching profession, etc., lead to the application of the easiest way of provision of teaching competences and qualifications to VET teachers by circumventing or “simplifying” the pathway of academic studies. Such practices seriously limit the potential of the teaching staff in VET to ensure holistic education and training in terms of curriculum and teaching methods, at the same time leading to the provision of narrowly specialised and overly function-oriented (taylorist) vocational competences and qualifications. The research also revealed that university education provides teachers with highly effective settings of pedagogical and didactic knowledge and skills, which in combination with key skills lead to the important innovations and improvements of the didactic processes.

VET curriculum reform, introduction of the competence-based modular VET curricula open a wide range of new competence requirements for VET teachers in order to ensure coherent provision of theoretical knowledge and practical skills, to strengthen practical training in the real work situations and to satisfy increased demand of flexible organisation of the training process.

What are the implications of the professional experience of VET teachers for their pedagogical and didactic performance? Professional experience, or “manual” intelligence is important not only as a source of professional know-how and practical skills transmitted in the teaching process, but also as an important source for understanding and transmitting of the professional values and ethos to students, becoming a real moral example and model for students. What are the future directions for research in this field? One of these fields is researching the changes of the contents of VET teachers’ work by referring to the changes of the roles and functions of the initial VET in the conditions of lifelong learning, development of the qualifications systems and decentralisation of the VET systems and processes (e.g., implementation of the learner-centred paradigm, modularisation, development of work-based learning and training approaches). These changes can

have significant implications for the roles and responsibilities of VET teachers and trainers, as well as for competence requirements.

Conclusions

Current changes of the VET curricula, reforms of the VET systems and processes require following the holistic approach to the competences of VET teachers and trainers. What matters for the quality of vocational education and training and for meeting the changing demands of work processes and society is not just provision of vocational knowledge and skills that meet the requirements of workplaces, but ensuring a deep understanding of the nature and contents of work processes, as well as the roles of employees in these processes.

These conditions also require revision of the structure and content of the competences and qualifications of VET teachers and trainers by paying more attention to those elements that traditionally are not strongly identified with vocational teaching and training, such as key competences, personal attitudes and values to teaching and learning, constructive pedagogical relationships with students.

Current reforms and institutional changes in VET, such as decentralization of the VET provision, implementation of competence-based VET modules, intensification of work-based learning and application of ICT-based learning solutions have rather controversial implications for VET teachers' competences and their development. On the one hand, these changes demand development of educational-academic background, professional and pedagogical competences of the VET teachers (e.g., demand of higher education). Research clearly indicated a positive impact of higher education of VET teachers on the teaching processes and attitudes to students and quality of vocational teaching. On the other hand, the dynamics of these changes and neoliberal policies of their implementation tend to focus attention on the cost-effectiveness of VET teacher training by orienting to the minimum (threshold) requirements to teachers' competences imposed by the current needs of workplaces and possibilities of educational institutions.

References

- Anderson, T., Dron, J. (2011). Three Generations of Distance Education Pedagogy. *International Review of Research in Open and Distance Learning*, 12(3),80–97.
- Armstrong, S.J., Fucami, C.V. (2009). *Management Learning, Education and Development*. SAGE.

- Day, C. (2017). Competence-based Education and Teacher Professional Development. In: Competence-based Vocational and Professional Education, edited by M. Mulder. *Technical and Vocational Education and Training: Issues, Concerns and Prospects*, Vol. 23 (Bern: Springer-Verlag), pp. 165–182.
- Duch, H., and Andreassen, K.E. (2017). VET again: now as a VET teacher. *International journal for research in vocational education and training*, 4 (3), 289–305.
- Ehlers, U.D. (2007). The “E” – Empowering Learners: Myths and Realities in Learner-Oriented eLearning Quality. *eLearning Papers*, 2(1), 1–9.
- Gao, Q., Dai, Y., Fan, Z., Kang, R.. (2010). Understanding factors affecting perceived sociability of social software. *Computers in Human Behavior*, 26, 1846–1861.
- Jen-Her, Wu, Tenyson, R.D., Tzyh-Lih H. (2010). A study of student satisfaction in a blended e-learning system environment. *Computer & Education*, 55, 155–164.
- Jossberger, H., Brand-Guwel, S., van de Wiel, M.W.J. (2015). Teachers’ Perceptions of Teaching in Workplace Simulations in Vocational Education. *Vocations and Learning*, 8(3), 287–318.
- Katterfeld, C., König, G.(2008). Analysis of e-learning software and guidelines for quality assurance in photogrammetry, remote sensing and GIS. *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, XXXVII, Part B6a, 45–53.
- Kember, D., McNaught, C., Chong, F.C.Y., Lam, P. & Cheng, K.F. (2010). Understanding the ways in which design features of educational websites impact upon student learning outcomes in blended learning environments. *Computers and Education*, 55, 1183–1192.
- McLoughlin, C., Lee, M.J.W. (2010). Personalised and self-regulated learning in the Web 2.0 era: International exemplars of innovative pedagogy using social software. *Australasian Journal of Educational Technology*, 26(1), 28–43.
- Nze, J.S.B. and Ginestie, J. (2012). Technical and vocational teaching and training in Gabon: how future teachers build their vocational identity? *International Journal of Technology and Design Education*, 22(3), 399–416.
- O’Neil, H.F. (2013). *Web-based learning: Theory, research, and practice*. Routledge.
- Tacconi, G. and Gomez, G., A., M. (2013). *Success stories. Quando è la Formazione Professionale a fare la differenza (Success stories. When the vocational education and training makes difference*. Roma: CNOS-FAP.
- Tacconi, G., 2016. Il mestiere del formatore secondo Primo Levi (The teachers work according to Primo Levi). *Rassegna CNOS*, 32, 65–80.
- Tait, A. (2014). From Place to Virtual Space: Reconfiguring Student Support for Distance and E-Learning in the Digital Age. *Open Praxis*, 6, 5–16.
- 28–57.
- Wuttke, E, and Seifried, J. (2017). Modeling and Measurement of Teacher Competence: Old Wine in New Skins? In: Competence-based Vocational and Professional Education, edited by M. Mulder. *Technical and Vocational Education and Training: Issues, Concerns and Prospects*, Vol. 23 (Bern: Springer-Verlag), pp. 883–902.